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FOREIGN TECHNOLOGY DIVISION

FORECASTING AND DIALECTICS

by

Adolf Bauer and Wolfgang Eichhorn

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Block	Italic	Transliteration	Block	Italic	Transliteration
А а	*А а*	A, a	Р р	*Р р*	R, r
Б б	*Б б*	B, b	С с	*С с*	S, s
В в	*В в*	V, v	Т т	*Т т*	T, t
Г г	*Г г*	G, g	У у	*У у*	U, u
Д д	*Д д*	D, d	Ф ф	*Ф ф*	F, f
Е е	*Е е*	Ye, ye; E, e*	Х х	*Х х*	Kh, kh
Ж ж	*Ж ж*	Zh, zh	Ц ц	*Ц ц*	Ts, ts
З з	*З з*	Z, z	Ч ч	*Ч ч*	Ch, ch
И и	*И и*	I, i	Ш ш	*Ш ш*	Sh, sh
Й й	*Й й*	Y, y	Щ щ	*Щ щ*	Shch, shch
К к	*К к*	K, k	Ъ ъ	*Ъ ъ*	"
Л л	*Л л*	L, l	Ы ы	*Ы ы*	Y, y
М м	*М м*	M, m	Ь ь	*Ь ь*	'
Н н	*Н н*	N, n	Э э	*Э э*	E, e
О о	*О о*	O, o	Ю ю	*Ю ю*	Yu, yu
П п	*П п*	P, p	Я я	*Я я*	Ya, ya

* ye initially, after vowels, and after ъ, ь; e elsewhere. When written as ё in Russian, transliterate as yё or ё. The use of diacritical marks is preferred, but such marks may be omitted when expediency dictates.

FORECASTING AND DIALECTICS

Adolf Bauer and Wolfgang Eichhorn
(German Democratic Republic)

Expanding the Functions of the Forecasting Social Processes

The concept of "forecasting" is presently finding ever increasing application in scientific thought as well as in ordinary speech. Interest in the scientifically based forecasting of social development has increased everywhere.

The rapid and profound changes in economic, political and social relations which are connected with the transition from capitalism to socialism on a world-wide scale and the constantly increasing rate and complexity of development of contemporary productive forces are transforming the forecast of social development as a whole as well as in separate areas of public life into a pressing need. In this connection, in socialist countries, as well as under conditions of a state-monopoly system to a certain extent, the reorganization and broadening of the functions of forecasting activity is being observed. At present, each social system is striving toward the long-term substantiation of its policy. Foresight in the development of contemporary productive forces and the forecasting of the most effective production and management structures, as well as problems of the entire social forecasting in general are being transformed more and more into an arena of the ideological struggle between the socialist system and

the system of state-monopoly capitalism and all engendering new aspects of the ideological struggle.

The successful development of the socialist countries and the growing influence of marxism-leninism throughout the world as well as the aggravation of the internal contradictions of imperialism are forcing the theorists of state-monopoly capitalism to look for *systems, concepts and solutions* on the basis of the development and formation of the system of state-monopoly capitalism. An expression of these concepts is the global strategy of the United States and its West German variations, and the concept of the so-called "molded society"; the ideological and political oracles of West German imperialism say little about it, but it is developing widely in the "Project for Europe" of Franz Strauss.

For marxism-leninism, the need and significance of social forecasting has caused no doubts since the time publication of the "Manifesto of the Communist Party." The strength of the communist ideology and its superiority over bourgeois ideology are based to a considerable extent on the unity of scientific forecasting and guiding revolutionary activity. In an era of the most acute struggle between socialism as a social system and the system of state-monopoly capitalism as well as from the point of view of the scientific-technical revolution, the further development of marxist social forecasting should be one of the primary tasks of marxists-leninists.

In the GDR (German Democratic Republic) two aspects of the development of the problem of social forecasting are acquiring special significance. First, it is necessary to define more precisely the forecasting notions, about the development of the socialist society. We proceed on the basis that socialism must be considered as a society which develops according to its own principles, as the social system which is in contradiction to the system of state-monolopy capitalism. Here, theoretical problems arise which could not have been forseen in detail by marxists earlier. These theoretical problems are closely linked first with the systems character of a socialist society, with

the growing complexity of social ties, and with the formation of the developed social system of socialism and of its individual systems. Necessary, therefore is a single united scientific explanation encompassing all components of marxist-leninist theory and the forecasting of the comprehensive development of socialist social formation on its own economic, political and ideological bases.

In the second place, one ought to emphasize the need for a solution of the problems of organization and control which are connected under socialist conditions with the scientific-technical revolution and the economic processes which rrespond to it. For theoretical generalizations of problems of social forecasting, this creates a completely specific field of activity. This work should serve the theoretical, marxist-leninist substantiation of problems of direction and of control of the technical revolution under socialist conditions. It should be oriented toward the development of a marxist of science of organization and be capable of using the most progressive experience of scientific management, and at the same time, its contemporary set of scientific tools (for example, cybernetics, operations research). Now the situation is such that the struggle for the victory of the socialist social system over capitalism depends in enormous measure on which successess can be attained in the solution of problems of organization and control which are put forth by the scienfitic-technical revolution and are connected with it by social processes. This emphasizes the significance which is attached to a problem of forecasting the development of a system of productive forces, the social structures which they cause, and first of all necessary forces and capabilities of the subjects of public development, as well as the democratic-centralist forms of their organization and ideology. This last proposition, and specifically which directly concerns the philosophical problem of man and socialist society, should be specially isolated.

Let us also note that the special attention being given to the creation of a marxist science of organization, including the problems of social forecasting, does not at all signify support of the

technocratic concept of forecasting. We are speaking first of all about the fact that as Marx says, "a working society has an increasingly more scientific attitude toward the process of its progressive production and reproduction" (K. Marx. Grundrisse der Kritik der politischen Öconomie, Berlin. 1953, S. 231). We are talking about the marxist concept of free individuality based "on the universal development of individuals and on their subordination to collective social productivity as their own public property" (Ibid, pp 75-76).

The increasing significance of forecasting requires the comprehensive development of a theory of social forecasting, including its philosophical aspect. This article intends to examine some of the problems connected with this.

On the Essence of Forecasting

Characteristic of scientific forecasting is first that it is based on the knowledge of the laws and on the methods which follow from them; consequently, in certain cases it can check and correct and refute, make more precise, or develop further its own propositions. The completely accurate and comprehensive preliminary knowledge of the future is impossible and logically senseless.

One ought to distinguish scientific forecasting from *empirical predictions* which, in many respects, occupy an intermediate position between scientific and unscientific predictions. We are speaking about predictions at the basis of which lays the simple daily experience of people and a certain regularity and interconnection of events which is analyzed, however, theoretically. For the duration of all of history, empirical predictions played a considerable role in the life of people; they were fully sufficient under conditions of immobile and limited production and social needs. At the present time, in a situation of the continuous change of productive forces, a high degree of socialization of production, and the class struggle which is becoming more aggravated in a number of countries, as well as socialist tranformations, empirical predictions proves to be

completely insufficient. The specifics of the processing of information required in forecasting are that information about the future condition of the given system (the object of the forecast) is derived from initial information about a system of available elements. Information about the given condition (final information of the forecast) also represents the forecast itself. The procedure in processing the information to obtain the final information of the forecast can be called forecasting.

The logic diagram of forecasting activity can be expressed as follows: G and S → P. In this case G is the aggregation of the statements of the law, S is the aggregation of single statements which concretize conditions of G and which comprise the necessary item of information, including statements about conditions of operation of the laws, and P is a statement (or system of statements) about the previously unknown condition of things which, because of the given statement (or statements) becomes known to a certain degree, but is still not observable at the time of its derivation.

In accordance with this, the concept forecasting can be defined as *a statement about the state of things previously unknown and still not lending itself to observation which is obtained within the framework of scientific theory as the result of a conclusion from statements about regularities and the primary or secondary conditions of the system being forecasted or its behavior.* The prerequisites for a forecasted conclusion can also include hypothesis.

The definition of a forecast as statements about a previously unknown state of affairs is necessary in order to separate the forecast from statements about an already known state of affairs. A definition which states that forecasts are statements about a still unobserved state of affairs, points to a well-known uncertainty inherent to any forecast not only because of the normally present deficiency in the initial information for the forecast, but also because the forecast may not proceed from the same state of affairs as the prerequisites from which it is derived. Forecasts are always statements which can be called true only with a certain probability.

This probability ("inductive probability") is determined by the degree of confirmation of the forecast statement by the initial information of the forecast. The assertion that a forecast is the *result of a conclusion from statements of a law and statements about the initial secondary conditions* is necessary, first, to distinguish forecasting from *explanation*. Explanation consists of drawing conclusions about a known state of affairs using statements about regularities and the conditions for their action. If it is possible to derive a statement about a known state of affairs from statements of the law and conditions, then the given state is explained. The given definition is necessary, in the second place, to distinguish forecasting as a scientific prediction from a unscientific prediction (prophecy, utopia and so forth). Third, the give definition helps to distinguish forecasts from hypothesis. Hypothesis, just at forecasting, is a statement about a thus far unknown state of affairs. Hypothesis is distinguished from forecast in that it is used in explaining a known state of affairs, i.e., it comes forward in the prerequisites for a conclusion, while the forecast is in the results of the conclusion. In the explanation, which uses the hypothesis, the unknown is judged to a certain degree from the known, while it is always characteristic of a forecast that it represents a conclusion from the known about the unknown.

As concerns the assertion that the prerequisites of the forecast conclusion may also include hypotheses, actually the uncertainty contained in the hypothesis is also transferred to the forecast. That fact that forecasts in principle have a probabilistic character also follows from the fact that their initial information, as a rule, contains hypothetical components. With the hypotheses which enter into the forecast we can talk about the hypothetical quality of the regular ties of the forecasting process itself. But we can also speak about hypotheses which have the right to use already known laws of similar objects or processes instead of the given regular ties. In this instance, we will have one of the forms of using the modeling method in forecasting.

For the forecast and its compilation, to a certain degree it *makes no difference whether or not there presently or will no longer exist* the state of affairs about which several forecast statements have already been made or, at the moment of their compilation, have not yet been observed. The logical structure of the process of comprehension and the deduction of a previously unknown state of affairs from the statements of laws and conditions remain the same in all these cases.

If we are discussing a previously unknown state of affairs which will arise only in the future, this will be *a forecast in the narrow sense of the word.* Statements about a state of affairs previously unknown in the past, which are contained in a certain way in the definition of forecasting, can be called *retrospective statements, and the method of their compilation - retroduction (retroduktsiya)* (C. G. Hempel. The Theoretician's Dilemma. "Minnesota Studies in the Philosophy of Science." Vol. 2, Minneapolis, 1958, S. 87). Similarly for statements concerning a thus far unknown state of affairs already existing at the present time one can apply the term "future statement" or circumdiction (tsirkumdiktsiya). In most cases, forecasting in the narrow sense of the word, pertaining to the fact that a certain state of affairs can be observed in the future may be linked with future as well as with retrospective statement.

The difference between the forms discussed above thus consists not of the logical structure of thought activity on the basis of which they are obtained, but only of the time relationship. With forecasts in the narrow sense of the word and retrospective statements, the difference in content between the initial and resultant situation is closely linked with the time differentation which should be "overcome" ahead of time, in which regard the time direction, in which this mental temporary transition from the present occurs changes to the opposite depending on the circumstances: with forecasting in the narrow sense of the word it is directed toward the future, and with retrospective statements - toward the past. On the basis of this they

speak of "time symmetry," about forecasts (in the narrow sense of the word), and about retrospective statements.

This time symmetry, however, does not mean that for every prediction the corresponding retrospective statement can be formulated, as some neo-positivists assert. For example, it is possible to make forecasts from many statistical laws, but not retrospective statements. Thus, it is known the very probability of subsequent event can be determined from the probability of preceding events and that, conversely, very rarely can the probability of preceding events be deduced from the probability of subsequent events.

If we designate the present by t_0, then all statements about previously unknown phenomena which are in the positive direction of the time axis will be forecasts in narrow sense of the word regardless of whether the initial information pertains to the forecast of phenomena, the time components of which are $t_x = 0$, or $t_x < 0$ (this comprises majority of cases), or $t_x > 0$. Conclusions t_{+2} on t_{+1}, despite the fact that they are outwardly similar to retrospective statements, are forecasts in the narrow sense of the word. Similarily conclusions about t_{-2} and t_{-1} are retrospective statements if they lead to statements about a thus far unknown state of affairs.

Forecasts can be distinguished not only by the time relation between the forecasting statement and the state of affairs being forecast. They can be classified according to types of prerequisites, i.e., by types of statements of laws used to compile the forecasts, by types of empirical statements which give concrete expression to the conditions, and by the specific character of the conclusions P and the result of the forecast itself.

With the establishment of a certain initial time and secondary conditions, predictions can be derived from laws since laws always define the sphere of possibilities by fixing the invariants. As concerns possibilities of classifying forecasts by type of statements of laws, we should point first to the difference in forecasts obtained

on the basis of causal or structural as well as dynamic or statistical laws. There is no doubt that forecasts can be made on the basis of causal laws and laws of development. In this case, it is necessary to emphasize that the identification of causality and conditionality which is widespread among the neo-positives (Schlik, Reichenbach, Sternmueller) does not justify itself in this case. Despite the fact that single causal connections do not provide prediction, for the treatment of forecasts they can nevertheless be used to process forecasts on the basis of structural laws which definitely do not contain a time characteristic. Mendeleev's foresight can serve as an example of this. From the point of view of the theory of knowledge, forecasts on the basis of dynamic laws cause hardly any difficulties. Dynamic laws describe determined connections unambiguously. Statistical laws, conversely, describe behavior or peculiarities of the aggregate of random elements. Forecasts can also be developed on the basis of similar laws. Statistical laws have decisive significance at least form the forecasting of social phenomena. The larger the number of elements on which they can rest, the more reliable are the statistical laws. It may happen that a forecast will be possible for an aggregation of elements, the probability of which is closer to first element, i.e., it can be considered as most reliable while only an insignificant degree of probability can be achieved.

As concerns the possibility of classifying forecasts on the basis of empirical statements about conditions which render concrete definitions (isolated information), in the area of the social forecasting it first is very important to distinguish whether the isolated information pertains to the initial or secondary conditions, and whether it depends on the action of people and their decisions or is under their essential influence.

In practical forecasting until now tremendous significance was had by those criteria for the classifications of forecasts in which the specific character of the conclusion (P) was decisive, often together with nature of its prerequisites. Here we distinguish the following

criteria: "the *object* of the forecast (natural processes, social phenomena; processes, in which natural and social components are approximately equivalent), *extent* of the forecast (general, global, partial forecasts), *time* period of the forecast (short-term, average, continuous forecasts), *reliability* of the forecast (guided forecast with an unambiguous determination, intermediate forecast during stochastic processes), *confidence* in the forecast (forecast with strongly or weakly influencing conditions). A certain role in the classification of forecasts is also played by the *singleness of purpose* of the forecast and its *method*. One ought to distinguish from purposeful forecasts, for example, forecasts directed immediately toward the rationalization of human activity as well as forecasts, which satisfy predominatly theoretical needs (for example , in the case of verification of hypotheses). On the basis of methods being applied, it is possible, for example, to distinguish consecutive forecasts (Trendprognosen), component forecasts, systems forecasts and so forth.

Some Conclusions Concernings Forecasting

From the foregoing, several general conclusions can be drawn which have significance for forecasting and, first of all, for the forecasting of social processes in a socialist society.

1. There can be no talk about scientific forecasting without a theoretical analysis of the processes which take place and without consideration of the practical experience and creative utilization of marxist-leninist theory in the area being forecasted. The forecasting process is first of all scientific-theoretical activity.

2. A decisive theoretical prerequisite of any forecast is knowledge of *regularities* of the life of society. Very incomplete information about laws of any process makes forecasting impossible. Since it is impossible to obtain comprehensive information relative to all laws which have an influence, in certain cases we are forced to advance hypotheses about regularities.

3. For the development of a forecast, decisive significance is had by a competent and exact, understanding of the isolated conditions from which the processes being forecast begin or which they influence. Pertaining to them are both the statements about the realization of the conditions for actions necessary for the forecasting of laws and the data about the conditions and factors which contribute to the object of the forecast. As a rule it is sufficiently difficult to obtain information about the initial and secondary conditions of the processes being forecast. In most cases, especially in social forecasting, it is necessary to work initially with a number of influencing factors which are difficult to view and which can be understood only when they have been combined in groups. Secondary and accompanying conditions frequently cannot be determined accurately at once, especially when in certain cases they lay within the basic sphere of action of the subjects, and it is considered that much has already been attained if they have been soundly evaluated and if convincing hypotheses have been expressed about them, or they can be combined into large classes of possibilities and alternatives of action. The problem of the correct understanding of the initial and secondary conditions has great methodological significance for forecasting because errors committed from the very beginning are also carried over to the forecast conclusions, potentially affecting the forecast. Therefore, for successful forecasting during the analysis and evaluation of initial and secondary conditions, mandatory prerequisites are strictest objectivity, scientific competence, and the exclusion of voluntarism and the embellishment of reality.

Methodological Problems of Forecasting

Forecasting is the result of *creative* spiritual activity. From the theoretical as well as from the practical point of view methodological problems play a considerable role in it. In the last analysis, the given problems are closely linked with the cognitive - theoretical prccess already considered above, since forecasts are always established by movement from the known to the unknown: consequently, forecasts are statements, which cannot be directly

verified empirically but are necessary for the practical search for a solution to a problem. In forecasts, we are speaking of theoretical models which have not yet been confirmed or are at least insufficiently completely established, models which can be considered correct with more or less sufficient probability but, presenting colossal practical value, can be used in explaining the conscious, purposeful transformation of the world. Applicable forecasting to a greater extent than with respect to other spheres of theoretical activity are the instructions of V. I. Lenin that dialectical thinking is necessary for the cognitive process and that knowledge must be considered not as something finished and unchanged, but as the necessity to investigate how knowledge arises from a lack of knowledge.

If it is necessary to consider the future in scientifically - realistic manner, the question first arises as to how to properly analyze and diagnose the past and the present. The forecaster always faces the need to combine with each other dialectrically contradictory systematic requirements. Thus, forecasting, requires the ability to abstract from what is taking place today. The future is not simply an analogy of the past or the present; it is not disclosed by the mechanical transfering of peculiarities of the present to the future. On the other hand, the future may, of course, be understood only as a result of an analysis of the past and the present. Here we have a dialectical contradiction which should be surmounted when developing the forecast. Similar contradictions arise between the need to have *timely and extensive* information and the need for the *reliability and the detailed nature* of the forecast.

One of the most important systematic requirements of forecasting consists of providing the information basis for the forecasts. Here we come up against two main problems. The first pertains to the initial forecast information and consists of its timely receipt since it is necessary to be confident that just such information is

at the moment of preparation of the forecast. In connection with the fact that such information will never by sufficiently complete by this moment, it should be developed, at least in the beginning, by parts. When information about the initial situation and its modification is sufficient, it is necessary to process it diagnostically so that it can be used for forecasting. Information about the state of affairs in the past, present and – as far as it is already known – in the future which is important for forecasting should thus be provided in accordance with its significance so that the individual components of the tie between the known and still unknown state of affairs corresponds to their actual effect. This process is called diagnosis (Diagnose and Prognose als wirtschaft-wisssnschaft liche Methodenproblem. Hrsg. von H. Giersch und K. Borchardt, Berlin, 1962. Schriften des Vereins für Sozialpolitik, Bd. 25).

Only a clear diagnosis provides the opportunity for forecasting. The more complicated and complex the ties of the process being forecast, the more difficult will be the receipt of information necessary for forecasting and diagnosis; the further the forecast is removed from present. In this instance quantitative data are reduced more and more, and predominantly qualitative data become more unreliable; however, the hypothetical character of information increases. Furthermore, it should be considered that any information loses its value with time. Therefore, the most stable value is acquired by information to which all ordered statistical indices (tables, charts, indexes, systems, and so forth) are added along with the expression of the law in most cases.

Also pertaining to the problem of obtaining information is the question of its optimality. It is not compulsory that 100% of the information be optimum because the forecast is already possible with a lower percentage: the forecast of a certain feature does not require obtaining further information either if not connected with its possible improvement.

The second problem connected with the information basis of forecasting, pertains to the processing of the initial information. All things being equal, the receipt of the pithiest possible final information depends first on the forecasting method being used. Under very simple conditions, the forecast can be made using a simple logical conclusion. A logical foundation has also been laid in the special methods of the majority of socially significant forecasts. By themselves these methods are sufficiently numerous. In social forecasting, the forecast of the technical and economic development of productive forces is exactly that area for which the given methods have been developed better than for all the others.

Continuous social processes are forecast most authoritatively. They include, for example, processes of complexity and of satisfaction (in economics, this means satisfaction of specific needs). Other processes, in contrast with continuous processes, have been connected with the discreteness of social life and with the introduction of fundamental innovations. Their forecasting poses high scientific requirements for the forecasters.

Of special philosophical interest are direct and indirect methods of forecasting. By a direct method, we mean extrapolation of the levels and rhythms of motion. This method remains a necessary tool for forecasting (first of all, for processes of development), although it is an unreliable tool, the uncritical utilization of which can lead to the metaphysical transfering of conditions of the present directly into the future. With the employment of similar standards for forecasting purposes it is always necessary and methodologically very importantly to put the question of why, on the basis of which internal processes, it is assumed that the given conditions will remain unchanged in the future and why it is improbable that they will change. This requirement is directly directed towards the internal dialectics of the process being forecasted, toward a complex system of ties.

More complex in a forecasting-methodological respect are the so-called indirect methods where the processes being forecast are examined from the viewpoint of their internal organization and their internal structure and connections with the surrounding atmosphere. We should first mention *component and systems* methods. In the first method, we are speaking about the determination of the basic components of any phenomenon or process and about forecasting their development separately and independently from one another so as to obtain a forecast of the entire phenomenon or process as the whole from a combination of individual forecasts. This method is applicable, however, only the extent that the interaction of components with each other can be considered insignificant since they will be recognized by independent values and their mutual effect can be ignored. However, as often happens, the possibility of using the component method precisely in social forecasting remains relatively limited. In most cases, the components are linked systematically and they mutually cause each other. This indicates the need to understand systems ties and their laws along with the component method.

Despite its relativeness, great significance is attached to the component method on the whole, especially in the analytical phase of forcasting. An important aspect of this method is that it helps in disclosing the decisive factors of growth and the initial, determining and structural factors on the investigation of which it is necessary to concentrate attention when developing forecasts. In this case, we are speaking about the disclosure of factors which embody regularities and trends in development, i.e., structural changes; in other words, factors which point to the future and have decisive futurological (futurologicheskiy) significance. Philosophically here we are speaking about the creative employment of the basic principles of dialectical materialism. Forecasting should concentrate its attention on phenomena of the future, on everything new. This assumes addialectical general analysis of internal contradictions and trends in their growth, development and solutions, i.e., it makes for and requires a dialectical system of analysis.

The system method first provides the possibility of obtaining a forecast of complex processes with relatively high reliability and influencing many factors practically infinitely. Social forecasting almost always deals precisely with such difficult and complex objects of forecasting. Especially important in this respect is the investigation of systems relations as applicable to consequences arising in one or another sphere which have tendency to restrain or realize certain laws of development called into being by these relations and having, furthermore, the ability to regulate hindrances which come from other spheres. The actions of social formations, class forces, and class interests and organizations are directed exactly to the creation of the dynamic, selfregulating behavior of a system. If we succeed in disclosing such a method of operation of a system, and especially the laws of development, encompassing and regulating its internal dynamics, then the determining factor for a scientifically based forecast of the future will thus be obtained (W. Krah. Prognose und Rückopplung, a. a. o.; and also: K. Steinbuch; Die formierte Gesellschaft, Stuttgart, 1966, S. 292 ff.).

Precisely in this way is it possible to determine the limits within which a given process can investigate a system which is isolated and relatively independent of external influences. If the quality of the internal control mechanism is known, then it is possible to consider random changes in a condition as possible fluctuations and to process them as parts of a polynomial which are interconnected by a certain sequence. If the characteristic of the regulating mechanism has been obtained, then the information necessary for the forecast can also be considered sufficient in a general way. Thus, all this provides the possibility to develop within certain limits (which themselves are caused and can be accurately determined by the structure and the behavior of the operating system), a relatively reliable scientific forecast of the developments of very complex processes. A significant example of a forecast of this type, as before, remains "Capital" by Karl Marx.

Thus, the systems method provides the opportunity for forecasting the socially complex, and this pertains not only to an "internal," but also to an "external" complex, i.e., to the link of a given process with its surrounding atmosphere. It should be further stressed especially that the systems method provides the possibility to understand the dialectical interaction in the forecasting process since it leads to the disclosure of the immanent systems essence of the object, the knowledge of which it is important in many respects for social forecasting. The systems method leads to the forecasting of vector states which reflect the disposition of possibilities. This is exactly necessary for the perparation of forecast decisions. In order to obtain an accurate representation of the future, especially a representation of high practical value for the search for solutions, rationalization, and planning, anticipations of spheres of possibilities and the distributions of probabilities are necessary.

From this it follows that Marxist-Leninist dialectics in the field of social forecasting have most important methodological significance. If Ernst Topitch believes that dialectics are unnecessary as a forecasting tool. (E. Topitsch. Über Leerformen. "Zur Pragmatik des Sprachgebrauchs in Philosophie and politischer Theorie, in "Probleme der Wissenschaftstheorie," Hrsg, von E. Topitsch, Wien, 1960, S. 254), we can retort to him that not one forecast can be made, without the utilization of dialectical principles whatever the field of forecasting concerned. Dialectical materialism orients forecasting thinking on the investigation of internal factors of growth and stimuli of development, on systems of internal and external contradictions, and on the struggles of antagonistic contradictions, from which the trends of the future and the complex processes of development arise. The dialectical method of thinking helps in the struggle with subjectivism and arbitrariness, with professional narrow-mindedness, with the embellishment of reality, and with the simplification of problems of the future, which are the basic enemies Marxist-Leninist forecasting.

The entire experience of forecasting, especially with the utilization of qualitative means, shows the need for a complex employment of the dialectical method and mathematical methods which mutually supplement and enrich each other.

It is necessary to keep in mind that dialectical materialism continue to develop even further in close connection with the development of other scientific disciplines using new theories and methods. Many of these theories and methods have a clearly expressed dialectical nature (for example, probability theory). One of the disciplines having special significance for the dialectical method is cybernetics. It has become clear that the systems theory allows understanding dialectical regularities more simply and at the same time more profoundly and more accurately and even partially formulating them mathematically.

Finally, Marxist-Leninist dialectics disclose stereotyped arrangements forward against all set dogmas; they orient thinking toward the processes of development, toward the emergence the new, and toward the negation of the obsolete with the preservation of preceding achievements; it teaches an understanding of the problems and the processes of development, proceeding from real contradictions.

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11. SUPPLEMENTARY NOTES

12. SPONSORING MILITARY ACTIVITY
Foreign Technology Division
Wright-Patterson AFB, Ohio

13. ABSTRACT

This article discusses the need for a systems approach to the problem of forecasting social developments. It attempts to break the problem of forecasting down into the component elements and to the theme to Marxist-Leninist philosophy. It draws conclusions concerning mandatory prerequisites for forecasting and sees systems methods as the key to the successful solution to the forcasting problem.

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14. KEY WORDS	LINK A		LINK B		LINK C	
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