

Methods of Economic Regionalization

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G. Węstawowicz

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4

INSTITUTE OF GEOGRAPHY • POLISH ACADEMY OF SCIENCES

G E O G R A P H I A P O L O N I C A 4

Methods of Economic Regionalization

Proceedings of the 2nd General Meeting of the Commission
on Methods of Economic Regionalization of the
International Geographical Union, September 9–13, 1963
in Jablonna, Poland

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INTRODUCTION

The present volume presents the materials of the Second General Meeting of the Commission on Methods of Economic Regionalization IGU. It does not, however, contain the full proceedings, nor is it limited to the reports actually delivered at the Meeting.

The main part of the volume consists of all papers and reports presented by participants in the sessions and left in written form with the Secretariate of the Commission. Three of these reports deal respectively with concepts and theories, methods of research and practical applications. They give a synthetic review of the present state of the problem on the basis of the authors' own knowledge and on materials previously sent to them by individual Commission members. These reports were used to start the discussion on successive days of the Meeting. The other reports were in the form of communications reviewing the state of research in individual countries.

Of the recorded discussion on all the reports, only a part is included and this in abridged form. This has been done in order to give the manuscript of this volume to the printers in time for publication before the International Geographical Congress to be held in London, in July 1964.

To these materials have been added: (a) several communications which were presented to the Secretariate of the Commission before or after the Meeting, either as more detailed elaborations by those who took part in the discussion or as information sent in by those who were unable to attend the Meeting, (b) some communications presented at the First General Meeting of the Commission, but referred to as still timely in the discussion.

STANISŁAW LESZCZYCKI

GENERAL REPORT AND RESOLUTION OF THE MEETING

The Second General Meeting of the Commission on Methods of Economic Regionalization was held at the Conference House of the Polish Academy of Sciences in Jabłonna; the Meeting was organized by the Institute of Geography of the Polish Academy of Sciences.

The Meeting was opened by the Chairman of the Commission, Professor S. Leszczycki. The participants were greeted by Professor J. Barbag on behalf of the Polish Academy of Sciences and by Professor H. Boesch in the name of the International Geographical Union.

On the first day of the Meeting, Professor S. Leszczycki presented a report on "Tasks of Economic Regionalization". The report comprised a systematic review of the problems for discussion on the basis of the previously distributed text of the report "Review of the Concepts and Theories of Economic Regionalization" prepared jointly by Professors K. Dziewoński, S. Leszczycki, E. Otremba and Dr. A. Wróbel.

Two other reports: one by Professor C. D. Harris on "Methods of Research" and one by Professor E. Juillard on "Practical Applications" presented a synthetic review and appraisal of works on these two aspects of economic regionalization. These reports were based on the answers to questionnaires previously circulated among the members and collaborators of the Commission.

The above reports were supplemented by a number of communications appraising the practical applications of economic regionalization as well as of the existing state and methods of research in individual countries. Such communications were presented by Professor P. M. Alampiev (USSR), Professor A. Bassols-Batalla (Mexico), Dr. G. Bora (Hungary), Prof. S. P. Chatterjee (India), Professor N. L. Nicholson and Dr. R. T. Gajda (Canada), Professors K. Ivanicka and M. Strida (Czechoslovakia), Professor G. Jacob (German Democratic Republic), and Professor R. Klöpffer (German Federal Republic).

The following persons participated in the joint discussion on the reports: Prof. J. Barbag, Prof. S. Berezowski, Prof. B. J. L. Berry, Prof. M. Blažek, Prof. H. Boesch, Prof. H. Bobek, Prof. M. Dobrowolska, Prof. K. Dziewoński, Dr. R. T. Gajda, Prof. C. D. Harris, Prof. K. Ivanicka, Prof. E. Juillard, Prof. M. Kiełczewska-Zaleska, Dr. L. Kosiński, Prof. S. Leszczycki, Prof. C. Marinov, Prof. M. Phlipponneau, Prof. L. Scheidl, Dr. S. Schneider, Dr. M. Strida, Prof. O. Tulippe, Prof. E. Ullman, Prof.

W. William-Olsson, Dr. A. Wróbel. The discussion was summarized by Professor K. Dziewoński.

On September 9, the participants of the Meeting visited the Institute of Geography of the Polish Academy of Sciences and the Geographical Institute of the University of Warsaw. After presentation of the works of both Institutes, Professor K. Dziewoński read a report on the regional structure of Poland.

On September 10, the participants of the Meeting visited the City Planning Office of Warsaw where they became acquainted with the current problems of city development planning; a report on this subject was presented by M. Jędruszkowski. The visit was followed by a tour of Warsaw guided by the city planners K. Marczewski, and J. Wilski.

During the Meeting there were two full-day scientific excursions (Sept. 11 and 13). The first, guided by Professor K. Dziewoński and Dr. A. Wróbel concerned problems of the suburban zone of Warsaw as well as of the rapidly expanding regional centre of Płock. The subject of the second excursion, guided by Professor S. Leszczycki and Dr. L. Kosiński, was the problems of the two competing regional centres of Radom and Kielce as well as of the Old Polish Industrial Region.

The results of the Meeting were summarized in the following resolution:

The Commission on Methods of Economic Regionalization of the International Geographical Union held its Second General Meeting on September 9—14, 1963, at the Palace of Jabłonna in Poland, which was attended by ordinary and corresponding members together with invited guests, numbering 42 in all, representing the following countries: Austria, Belgium, Bulgaria, Canada, Czechoslovakia, France, German Democratic Republic, German Federal Republic, Great Britain, Hungary, India, Mexico, the Netherlands, Poland, Sweden, Switzerland, the Union of Soviet Socialist Republics, the United States of America and Yugoslavia.

After reports on concepts and theories, methods of research and practical application of economic regionalization presented by members of the Commission and the ensuing discussion, concerned mainly with problems of proper terminology, importance of economic regionalization and relation between regional structure and administrative divisions, it was resolved:

1. To consign all the materials of the Meeting to the Institute of Geography of the Polish Academy of Sciences with a request that the Institute undertake their editing and publication in time for the London Congress of the International Geographical Union in 1964.

2. To send the report on the present Meeting to the International Geographical Union for publication in the IGU Newsletter and to ask all the participants for publication of similar reports in the geographical periodicals of their respective countries.

3. To continue the work of the Commission on the basic concepts of economic regionalization as well as on the terminology used in this field in the main languages of the world and in this work to consider as basic the following concepts of economic region: as defined for practical, mainly planning and or administrative needs, as an economic phenomenon of reality to be studied by geographical and other sciences and as analytical tool of geographical research.

4. To collaborate in establishing an international bibliography of books and papers on economic regionalization.

5. To initiate within the framework of the Commission some additional studies on the historical development of economic regionalization — its concepts, methods and applications as a part of the development of geographical sciences and to compare main regional theories on the basis of their translation and formulation in the basic, comparable terms.

6. To develop further studies concerned (a) with methods of economic regionalization in particular with quantitative, statistical and cartographical ones; (b) with analysis of the present regional economic structure together with study of the integrated economic regions by defining variances in the level of development and intensity of their economy, their specific character, internal organization and external functions and relations; (c) with interrelations between scientific research in the field of economic regionalization and the practical needs of human community; (d) with use of studies of economic regionalization for the establishment or improvement of planning and administrative territorial divisions; (e) with comparative studies of the administrative structure of the countries of the world.

7. To undertake studies of methods for establishment of statistical areal units necessary for regional analysis.

8. To start typological studies of economic regions on comparative basis and to classify possibilities of establishing their taxonomy and hierarchy.

9. To study the possibility of the preparation of the map of world economic regions.

10. In view of the importance of economic regions in practical work, to call to the attention of the Executive Committee and the national committees of the International Geographical Union the importance of training of geographers for applied work and to the desirability of the creation of a commission to devote itself to this problem.

11. To ask the Chairman of the Commission for a summary report on the work so far done, to be discussed and approved at the Third General Meeting to be held during the London Congress and circulated at the General Assembly of the International Geographical Union in London.

12. To request the continuation of the Commission for another four year period.

Finally, all the participants of the Meeting acknowledge with gratitude the hospitality accorded to them by the authorities of the Polish Academy of Sciences and the financial subsidy granted by the UNESCO through the IGU to cover partly the costs of their travel to Poland for the Meeting.

LIST OF PARTICIPANTS

1. Prof. Petr M. ALAMPIEV, Moscow, USSR
2. Prof. Józef BARBAG, Warsaw, Poland
3. Prof. Angel BASSOLS BATALLA, Mexico City, Mexico
4. Prof. Stanisław BEREZOWSKI, Warsaw, Poland
5. Prof. Brian J. L. BERRY, Chicago, USA
6. Prof. Miroslav BLAŽEK, Prague, Czechoslovakia
7. Prof. Hans BOBEK, Vienna, Austria
8. Prof. Hans H. BOESCH, Zürich, Switzerland
9. Doc. Gyula BORA, Budapest, Hungary
10. Prof. Shiba Prasad CHATTERJEE, Calcutta, India
11. Doc. Michał CHILCZUK, Warsaw, Poland
12. Dr. Zbyszko CHOJNICKI, Poznań, Poland
13. Prof. Maria DOBROWOLSKA, Cracow, Poland
14. Prof. Kazimierz DZIEWOŃSKI, Warsaw, Poland
15. Dr. Roman T. GAJDA, Ottawa, Canada
16. Doc. Stefan GOLACHOWSKI, Wrocław, Poland
17. Dr. Ian HAMILTON, London, England
18. Prof. Chauncy D. HARRIS, Chicago, USA
19. Doc. Koloman IVANIČKA, Bratislava, Czechoslovakia
20. Prof. Günter JACOB, Dresden, German Democratic Republic
21. Prof. Etienne JUILLARD, Strasbourg, France
22. Prof. Hendrik J. KEUNING, Groningen, the Netherlands
23. Prof. Maria KIEŁCZEWSKA-ZALESKA, Warsaw, Poland
24. Prof. Rudolf KLÖPPER, Bad Godesberg, German Federal Republic
25. Doc. Leszek KOSIŃSKI, Warsaw, Poland
26. Doc. Antoni KUKLIŃSKI, Warsaw, Poland
27. Prof. G. D. KULAGIN, Moscow, USSR
28. Prof. Stanisław LESZCZYCKI, Warsaw, Poland
29. Prof. Christo MARINOV, Svichtov, Bulgaria
30. Prof. Norman L. NICHOLSON, Ottawa, Canada
31. Prof. Michel PHILIPPONNEAU, Rennes, France
32. Dr. Veljko ROGIĆ, Zagreb, Yugoslavia
33. Dr. Bogumił RYCHŁOWSKI, Warsaw, Poland
34. Prof. Leopold SCHEIDL, Vienna, Austria
35. Dr. Sigfried SCHNEIDER, Bad Godesberg, German Federal Republic
36. Doc. Ludwik STRASZEWICZ, Łódź, Poland
37. Dr. Miroslav ŠTRIDA, Prague, Czechoslovakia
38. Prof. Omer TULIPPE, Liège, Belgium
39. Prof. Edward L. ULLMAN, Seattle, USA
40. Prof. William WILLIAM-OLSSON, Stockholm, Sweden
41. Dr. Andrzej WRÓBEL, Warsaw, Poland
42. Prof. Antoni WRZOSEK, Cracow, Poland

REVIEW OF CONCEPTS AND THEORIES OF ECONOMIC REGIONALIZATION

K. DZIEWOŃSKI, S. LESZCZYCKI, E. OTREMBA, A. WRÓBEL

The division of an area into regions is an ancient and traditional part of geographical studies. Development of ideas in this field, parallel to the progress in our knowledge of the phenomena occurring on the earth's surface and to the development of social needs, has been characterised by constant evolution and differentiation of problems involved in the definition of regions, particularly from the point of view of social and economic life. Problems of economic regionalization, that will be discussed in the following report, belong exactly to the latter category. The term itself will be considered as synonymous with "defining economic regions".

The origins of the concept of economic region may be found in the history of a region in the broadest sense of the word, being an intrinsic and basic category of geographical language. The introduction and wider use of this term by the founders of modern geography in the 19th century (P. Buache, J. Ch. Gatterer, H. G. Hommeyer, A. Zeune, J. R. and G. Fosters) and in the first half of the 18th century (A. Humboldt and K. Ritter) marked an enormous step forward in the methodical evolution of geographic research, expressed by replacing the political and administrative areal units, defined "a priori", by other units established on the basis of common natural features, and defined empirically by a careful study of reality¹. Later on, the search for a more adequate spatial framework of geographical studies led to the development of the concept of landscape. This concept has been also applied to the geographical studies of human phenomena; in this context it appeared in various settings and under different names (pupils of F. Ratzel used the term "anthropological region"; English geographers — human region; French geographers as well as A. Hettner, S. Passarge — geographical region; German geographers — cultural landscape). The significant feature of this concept was the tendency to define spatial units that were uniform from the point of view of relations between geographical environment and phenomena of social and economic life. However, it became more and more

¹ See the detailed analysis of the history and evolution of the concept by R. Hartshorne [15].

evident that it was impossible to give a satisfactory definition of the concept within its original terms of reference. But it was only recently, when social and economic life has been recognised as a separate object of geographical research and when the interest of other social sciences in the spatial aspects of social and economic phenomena has developed, that the concept of an economic region was fully defined. Nevertheless the contents and meaning of the term vary and the units with similar contents are given different names.

The term "economic regionalization" has also various meanings. Two of them deserve particular attention as the most important ones. i.e. (1) defining of economic regions within and/or for purposes and needs of geographical research, (2) defining of areal units for practical needs of planning and economic administration.

The international recognition of the latter term is fairly recent. It was first used by Russian geographers already in the 19th century² and since the Revolution has been very popular there. Although its use is not yet universal, it was used in this sense in the name and terms of reference of the Commission and in this report both its meanings will be applied and discussed. An effort will be made to present their importance and mutual relations as adopted in the geographical world.

The review of various aspects of "economic regionalization" and connected concepts of "economic regions" would not be complete without discussing the present position of the wider concept of a "region" in geography. The terminological chaos in the field of economic regionalization is the result of different approaches to the very concept of a region. Recent years have witnessed many efforts to bring some order in the conceptual system connected with problems of region and regional method (e.g. James [19], Whittlesey [35], Saushkin [29], Alampiev [1], Dziewonski [9, 10], Juillard [20], and others). However, none of these attempts can be recognised as final and fully satisfactory. This report does not aim to be one more effort to construct a complete, logical theory of the regional concept and regional method but it is intended to be a systematic comparative review of the present opinions, so far as they are concerned with the definition of economic regions and the methods of their delimitation.

I. ECONOMIC REGIONALIZATION AS A MEANS OF REGIONAL DIVISION OF A COUNTRY FOR PRACTICAL NEEDS OF PLANNING

In analysing the historical development and the present meaning of the concept of economic region, the influence of the needs of social and economic life should not be neglected. The needs determine the concrete conditions of the institutional spatial framework of social and economic activities.

The recognition and understanding of these needs at the end of the 19th and the beginning of the 20th centuries was the basis of the various "regional movements" which spread through all over Europe and the USA under the general name of "regionalism". One of their main objectives was the reform of the then existing political and

² See: e.g. J. Saushkin [29].

administrative divisions, in order to better adjust these divisions to the actual needs of social and economic life³. This gave birth to a number of more or less grounded projects of new administrative divisions, such as — to mention only some of the first and best known — of P. Vidal de la Blache [32] and Ch. Brun [4] for France or of C. B. Fawcett [12] and G. D. H. Cole [6] for England.

A similar problem, although in an even more acute form, arose in Russia after the October Revolution, when the demands of socialist planned economy created the necessity of setting up a new network of basic administrative units (which *ex definitione* were to be at the same time units of planning and of economic management) as well as of an additional network of larger units of planning (grouping together several administrative areas of the highest rank — the Gosplan regions). In this way the establishment of the optimal regional administrative and political division of the federal state became, right from the beginning of the planned economy, one of the leading tasks facing the state authorities.

The theoretical motivation of the division of the country as it was proposed (for needs of planning and administration) was historically connected with the specific — more or less clearly formulated — concept of region. In this case the region was considered — to use the expression of one of earlier students of regionalism — as a “natural” areal unit, natural in the sense that it was to be a real existing unit, arising spontaneously from the very structure of society in contrast to the “artificial” administrative units which had been imposed by the distant past and were often ill adjusted to modern needs” [7]. The review of the concepts of region so defined in their modern formulations is given in the following part of this report.

The review of aims and criteria used to define regional units for planning needs or for economic administration will be discussed in detail in another report dealing with the practical application of economic regionalization. Nevertheless, in this report certain related terminological questions should be raised more extensively.

In the USSR and in other European socialist countries the term “economic regionalization” is often used to describe the process and procedure of defining regions for purposes of planning and economic administration. For instance, P. Alampiev describes economic regionalization as synonymous with the division of the country for planning purposes into certain parts which are to fulfil specific tasks in the national economy as well as the organization of economic administrative bodies in these regions [1, p. 5].

This term is understood similarly by M. Strida [31] and M. Blažek [11, p. 41] in Czechoslovakia (“... we conceive economic regionalization as the selecting of such a system of regions which corresponds to practical needs”), by G. Jacob [11] and E. Neef [25] for the German Democratic Republic (where the generally used term of “ökonomische Rayonierung” is a new, recently introduced one and it is neither traditional nor derived from some other already used geographical terms), by C. Herbst [11] for Rumania and by others. Moreover, the term “economic regionalization” is used in the same meaning in official publications of many socialist countries and in some

³ See: R. E. Dickinson [7], M. Jensen [28].

countries the name "economic region" is officially used by governmental bodies to determine units of economic planning and administration ("basic economic region" and "economic administrative region" in the USSR, "mezoraion economic" and "microraion economic" in Rumania).

However it is necessary to point out that the majority of geographers using the terms "economic region" and "economic regionalization" in that meaning assume that in reality there are concrete regions (i.e. areal units formed under the influence of economic laws) to which the planning regions should be adjusted. As a result the same authors use the concept of economic region in both meanings which leads to some terminological confusion. To avoid this some authors substitute for one term, "economic region", two separate though similar ones: "state economic regionalization" or "state regionalization", on the one hand, and "economico-geographical regionalization" on the other (e.g. Anuchin [3]). Others reserve the term "economic region" for planning regions only, defining regions existing within economic reality by the term "geographical economic region" (e.g. M. Strida [31]). Finally, some geographers use the terms "economic region" and "economic regionalization" rather in the second meaning, adopting other names for regions defined for practical purposes (for instance, "planning regions" and "administrative-economic regions").

In the French literature the term "région d'aménagement" is generally used. It is defined by E. Juillard [21] as "un cadre territorial dans lequel s'exercent les activités diverses et coordonnées d'un groupe humain et qui possède une relative autonomie". The term "economic regionalization" is only rarely applied. However, Juillard uses it to describe the activities aimed at a division of the country into these "régions d'aménagement" undertaken by the governmental bodies for purposes of regional planning.

In the English speaking countries the common term used to describe areal units for which regional plans are being prepared is "planning region"⁴.

II. REGION AS AN ECONOMIC PHENOMENON IN REALITY

The concept of economic region as an economic phenomenon of the reality and, in consequence, an object of particular interest for economic geography is not recognised by all geographers. Those who have adopted such a meaning of this concept understand it as an object of studies and are of the opinion that among various regions studied by economic geographers some are of basic and specific importance for the development of this branch of geographical sciences.

At the basis of all these meanings and opinions lies the conviction that economic regions are a kind of spatial units resulting from the territorial division of labour. This division creates certain pattern of more or less distinct areas which are functionally related between each other. More serious differences of opinion concern the significance of various aspect of this territorial social division of labour.

⁴ See: J. R. P. Friedman [13].

The first historical example of the correlation of the regional concept with territorial social division of labour may be found in the study of V. I. Lenin [24] concerned with the development of capitalism in Russia (1898). In this study dealing with the country that was at that time mostly agricultural and structurally underdeveloped, its economic regions were defined as areas which, as a result of the development of territorial social division of labour (in conditions of growing capitalist relations of production), were going through specific transformation of economic structure and specializing in commercial production of concrete goods.

In the actual practice of Soviet economists, in the first post-revolutionary years, the main object of interest in theoretical conceptions has been transferred from "uniform" aspect of territorial social division of labour to the aspects of intra-regional functional links, most important for a correct spatial organisation of economic planning and management. In the so-called Gosplan theory of economic regionalization, particular attention was given to the formation of territorial complexes of productive forces, which were to become certain distinct elements within the whole national economy⁵. The theoretical problems of large-scale regions (basic economic regions) were then particularly well attended.

However, the Soviet geographers who have developed their ideas on the basis of such general understanding of the nature of economic regions, have given many different specific definitions of economic region concentrating on one or other aspect of the problem. Particular differences can be noticed in emphasizing the mutual role of elements of "specialization in production" and of complexity of economy in defining economic regions.

In Western Europe and in the USA analogical concepts of economic region as an areal unit arising in the organization of economic cooperation have been developed under the influence of practical needs of reforming the institutional spatial framework of social life, expressed for instance by the regionalist movement, as well as under the influence of new theoretical conceptions. Among these conceptions a particularly important, even decisive rôle, was played by W. Christaller's [5] theory of central places, which was developed and generalised by A. Loesch [23] to embrace all economic activities in the form of "economic landscapes" (economic regions) corresponding to the spatial network of markets.

This theory formed the basis of the widely used concept of nodal regions (in French the term commonly used is "régions polarisées") which develop around the network of regional centres, focussing all economic links and relations.

Many authors identify these nodal regions with economic ones, or — without using this last term — recognize their special rôle. Among American authors who reject the concept of a region as an object, the opinion is very often expressed that this type of region is something more than mere descriptive spatial generalization. For instance, R. Hartshorne writes that "The functional region is, therefore, not a descriptive generalization of character but rather the expression of a theory of process — relationship... it expresses a theory of spatial

⁵ See: e.g. J. Alexandrov [2], G. M. Krzyzhanovski [36].

organization through interconnections across area... In the respects in which it is a functional unit, but only in those respects, it represents an areal feature in reality" [16, p. 136—137]. Ullman goes even farther when he declares that "... in a sense nodal regions are the real regions of the earth" and places the maps of such regions in contrast to "more stereotype subjective maps of homogeneous regions" [11, p. 94]. It should be remembered that the latter author, who elsewhere uses the term of region to mean a general analytical tool (the regional method) and discusses different types and kinds of regions, has in mind in the first sentence the nodal regions including the whole set of links and relations focussed around the regional centres.

In this generalised sense the concept of "région polarisée" is used in the French literature. Some authors, however, limit the significance of such regions to particular conditions without full identification with the concept of an economic region. For instance, Juillard who sees in the "régions polarisées" the basis for the definition of "régions d'aménagement" and ascribes to them *implicite* specific importance as being the analytical regions of economic geography, qualifies his statement by an additional phrase, stating that this particular importance of nodal regions is limited to economically well-developed countries [21].

On the other hand, O. Tulippe who affirms "l'existence indiscutable d'une hierarchie des régions économiques à partir des régions polarisées" does not identify nodal regions with economic ones. Speaking of five economic regions, defined by him as being of the first rank in Belgium, he describes them in the following words: "Ces régions ont été indentifiées sur la base de l'analyse des structures et par la réunion dans un effort de synthèse régionale, d'unité possédant une certaine uniformité dans les aptitudes naturelles et les activités productives et conduisant ainsi à cinq grands ensembles hétérogènes, mais cohérents. Ces ensembles ne présentent donc pas d'homogénéité-géographique, puisqu'ils comprennent fondamentalement des régions industrielles et des régions rurales. Mais il en résultera, selon le mot des économistes, une homogénéité de développement (en fonction de l'existence en leur sein de faits de croissance) à savoir: complémentarité des pôles techniques principaux, infrastructure routière, ferroviaire et parfois fluviale pour les flues unissant les pôles de croissance dérivés" [11, p. 30—31].

Many authors, although recognising the particular importance of nodal regions, point out that also uniform differentiation of the area should be taken into account in defining economic regions. Moreover, various authors represent various approaches in defining the mutual relation of these two aspects of economic regionalization.

Thus, e.g. Ilešič [11, p. 106—107] expresses the following view as to the nature of economic region: "Il s'agit surtout de la circulation et de l'organisation de la vie économique, celle-ci embrassant non seulement la production, mais aussi la distribution et consommation des produits. Bien qu'on est d'accord avec l'opinion de K. Dziewoński, qu'il ne faut pas ôter aux éléments des zones homogènes toute leur valeur fonctionnelle, il n'est pas moins vrai que cette valeur ne consiste qu'en production et ne se fait valoir que par les courants compliqués de circulation et organisation économiques. Pour cette raison, nous préférons dans nos recherches sur les méthodes de régionalisation économique de

tenir séparées l'une de l'autre la régionalisation "homogène" ("zonal regions") et celle de "gravitation" ("nodal regions"), mais enrichir la dernière en y introduisant, outre les éléments de gravitation aussi des éléments dominants de la production "homogène". De telle façon le région devient vraiment "fonctionnelle". Il faut donc que la notion de fonction économique soit comprise dans le sens le plus complexe du mot. La gravitation proprement dite n'y est qu'un élément, bien que le plus important, de cette fonction, s'avancant d'autant plus au premier plan que la vie économique de la région en question, est plus avancée et les courants de circulation économique plus vives".

A. Wróbel [11, p. 78] describes economic regionalization as "revealing of the existing regional structure which covers both the study of regional functional interconnections as well as the study of regional uniformities — in terms of criteria significant for economic development". With such an approach the effort to establish in the studies of economic regionalization the unique network of economic regions should be abandoned and replaced by defining spatial patterns of various, mutually interconnected basic elements of the regional structure.

K. Dziewoński [9, 10], who also adopts the concept of regional structure, considers that the defining of economic regions on the basis of significance of specific elements of regional structure is possible and in many cases necessary. In his opinion, on different levels of regional hierarchy and in different areas, the varying elements of regional structure acquire special significance, serving as criteria for the delimitation of the region.

Similarly E. Otręmba [26] writes that in the concept of an economic region (Wirtschaftsraum) both categories discussed have to be applied jointly⁶.

Like Dziewoński he also considers that in conditions of a given territory one or other category may be of decisive significance in defining of economic regions⁷.

It should be noticed here that recently in the theoretical approach to the problem of economic regions more and more emphasis is being given to the more general problem of the spatial structural interdependence of economy. When many authors in presenting this system keep to the concept of economic region, others — especially American theorists — often present it exclusively in terms of the system of central places and economic flows (interpreting the observed regularities in terms of various hypotheses and concepts like: "gravity and

⁶ "Struktur und Funktion in Wirtschaftsraum sind nicht etwas grundsätzlich Verschiedenes und in der Raumerkenntnis nicht zu Vereinbarendes, sondern sie bedingen einander und stehen in einem inneren logischen Zusammenhang und zu-dem in einer logischen Folge im Wirtschaftsprozess, und dem ist auch von seiten der Geographie zu entsprechen".

⁷ "Ohne dass damit in der Wirtschaft gültigen Rangordnung von Form und Vorgang widersprochen wird, äussern sich Struktur und Funktion in ihrer Raumwirksamkeit in wechselnden Dimensionen und mit Hilfe wechselnder Gesichtspunkte, die vom Raum selbst auferlegt werden. In der wechselnden Anwendung einheitlichkeit oder eine Ikonosequenz zu erblicken, sondern eine raumgerichtete Erkenntnis der Dominant mit dem Ziel der Verknüpfung der verschiedenen Ausdrucksformen der Wirtschaft im Raum".

potential models", "intervening opportunities", "economies of scale", "pôles de croissance", "distance inputs", etc.) without reference to the regional concept⁸; similarly in geographical studies many authors abandoned the concept of region in favour of such concepts as e.g. "areal functional organization".

III. THE REGION AS AN ANALYTICAL TOOL OF REGIONAL METHOD

Independently from the development of the concept of economic region as an object of geographical studies, we are witnessing a tendency in geographical sciences to define the concept of "region" as one of the most important general tools of geographical analysis. As a result in the definition of the concept we have two very outstanding trends which at the first sight seem to be opposed if not mutually exclusive.

The first one (already described in detail) speaks about the existence of two basic types of regions as objects: the economic region and the natural region. It is represented first of all by the Soviet geographers and adopted by the majority of geographers in other socialist countries. Some geographers from the Western countries reserve the term "region" for areal units whose contents is empirically defined in such a way that in practice they correspond to the economic regions as conceived by the first group⁹.

The second stand that can be traced back to A. H e t t n e r [17]. was most clearly defined by a Commission of American Geographers working under the chairmanship of D. Whittlesey, which correlated the concept of a region with problems of the "regional method" and "regional approach". According to this scientific body region should be defined "as a device for selecting and studying areal groupings of the complex phenomena of the earth. Any segment or portion of the earth surface is a region if it is homogeneous in terms of such areal grouping. Its homogeneity is determined by criteria formulated for the purpose of sorting from the whole range of earth phenomena the items required to express or to illuminate a particular grouping, areally cohesive. So defined, a region is not an object, neither self-determined nor nature-given. It is an intellectual concept, an entity for the purposes of thought, created by the selection of certain features that are relevant to an areal interest or problem and by the disregard of all features that are considered to be irrelevant [35, p. 30].

Obviously these two trends do not include all the opinions existing among geographers so far as the concept of a region is concerned. Many geographers representing views very close to the position of Whittlesey, very often reserve the term for areas of very large size and certain considerable complexity and comprehensiveness. But an analysis of the most sharply defined opinions is useful because it clearly shows that certain important aspects and problems of regionalization are overstressed and other aspects are either by-passed or omitted by the representatives of each side. A careful analysis of geographical literature

⁸ For most explicit formulation of this view see e.g. R. Vining. [33, 34].

⁹ See e.g. E. Juillard [20].

shows, however, that in practice many adherents to one or other school of thought also use the term "region" almost in the opposite meaning.

For instance, the Soviet geographers use the term "region" not only in the comprehensive analysis of the whole spatial economy (and by analogy of the whole geographical environment) but also in the analysis of many specific phenomena; so within the framework of the economic geography they define agricultural, industrial, transport and other regions. To indicate the different approach to the term they often distinguish "integral economic regions" from "partial economic regions" (analogical pair of terms is also used in physical geography). The term in this last meaning is, however, usually limited by the Soviet authors to larger and more complex group of elements relating to the problems of specific branches of economy. Many Marxist geographers, recognising the concept of an economic region as an object, nevertheless use the term in a much wider sense. As a result they write about "many kinds and types of regions"¹⁰.

On the other hand — as already stated — many geographers who fully accept the definition of a region as an analytical tool, do use also the concept of an economic region (or a human region) as a phenomenon of the social and economic reality.

It seems necessary to recognise both aspects of the concept in future discussions. Independent of the terms used and the difference of opinions concerning the nature and theory of economic regions along with the problems of economic regions — objects of geographical research, there is a wide realm of problems of regional method dealing with ways and means of geographical analysis.

IV. ADDITIONAL BASIC CONCEPTS

Besides the basic problems of various meanings and concepts of the term "economic region" there are additional problems of several derivative fundamental concepts (and terms) whose contents should be discussed in this report. To these belong uniformity and nodality, regional boundaries and regional hierarchy.

Uniformity and nodality. In Whittlesey's definition of the concept of region as given earlier, the term "homogeneous" has been used by the author in a broad generalised sense, i.e. covering both the uniformity taken from the point of view of the characteristic marks, and the unity of internal organization. On this basis Whittlesey has differentiated, within one class of "homogeneous" areal units, uniform and nodal regions. However, this generalised concept of homogeneity has not been assimilated and in geographical literature the distinction between uniform and nodal regions as opposite concepts is still upheld. In the human (economic) geography the terms "structural" and "functional" regions may be found parallel in meaning and even synonymous with the former ones. This happens quite often in works published in English, French and German.

Their use varies obviously in connection with the extent of the applied concept of a region. When a wider meaning is assumed, an infinite

¹⁰ See: M. Blažek [11], S. Leszczycki [11], J. Saushkin [29].

number of different uniform and nodal regions may be found or defined on the earth surface. With the narrowed meaning the terms: uniform (structural) region and nodal (functional) region are correlated only with two regional networks, each defining the whole complex of economic phenomena from different points of view.

With the limitation of the whole concept of a region (of an economic region) to a given single system of regional division only, the terms "uniform" and "nodal" regions lose all their meaning, but the concepts of uniformity and nodality or functionality (in Russian also of complexity — *vzaimosviazanost*) are taken as a basis for defining such regions (economic regions).

Regional boundaries. In cases when the term "region" is used to describe certain areas for geographical research it is universally agreed that the regional boundaries or that the determined boundary lines are, in some way, conventional (with the exception of instances of political frontiers which form at the same time lines of economic division). This non-linear character of regional boundaries becomes more and more distinct when the whole body of elements used for criteria of regionalization grows in complexity.

For instance, Whittlesey who in his report paid special attention to the problem of the regional boundaries, writes among others: "Where regions are defined by discontinuities, or occupy an area of discontinuous distribution, regional peripheries are likely to be acutely troublesome because they are transitional, or zonal, and at the same time critical". In a similar way the Soviet geographer Anuchin [3] states that "so far as the economico-geographical boundaries are concerned they are not only less stabilized but also more conventional than natural boundaries. Quite often among them some specific intermediary zones may be found".

On the other hand, however, in all cases when numerical data are used for defining the regions, these regions usually form specific groups of statistical units representing areas of basic aggregation of the data taken into account. Moreover, those units are usually some units of administrative division. In such a case the boundaries of the defined regions have to be linear and are traced along the lines of administrative division. The conventional element contained in this method of delimitation increases with the basic units growing in size (or with the diminishment of the number of those units) in relation to the size of the regions being defined.

This problem involves two additional ones. The first is common to all areal research of statistical character. This is the problem of the selection of proper units for grouping of data which so far did not receive greater attention. Recently, the first systematic effort was undertaken by several American authors in a book published under the title "Statistical Geography" [8]. To this is added the second problem of rather topical character, directly connected with economic regionalization. This is the problem of defining significant areas for aggregation of data concerning the structure of their economy. In the report on the practical application of economic regionalization, problems of defining complex statistical regions such as, for instance, "metropolitan areas" shall be discussed. Here, however, attention should be drawn to the fact that in such cases practically always the assumed principle of

aggregation is concerned with the similarity of structural indices. However the question may be raised whether the significant units for aggregation of data involved in the analysis of uniformity of economy in the given area should not include areas internally not uniform but possessing certain unity from the point of view of functional relations only. This problem was not studied so far in detail.

Whereas the boundaries of regions defined for analytical purposes are not easy to delimit and their presentation in linear form involves some conventional elements, in the case of regions defined for some activity (e.g. for regional planning) the necessity for boundary lines is involved in the definition of the regions themselves. Taking into account the fact that usually in defining such regions some very complex groups of elements and data have to be used, it should be noticed that for their delimitation no set of pre-established universal criteria may be introduced.

Hierarchy of regions. The concept of the regional hierarchy is accepted generally both in defining regions for analytical or practical i.e. actional purposes and in studying regions as objects. However there exist some terminological differences in the use of this concept. Along with the common use of the term "regions of various rank" in many cases — particularly when the term "region" is given concrete empirical content — the term "region" is often restricted within certain taxonomical typology to spatial units of specific size. Then some other names are used to define larger units grouping regions together (such as macro-regions, provinces) or for smaller units marking subdivision of a region (such as microregions, subregions).

The activity of establishing a specific hierarchy of regions (or hierarchical system of regions) does not involve serious conceptual difficulties in itself as far as the proposed regionalization is to be used for practical purposes. But in economico-geographical analysis the problem of regional hierarchy — when the concept of regions is taken as an analytical tool — is not very clear and belongs to those not studied enough. In particular it is not clear whether the rule usually adopted that a region of a higher rank contains a specific integral number of regions of lower rank (Whittlesey's rule of "aggregation and subdivision") does coincide with another rule stating that criteria of regional division are chosen according to the character of the problem under discussion. In other words, it is not certain whether the hierarchy of criteria corresponding to the hierarchy of problems forming together parts of larger problems have to result in a division corresponding to the rule of "aggregation-subdivision".

SUMMARY

In conclusion the main points presented in this review of concepts and more developed theoretical approaches to the problem of economic regionalization adapted at present, should be stated for discussion, namely:

1) among the various concepts of economic region the following should be considered as basic: economic region as defined for practical, mainly planning needs, economic region as an economic phenomenon of

reality to be studied by geographical and other sciences and region (among others also economic) as an analytical tool of geographical research;

2) without being in favour of one or another theory the essential necessity of the above mentioned concepts should not be contested but efforts should be made to further clarify their mutual relations and to avoid many misunderstandings by taking attention to use them in a correct manner. With this aim in view the possibility of adopting different terms corresponding to these concepts should be discussed. At the same time it has become obvious that it is necessary to develop an internationally agreed system of corresponding and unequivocal terms in all the basic languages;

3) in further work of the Commission on Methods of Economic Regionalization, a systematic study of terminology related to economic regionalization to be used in the basic international languages should be continued in order to establish a certain number of basic, clearly defined terms;

4) additional studies of the main regional theories should be started in which these theories would be compared by means of their translating and formulating according to the basic terms established and generally adopted.

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THE TASKS OF ECONOMIC REGIONALIZATION

STANISŁAW LESZCZYCKI

1. INTRODUCTION

The paper jointly prepared by Professor D z i e w o ń s k i, Dr. W r ó b e l and myself and accepted by Professor O t r e m b a, has been supplied beforehand to the members of this Meeting; thus I presume that they have acquainted themselves with its contents. That paper represents an attempt to coordinate the opinions of several authors on the theoretical problems of economic regionalization. However I do not consider it necessary to read it in extenso. On the other hand, I believe that instead of presenting a summary, it may be advisable to commence our discussion by giving prominence to problems I consider of particular importance for further theoretical investigations of economic regionalization. Obviously, the choice of the problems I intend to put forth is subjective, and indeed they fail to embrace the full scope of economic regionalization. I shall, therefore, welcome any widening of this scope that anyone may suggest. While I shall try to limit our discussion to theoretical topics, I am convinced that any definite illustration of the problems of economic regionalization presented in the context of a region or country might be helpful, since in this manner theoretical arguments are brought face to face with reality — a fact that in many instances may lead to very essential modifications in our theoretical reasoning.

2. REPORT ON THE WORK OF THE COMMISSION

I attach much weight to the discussion we are to engage in at our present Meeting, since on the basis of the papers read and the discussion on them our report is to be prepared for submission to the 20th International Geographical Congress in London. I am not optimistic enough to expect our Meeting to succeed in solving a number of difficult problems of economic regionalization, nor do I presume that we shall manage to agree on the various problems to be discussed. However, I consider it possible that we shall succeed in specifying the most fundamental problems of economic regionalization and in formulating our suggestions

as to further research in this field. In my opinion the Commission's report should contain a list of the fundamental problems connected with economic regionalization; it should show the participation of geographers in research work on economic regionalization and it should define the directions in which further studies of economic regionalization are to be made. Our preliminary report will be presented during the London Congress in 1964. Subsequently, for fully 4 years this report will be open to detailed discussion, and our final report which is to summarize the results of the work of our Commission, will be given at the next Congress, in 1968.

3. HISTORY OF ECONOMIC REGIONALIZATION

The history of the problems of regionalization in the geographical sciences is long and goes back to the second half of the 18th century. The first researches on regionalization were undertaken by the French geologist J. E. Guettard (1764) and then continued by Omalius d'Holloy (1808). The division of a country into river basins carried out by Philippe Buache (1752) is well known as are the studies of C. Coquebert de Montbret (1824) dealing with natural regions. The history of geographical regionalization is closely linked with the evolution of geography as a science, since problems of regionalization constitute a fundamental part of geographical research. I need not repeat that the evolution of geographical regionalization began with the differentiation of natural landscapes, physico-geographical regions. In the course of time man and his economic activities were introduced into the delimited natural regions. Subsequently, attempts at syntheses were made by observing the results of man's activities within the landscape. New concepts arose: of geographical, anthropogeographical (antropogenous) and landscape regions. Unfortunately, the propagators of the landscape concept failed to comprehend that dealing with effects without previous knowledge of causes is inadequate, and due to this error their achievements were unsatisfactory. The last stage of evolution divided geographical regionalization into two directions: natural and economic regionalization. Here we shall deal only with economic regionalization. I should like to add here, however, that I consider the problem of dividing a certain area into integrated geographical regions to be open and worth discussing. I am thinking here of the integrated regions, called "compage" by American geographers.

4. BASIC THEORETICAL PROBLEMS OF ECONOMIC REGIONALIZATION

In pursuit of this trend the following questions arise:

(1) Is a detailed examination, dealing with the history and methodology of regionalization in geographical science, required in order to illustrate the course of the evolution leading to the differentiation of a separate complex of problems such as is represented by economic regionalization?

(2) Is an additional discussion necessary on the relationship between what we call "geographical regions" (compage) or "landscape regions" and economic regions?

(3) Which branches of science besides geography deal with economic regionalization, and what are their achievements in this field? Here we must determine the role and the tasks of geographical research, compared with economic, sociological, demographic research.

(4) What is the mutual relation of concepts like "economic regionalization", "economic region" or "socio-economic region"? In this respect there is still a certain chaos in geographical science, illustrated by the different interpretations given to the same term and the use of the same term to denote different concepts. This chaotic condition in concepts and terminology complicates cooperation between geographers and specialists of other branches, as well as international cooperation between geographers themselves. In view of these facts an effort must be made to bring order into these concepts and terms. I consider it advisable to correlate Whittlesey's report with the concept and terms applied in other countries. His report should also be supplemented by mentioning the achievements of the last 10 years as made by American, Dutch, French, German, Polish, Russian, and other scientists.

5. MAIN TASKS OF ECONOMIC REGIONALIZATION

According to the results of research carried on at the Institute of Geography of the Polish Academy of Sciences in Warsaw the tasks of economic regionalization may be divided into three principal parts:

(A) Theoretical problems connected with the concepts of "economic region", "economic regionalization", etc. and with the methods used for their determination and delimitation. Among the most important tasks are the establishment of theoretical concepts of economic regions, of adequate terminology, and the position and classification of different methods considered as a set of research tools used in economic regionalization. This set of research tools may be useful not only for economic regionalization but also for general work on regional geography. (I should like to mention that hereafter by the terms "economic region" and "economic regionalization", I shall mean not only the economic structure but also the regional social conditions, thus the full socio-economic structure including cultural and other services).

(B) The investigation and definition of the regional socio-economic structure as it actually exists in a given area. The application of the methods mentioned in point (A), will allow us to characterize the complicated regional economic structure and to obtain a picture reflecting reality. The characteristics of regional economic structure consist of two parts: analytical and synthetic. The analytical characteristics embrace a spatial analysis of all the elements of the regional economic structure and are expressed by different simple uniform regions, regions of organization. The synthetic characteristics are based on integrated (complex) economic regions and are used to present a full picture of the complicated present-day socio-economic conditions. This does not mean, however, that the final effect of a synthetic characteristic must be the

division of a given area into a definite number of integrated economic regions, although this is highly desirable.

(C) Practical tasks intended to evaluate and, where required, to modify the existing administrative division (spatial units of administration) in conformity with the social and political system and the evolution of productive forces, by correlating the division with the given regional economic structure. Similarly, a practical application may be to regions of planning.

6. HISTORICAL APPROACH

Since the regional economic structure is the result of conditions such as the distribution and the evolution of the productive forces or of the territorial social division of labour, the spatial analysis must be initiated by an investigation of the historical development of the territorial socio-economic conditions in the given area, in order to make clear and to understand existing conditions.

As the regional economic structure is subjected to continuous change, its investigations cannot be merely static but must also be dynamic — i.e., such investigations must take into account present changes and also foresee future changes. This implies the introduction of elements of scientific forecasting into the investigations.

7. REGIONAL ECONOMIC STRUCTURE

Such spatial analysis of actual conditions must be based on at least the following four principal features:

- (a) the level of the national economy
- (b) the specific socio-economic character,
- (c) internal socio-economic (primarily productive) connections
- (d) external relations with other areas.

(a) Analysis of the level of the national economy. The level of the national economy may be determined by various indices, calculated either per inhabitant and thus presenting the level of the mode of life, or per square kilometre and indicating the density of economic investments. The social income, created or distributed, may serve as the first subject for analysis. The indices may refer to: (a) income from production, services, etc.; (b) level of consumption; (c) capital investments, etc. The analysis of the level of the national economy has to be based more on investigations of structures than on the individual elements. Thus the analysis should result in the delimitation of a number of regions of a uniform (homogeneous) type. This would represent the initial orientation as to the spatial differentiation of the area examined with regard to its economic development.

(b) The specific socio-economic character. The specific socio-economic character, looked upon from a spatial point of

view, may be analysed in a similar manner. For this purpose use can be made of a great number of indices which may be classified in 5 separate groups. These are: (1) land utilization, (2) demographic structure and balance of employment, (3) capital invested, (4) structure of national income produced, (5) structure of the means of sustenance of the population (including services). Difficulties are encountered here in the selection of indices which most effectively illustrate the specific character of the area examined. Better results should be obtained by using indices of structures than indices of particular features or groups of features and even of partly integrated features. This analysis should also lead to the differentiation of a number of "uniform regions" and thus zones of different intensity and different features of specific social and economic character.

Since the spatial analysis of the level of the national economy and of the specific socio-economic character resemble each other, some geographers combine them into one item, considering the purpose of this research to be the delineation of "uniform regions" characteristic for a given regional economic structure. For a long time geographers have been busy delineating regions of this type, applying many different methods, criteria and indices. There exists a rich literature dealing with the division of uniform (homogeneous, structural, formal) regions; Professor Harris discusses this problem in his paper. After his paper has been read we shall have the opportunity of discussing the usefulness and the importance of the methods hitherto applied.

(c) Internal socio-economic connections. Long ago it became apparent that the delineation of uniform economic regions on the basis of one or more of their static features is insufficient for characterizing the regional economic structure; therefore a research was started in order to examine the connections (linking functions) and the dynamics of socio-economic life in a given area. These studies of regions of organization (nodal, polarizing, functional regions) were developed on a large scale. The theories of central places (of service type), of the territorial division of labour, and others proved very helpful here. A large number of studies dealing with regions of organization were made, applying the most diversified methods, criteria, indices and units of reference (such as lines of communication, markets, etc.); this subject has been treated in detail by Professor Harris. These methods may also represent a topic for discussion, since it seems important to define the methods most suitable for incontestably determining the interconnections occurring within the area examined.

(d) External relations. Passing on to the fourth feature of the area examined, we must stress that the analysis of the relations linking the area with other areas presupposes a delimitation of certain territorial units, whose mutual relations are to be investigated. Also subject for examination is the significance and the role played by a given area with respect to a larger area (as, for instance, the percentage share contributed by a defined district to the total national production in certain branches of industrial production). Also of importance are various balance sheets of production showing deficiencies and surpluses, since they throw light on quantitative interregional relations. Usually spatial analyses are made by investigating interregional (e.g.

between particular districts) and international relations. Such studies reveal the amount of "closure" of the economy in a given area. This amount of "closure" of the economy determines the regional peculiarity of the area examined.

8. SYNTHETIC ANALYSIS OF REGIONAL ECONOMIC STRUCTURE

By a spatial analysis thus carried out, conditions are created for a synthetic characterization of the regional economic structure. The synthetic characteristics of the regional structure may be obtained by superposing uniform regions and regions of organization, both representing the structures of different branches of socio-economic conditions. Different relations between the structures examined must be taken into account — such as causal relation, covariation, correlation or incidental spatial co-existence. As I have already mentioned, all research must not be only static but also dynamic. This is the principal task assigned not only to economic regionalization but indeed to economic geography generally. However this is difficult to accomplish. Immediately the questions arise:

— How should one prepare a synthetic characterization so as to reduce subjective opinions to a minimum?

— What are the methods and criteria to be applied in this endeavour?

— How should geographical research be carried out so as to give as its final result the delimitation of integrated economic regions (compages)?

Preparing such a synthetic characterization of the economic structure of an area is one of the most difficult tasks in economic regionalization. How, then, can we make use of this greatly complicated analytical tool so as to obtain the most satisfactory results?

The above reflections clearly indicate that the synthetic characterization of economic structure is not identical with the division of a given area into integrated (complex) economic regions. A regional economic structure consists of a number of uniform regions and regions of organization, frequently not embracing all of the area examined, but clearly illustrating the realities. Nor do these regions necessarily coincide with the boundaries of the existing administrative division. This matter is linked with the problem of boundaries of regions and the manner of their delineation. All this requires an exhaustive discussion and further analytical and synthetic studies.

9. TERRITORIAL STATISTICAL UNITS

While discussing spatial analyses we must not neglect two further problems: (a) the collecting and spatial grouping of statistical data, and (b) the use in spatial analyses of methods of research that are as objective and accurate as possible.

Methods of collecting statistical data vary and are commonly known. Thus it may suffice to enumerate some of them: censuses made by

statistical offices or other national or international agencies, special lists prepared by various social institutions, by different enterprises or the like, scientific surveys, interviews, inquiries, etc.

It must be kept in mind that a constantly growing amount of statistical data is accumulating, and the appropriate use of this material requires increasingly never and more efficient methods. Obviously, the smaller the unit of reference (mostly an administrative unit) we are dealing with, the more detailed can our spatial analysis be made. Of course, the basic analytical tool for such analyses is a map. However, in order to grasp the dynamics and the features under development, other methods are required besides the cartographical. The utilization of a large amount of statistical data presupposes the use of computing machines. These accurate mathematical methods do not necessarily need very numerous and comprehensive data illustrating the smallest possible units of reference, especially when we deal with a comparative spatial analysis of particular sections of an area examined. In practice, the number of spatial units and features examined may be limited. For instance, to examine interregional relations in Poland, the number of areas by voivodships (17 + 5) is too small, while by counties (317 + 74) it is too large. For purposes of spatial analyses this fact suggests the grouping of the statistical data collected by special territorial statistical units (for Poland they would number 100). In the United States, this division found its expression in the Standard Metropolitan Statistical Areas. Thus a new problem arises — the necessity of delineating territorial-statistical areas, as well suited as possible to the spatial analysis of any given territory. This is a matter for discussion and requires different methods of procedure in different countries.

10. QUANTITATIVE METHODS OF SPATIAL ANALYSIS

Speaking of accurate methods of analysis, I am, of course, thinking of quantitative, mostly mathematical, methods. Particularly suitable for spatial analysis are some econometric methods. Frequently quantitative methods require electronic computers. The application of quantitative methods in geographical research has not yet advanced beyond its first stage and, therefore, this subject requires comprehensive discussion. However, there is no doubt that the use of quantitative methods is extremely important for carrying on any further geographical research in the most appropriate direction.

I should also like to draw your attention to the attempts to construct models of regional economic structures as made by economists. These problems cannot be left beyond the sphere of interest of geographical studies dealing with economic regionalization. Such models need a precise establishment of the problems investigated and the aims of investigation which, in turn, determine the logical selection of features that must be taken into account in the investigations of regional economic structure. It also seems necessary to apply here different theories of location and regionalization of socio-economic conditions, especially theories on the location of production (for instance of Christaller, Hoover, Isard, Lösch, Niemchinov, Thünen, Weber, and others).

11. PRACTICAL TASKS OF ECONOMIC REGIONALIZATION

A third group of problems of economic regionalization comprises practical tasks. I have in mind the relation of the regional economic structure, as it exists at present, to the administrative division of planning regions (region d'aménagement). It is well known that socio-economic life has not developed uniformly in a spatial sense and sometimes has failed to take into account political-administrative boundaries. In virtue of the movement of regionalism spreading in Europe and the United States, mainly aimed at emphasizing local cultural differences, the desire has developed to adapt the network of administrative division to the evolution and the distribution of local productive forces. A number of attempts have been made to work out an "optimal" administrative division. In the capitalist countries this tendency has encountered numerous difficulties, since the rate of development of the productive forces is usually rapid, so that the existing administrative division, sometimes historically very old and traditional, has failed to harmonize with important necessities of the evolution of social and economic life. These contradictions appeared with particular severity in the Soviet Union after the October Revolution. Both the change in the political system and the introduction of a planned economy demanded prompt changes in the old administrative division and the creation of a new division, suitable for spatial planning and management of the national economy. Immediately after the Revolution, work was started on delineating fundamental economic regions for the needs of "Gosplan". Similar steps were taken after the Second World War in the countries of Eastern Europe that were building a socialist political system. In many countries it has been postulated that the new economic regions should, at the same time, be regions of planning and new administrative units, since on every level of the administrative division the combined territorial authorities were planning and managing certain branches of the national economy. Consequently, new divisions into "administrative-economic regions" were introduced in the Soviet Union, in Czechoslovakia, Bulgaria, the German Democratic Republic, and in other countries.

I have mentioned before that the principal practical task of economic regionalization is to evaluate and modify the administrative division of the planning regions by comparing them with the regional economic structure already existing. However, this comparison must take into consideration: (1) the existing social and political system, (2) the economic system, (3) the present status and the rate of evolution of the productive forces. These three factors have the greatest influence on the administrative division of a country which ought to be best adapted to the needs and to the social and political aims of that country. By taking into account the fundamental political and economic guiding principles in a given country one can suggest modifications which would reduce to a minimum any spatial differences occurring between the regional economic structure and the existing administrative division of the planning regions. Whenever this comparison comprises regions of planning, one must take into account, besides the conditions actually existing, the potential possibilities contained in the geographical environment, the geographical position, and in the demographic structure

of the area, etc., as well as the established perspective targets of its planned development.

On the basis of these reflections it appears that most valuable may be our discussion on the following subjects: How can economic regionalization be best utilized in practice in countries with a planned economy on the one hand and, on the other hand, in countries with a liberal and individualistic economy? However, we shall only be able to discuss this problem fully after Professor Juillard's paper has been read.

12. TYPOLOGY, TAXONOMY AND HIERARCHY OF ECONOMIC REGIONS

If we find suitable methods which allow us to divide regional economic structure into definite integrated regions, three other problems will arise. They were not taken into account when the topics for our present Meeting were selected. The first of these problems deals with the question of typology of economic regions in economic regionalization, the second with taxonomy and the third with the hierarchy of economic regions.

(a) *Typology of economic regions.* Taking into account the economic regions integrated from a point of view which is determined by the aim of the research and accepting certain basic principles — an attempt can be made to establish the typology of economic regions. The typology may be based on different characteristic features such as: the level of development of the socio-economic life, the specific character of the production, the role and functions of these regions in larger regional units, for example, in a country. The bases of typology may be different; they depend on the purpose of the research. In geographical literature we have many attempts to establish the typology of economic regions. They concern uniform regions or regions of organization rather than integrated regions. Mostly these are attempts to establish the typology of economic regions on the scale of a single country or of a group of countries. Attempts on a world scale were very seldom made (K o ł o s s o w s k i, C h a r d o n n e t). Geographers were more concerned with the typology of geographical regions.

Although the problem of typology of economic regions is not easy, and the theoretical bases for such a typology have not yet been established, it may be considered an interesting item for our discussion.

(b) *Taxonomy of economic regions.* In physico-geographical regionalization the problem of taxonomy was introduced some time ago. The world, or rather the continents, are divided into large geographical macroregions — provinces, which, in turn, are divided into zones; subsequently, there are delimited regions, subregions, micro-regions, etc. Taxonomy is closely linked to the hierarchy. A certain number of regions of lower rank form a new unit, and each higher rank region may be divided into a certain full number of regions of lower rank. The fundamental element of this division is the size of a region (the number of square kilometres); however, the criteria of delimitation

change: from the tectonic-geological, macroclimatic, by way of the geomorphological to soil, microclimatic, biotic and others criteria. Thus the main difficulty lies in the choice of suitable criteria and in establishing a fundamental unit of medium size, typical for the entire taxonomical system.

Here arises the question whether an analogous taxonomy may be adapted to economic regions. This question is open to discussion and difficult to answer. However, life presents the necessity of dividing continents into large economic regions, while for teaching and information purposes, decentralized administration and a planned local economy economic microregions are needed.

Even so, in the case of economic regions, taxonomical problems are very complicated since, besides the surface, there must also be taken into account the economic potential as expressed in the social division and the development of the productive forces. Here the question arises whether economic regions may be considered at all in areas economically underdeveloped and sparsely populated. How is it possible — in addition to spatial criteria — to introduce into the taxonomy of economic regions criteria indicating a development of productive forces? These problems I can merely mention now in inaugurating our discussion. They require further research although they are made urgent by the necessities of socio-economic life.

(c) Hierarchy of economic regions. I pass on to the second problem mentioned before, that of the hierarchy of economic regions. While reflecting on the problems of this hierarchy, we must pay attention to two questions: (a) the comparison of regions in the various countries according to their size, and (b) the relation of the established ranks of economic regions to the network of the administrative division. The comparison of different ranks of economic regions in countries like Belgium and Holland, with corresponding economic regions in the Soviet Union or in the United States is very difficult. In a comparison like this the criterion of size is insufficient, thus the criterion of the economic potential must be taken into consideration as well. Thus the problem of comparing regions of different countries remains an open question. Another difficult task is to define methods for merging the established regions into larger units in order to create "macroregions", and to split up an economic region into smaller parts so as to obtain "microregions".

All that has been said above may be applied to regions of organization.

The uniform regions, however, need quite another approach. In my opinion, they can also form large zones which may be divided into smaller parts.

It seems a very much simpler task to compare various ranks of economic regions within one country, with a suitable network of the administrative division. As a rule, in such instances the same principles can be applied as were mentioned in the comparison of the administrative division with the existing regional economic structure. In general, a certain conformity of the two hierarchies may be seen, even on identical number of levels. However, sometimes there will be economic regions, especially regions of organization, of intermediate size, which do not fit into the network of the administrative division.

13. A MAP OF ECONOMIC REGIONS OF THE WORLD

As I mentioned before, I decided to devote more time to the three last-named problems because they are not treated in the papers assigned. The establishment of the typology of economic regions is fundamental for the preparation the map of economic regions. As to myself, I am deeply interested in the problem of dividing the world into large economic regions, "macroregions", based on criteria as simple and objective as possible. I have also been meditating for some time on the essential principles of preparing a map of "the economic regions of the world".

14. CONCLUSION

In completing my paper, which initiates our discussion, I must conclude that the specific character of economic regionalization consists not only in the examination of the regional economic structure on the basis of the most adequate and precise methods and research tools, but also of the evaluation and modification of existing administrative divisions and divisions of planning. The important point is that both these divisions should always be correlated as closely as possible to the existing regional economic structure.

Institute of Geography
Polish Academy of Sciences
Warsaw

DISCUSSION OF THE FIRST DAY OF THE MEETING
September 9, 1963

MIROSLAV BLAŽEK

The paper very correctly classifies economic regions and the problems of their delimitation into three groups: (1) regions for practical needs of planning, (2) regions as economic phenomena, and (3) regions as analytical units. I think that the relation between the first and second type is given by the fact that the correct determination of the planning unit means the correct choice and delimitation of such a real, existing economic region, which is most suitable for the given practical (planning) needs.

The third type (analytical units) are of use as working tools in the determination of structure and in the construction of the economic region. Individual types are, thus, in close mutual relation. Nevertheless, it might perhaps be useful to distinguish between the third type from the first ones in terminology. For instance, the term "area" suggests itself in place of "region".

The problem of the hierarchy of regions is closely linked to the question of types of regions. When we analyse the formation of the precedence of regions from the most general viewpoints, we classify as regions of first-class importance those regions, which can be grasped as individualities from the point of view of world economy. Here belong the majority of economically developed countries with the exception of the greatest states (USA, USSR, and potentially others), which form vast complexes within which regions of the highest order are already component parts of the state territory. Regions of the second order may be found within the framework of the national economy etc. Then follow the others. In their classification much has remained unclear and the Commission might perhaps contribute to an elucidation of viewpoints. As the lowest link in the hierarchy of regions we regard such a delimited area where a territorial division of labour still exists, representing at the same time an area which could be geographically evaluated. In practice the lowest administrative units, i.e. localities proved to be just such units.

On no account the problems hierarchy of regions can be settled without a further study of the relationship between economic and administrative regionalization.

MICHEL PHILIPPONNEAU

Je pense que l'exposé préliminaire du Prof. Leszczycki aura été particulièrement utile parce qu'il nous permet, en quelque sorte, de faire à l'avance la synthèse de nos travaux en soulignant les principales

préoccupations des géographes intéressés par ces problèmes de régionalisation économique.

Je ne voudrais pas revenir sur les différents points de l'exposé du Prof. Leszczycki, mais simplement parler de l'équilibre entre les questions évoquées. Or je dois indiquer franchement que cet équilibre entre les problèmes théoriques et les problèmes pratiques ne me paraît pas tout à fait respecté. Nous allons à maintes reprises nous poser des questions sur ce qu'est la région, région homogène et région nodale. Nous allons également discuter sur la hiérarchie des régions, petites régions, moyennes régions, grandes régions. Mais allons-nous évoquer aussi la façon dont la géographie peut rendre des services pour l'aménagement des régions? Je sais bien qu'il faut partir de la réunion des documents, des cartes, etc... Mais il m'a paru particulièrement intéressant d'évoquer dans ce colloque qui rassemble des géographes des pays de l'Est et des géographes des pays de l'Ouest la façon dont les géographes participent effectivement à l'aménagement des régions.

Nous pouvons prendre une région même dans son cadre administratif actuel et à l'intérieur de cette région étudier des problèmes spécifiques, étudier comment transformer la structure de cette région, comment améliorer l'agriculture, comment implanter de nouvelles industries. Ces questions pratiques sont-elles posées aux géographes dans le cadre régional?

Il existe aussi un autre problème qui est celui de l'équilibre entre différentes régions, à l'intérieur du même pays. Nous avons de tels problèmes en France, par exemple entre les deux grandes catégories de régions que l'on appelle "régions d'entraînement" où l'Etat doit consentir un effort spécial pour le développement économique, et les "régions d'accompagnement" où l'Etat se contente de réaliser les investissements nécessaires à la progression normale de l'économie.

Voilà un type de problème qui m'intéresse spécialement.

Je serais très heureux et très reconnaissant à mes collègues si, au cours des différentes discussions et à propos des différents points soulevés, ils voulaient évoquer ces questions de la participation pratique des géographes à ces problèmes d'aménagement régional.

Je crois qu'il serait dommage de quitter ce Congrès sans avoir une idée précise sur la façon dont les géographes sont employés pour réaliser des travaux intéressant l'aménagement des régions. L'aménagement régional est de loin la branche la plus importante, et la plus intéressante, de la géographie appliquée.

C'est pourquoi je serais très heureux s'il était possible, au cours de ce colloque, d'insister sur cette question.

OMER TULIPPE

Pendant longtemps, je suis resté sceptique au sujet de la notion de région économique. Après maintes tentatives de régionalisation économique appliquée à mon pays, j'avais même renoncé à l'espoir d'aboutir à une solution donnant toute satisfaction. Je me hâte d'ajouter tout de suite que les essais de régionalisation ont au contraire été couronnés de succès à partir du moment où ils ont porté sur un objet précis: d'où des cartes de régions agricoles, de régions industrielles, etc. J'aurai

l'occasion de vous en donner une idée lors de l'exposé que je compte faire sur le contenu de l'excellent rapport de M. le Professeur H a r r i s.

Mais dès que j'ai été directement mêlé aux préoccupations de l'aménagement — c'est-à-dire mêlé à l'action — j'ai dû reconsidérer le problème des possibilités et des méthodes de régionalisation économique — aidé en cela par les progrès réalisés dans cette voie par les études de notre Commission.

En particulier, le remarquable rapport collectif présenté par notre Président à ce Colloque m'a confirmé dans l'opinion que j'avais fini par me faire sur la notion de région économique. C'est qu'en effet, M. le Professeur L e s z c z y c k i nous ramène à des préoccupations d'aménagement de territoire, c'est-à-dire de science appliquée. Pour lui, une "planning region", une "région d'aménagement", est une région socio-économique. Je suis particulièrement intéressé de savoir comment au cours de ce Colloque, on arrivera à expliciter cette notion de région socio-économique en sorte — comme le souhaitait M. le Professeur P h i l i p p o n n e a u il y a quelques instants — que nous puissions être aidés à perfectionner notre travail de science appliquée qui est notre lot quotidien; car jusqu'à plus ample informé, pour moi, la région économique reste celle où un plan d'aménagement économique peut réussir.

BRIAN J. L. BERRY

Let me call the attention of the participants to two points which have not, I think, been adequately clarified in the discussion so far, and then share with you the fruits of recent experience, studying and thinking about economic regions in the United States.

(1) At the methodological level, we need to distinguish between the delineation of regions in the sense of contiguous areal units according to specified criteria of uniformity or interconnections, and the definition of regional types in which the areal units are relatively uniform or are interconnected but are not spatially contiguous. Does our discussion of economic regions extend to both cases?

(2) We need to consider not only the scale of the units of observation for taxonomic purposes, but also their nature. What are the relative advantages of using areas defined by uniform grids, as is being done in Sweden and India, as opposed to political subdivisions, the common basic units throughout the world, or some other kind of "standard statistical reporting areas"?

We speak of the need for unifying the apparently discordant ideas of homogeneous (uniform) and organizational (functional) regions. Is this necessary? Let me illustrate. The US. economy is highly specialized, and many areas produce many different things, according to the principles of territorial division of labor. Yet all people producing these specialized things are consumers, and as consumers they all consume much the same quantity and kinds of goods and services. The US. economic system serves several functions: (1) to ensure that demands and supplies are equalized; (2) to bring supplies from points of production to consumers — a problem in articulation. Metropolitan centers are the main articulation points. They gather the specialized products of themselves and their hinterlands and ship them to all other metropolitan centers, and receive in return the products gathered by the other

metropolitan centers, to assemble the goods and services needed by consumers. Then, by way of the central place hierarchy of which they are the top, they facilitate distribution of commodities to the final consumers through wholesale and retail relationships. All segments of the economy are thus interdependent parts of a complex whole; this whole can be called a system. We can view this system at several levels: (1) the structural, or "what is where", and this leads to definition of uniform regions; (2) the functional or organizational, or "what is connected to what", which leads to organizational regions; (3) the dynamic, or "how things are changing". We have no terms for this as yet in our discussions of economic regions. So long as we recognize that we are dealing with a system, then it will be clear that the kinds of regions we define in a scientific study depend upon the point of view we take in looking at the system. This point of view determines the level of region sought and found, structural, functional or dynamic.

At the dynamic level we can introduce considerations of actions necessary to influence directions of change of the system. If we compare an actual situation with a desirable one, an understanding of the system allows us to say what changes are necessary to achieve desired ends. Alternatively, if a certain action is proposed, we can predict what its outcome will be. Thus, to avoid study of regional economic structure when there is need for the definition of regions for purposes of planning may be dangerous, or even specious.

Now I have said enough, but before I sit down I would like to call the attention of the participants to the value of an analytic method now made possible by advances in computing technology, multiple factor analysis, for developing both multi-variable uniform and multi-connection organizational regions in an optimal way in scientific study. We have made extensive use of this technique, and find it to be by far the most powerful and general one for purposes of classification and regionalization yet developed.

SIEGFRIED SCHNEIDER

The First Conference of the IGU Commission on Methods of Economic Regionalization at Utrecht in 1961 resolved to establish a special International Bibliography on Economic Regionalization. In connection with this task the problem arose of establishing a clear and logical arrangement according to a system that would be well understood internationally.

The Federal Institute of Regional Geography has tested and compiled the necessary material from the well known Universal Decimal Classification. The first proposal of this classification made on behalf of Economic Regionalization, is herewith presented to this Commission.

The Universal Decimal Classification (UDC) is a scheme for classifying the whole field of knowledge. It can be applied both to literature which records information and to the catalogues, indexes, etc., which refer to the literature.

Derived some 50 years ago from the Dewey Decimal Classification, the system has been constantly amplified and modified. It has become widely accepted internationally as a standard and is now used in many

thousands of libraries and information services, in periodicals and in countless bibliographies and reference lists.

The third full international edition since the end of the Second World War comprises seven volumes of tables and a three-volume alphabetical index. Abridged editions have been published in Czech, Dutch, English, Finnish, German, Japanese, Polish, Spanish, Swedish. The 25th Conference of the *Fédération Internationale de Documentation* (FID) was held in 1959 in Warsaw. The standard abridged text is now provided by the three-language edition of the UDC, published in 1958 by the British Standards Institution, London W 1 and the Beuth-Vertrieb, Berlin, W. 15.

The classification allows every concept to have a place of its own in the system, so that there is a clear and logical arrangement of information. The ten chief subdivisions of the UDC are:

- 0 Generalities.
- 1 Philosophy. Metaphysics. Psychology. Logic. Ethics.
- 2 Religion. Theology.
- 3 Social Sciences. Sociology. Law. Government. Education.
- 4 Philology. Languages.
- 5 Pure Sciences.
- 6 Applied Sciences. Medicine. Technology.
- 7 Fine Arts. Applied Arts. Entertainment. Recreation. Sport.
- 8 Literature. Belles Lettres.
- 9 Homeland Science (908) Geography (91) Biography (92) History (93/99).

In the case of a regional treatment of a topic the reference to the locality is given by means of auxiliary symbols of locality, marked by parentheses (...). "...", of form (0...), of language = ... These may be employed as necessary.

At the 9th General Assembly and 18th International Geographical Congress in Rio de Janeiro in 1956 the IGU Commission on the Classification of Books and Maps in Libraries made a proposal for a better adaption of the UDC to the requirements of geography¹.

This proposal was fully accepted by the CCC (Central Classification Committee) of the FID (*Fédération Internationale de Documentation*) and published in the UDC-News 1960 ([4], pp. 1315 a—c).

The combination of several collateral sciences characterizes this classification system, especially in the field of geography. The new proposal is an auxiliary for establishing a bibliography on economic regionalization. Some new expressions for geographical definitions must be introduced, e.g. "small, middle, large areas", or "with certain boundaries — with uncertain boundaries" or "structural unit — functional unit". The CCC has been asked for an official permit to use these expressions.

Here an extract of the international edition with some special combinations for the purposes of economic regionalization are presented; this

¹ E. Meynen: UDC 91 — Geography. Proposal for a revision of Group UDC 91, Geography. Compiled in behalf of the Commission on the Classification of Books and Maps in Libraries. — Publication of the International Geographical Union, Commission on the Classification of Books and Maps in Libraries, for the Ninth General Assembly and Eighteenth International Geographical Congress, Rio de Janeiro, 9. — 18/8/1956. — Remagen, 1956.

proposal is not complete, but there are many possibilities of combining and amplifying the Group 91 (Geography). We eliminate collateral sciences, auxiliary symbols and numbers of the place and the region, of the time, of the form and of the point of view.

Everybody who wants to work with the UDC should read an introduction given in English as "Guide to the Universal Decimal Classification", London, 1963 or in German as "Einführung in das Wesen der Dezimalklassifikation" by Dr. Karl Fill. Beuth-Vertrieb Berlin, 1960.

U.D.C. 91 — GEOGRAPHY

Compiled on behalf of the IGU-Commission on Methods of Economic Regionalization

- 911.3 Human Geography
- 911.3 (1—04) Geography of human frontiers and boundaries
- 911.3:2 Geography of religion
- 911.3:30 Social geography
- 911.3:312 Geography of population
- 911.3:322.8 Geography of population movements
- 911.3:312.9 Geography of population distribution
- Geography of population density
- 911.3:32 Political geography
- 911.3:321.3 Geography of social structure
- Geography of professional structure
- 911.3:33 Economic geography
- 911.3:338.4 Geography of industry and handicrafts
- 911.3:34 Geography of law
- 911.3:341.21 Geography of states
- 911.3:35 Geography of administration
- 911.3:38 Geography of commerce
- 911.3:380.8 Geography of tourism
- 911.3:62 Geography of technology
- 911.3:622 Geography of mining
- 911.3:63 Geography of agriculture
- 911.3:634 Geography of forestry
- 911.3:656 Geography of transport and communications
- 911.3:656.1 Geography of roads
- 911.3:656.2 Geography of railways
- 911.3:656.3 Geography of inland water-ways
- 911.3:656.7 Geography of airways
- 911.3:711 Settlement geography. Town and Country Planning
- Regional planning
- 911.3:711.4 Geography of conurbations, built-up areas. Settlements
- Town planning
- 911.3:711.41 Forms of built-up areas
- 911.3:711.417 Garden cities. New, twin, satellite towns
- 911.3:711.417.5 Twin towns
- 911.3:711.42 Geography of types of towns and localities
- 911.3:711.432 Geography of capitals, residential towns, metro-
polis

.433	Large towns (with more than 100,000 inhabitants)
.434	Middle towns
.435	Small towns
.436	Communities
.437	Villages
.438	Small villages. Hamlets
911.3:711.45	Specialized function cities (central places)
.451	Administrative towns
.452	Commercial towns
.453	Transport cities
.453.1	Railway-junction cities
.453.4	Harbour-cities
.453.9	Airport-cities
911.3:711.454	Industrial towns, manufacturing centers
.454:622	Centers of production, Industrial centers
.455	Mining-towns
.455:615	Health and bathing resorts
911.3:711.47	Recreation centers
	University towns
.48	Dormitory towns
911.3:711.5	Geography of quarters, zones and district within towns and localities
.51	Zoning generally. Legal aspects
.52	Centralisation of quarter within towns
.522	Administrative districts
.523	Areas within cities
.55	Functional units
.551	Administration quarters
.552	Commercial quarters
.554	Industrial quarters
911.3:711.557	Tourist quarters (hotels)
.559	Other quarters within towns
.58	Residential areas
911.3:711.7	Communications. Structure. Planning
.73	Roads. Structure. Planning
.75	Rail roads. Structure. Planning.
.76	Inland waterways. Structure. Planning
.77	Airways. Structure. Planning
911.3:711.8	Public utilities. Supply lines
911.3:712	Landscape, natural and designed
712.2	Landscape pattern. Reserves. Open spaces
	Parks and gardens
712.23	National parks. Nature conservancy
911.5	Type studies in geography
911.6	Division into individual regions and their units
911.6:35.071.5	Regional subdivision upon criteria of public administration
911.6:33	Regional subdivision upon criteria of economic geography
911.6:33—156.3	Economic regional unit
911.6:33—156.5	Economic region
911.6:33—156.8	Economic zone

- 911.6:333.173.34
 911.6—057.622
 911.6—057.622—191.2
 911.6:338.45
- 911.6:63
 911.6:63 (1—862)
 911.6:622 (1—862)
 911.6:634.9
 911.6:634.9 (1—862)
 911.6—814
 911.6—191.4
 911.6—191.4—862
 911.7
- 911.8
 911.9
 911.9:33
 911.9:35
 911.9:502.7
 911.7
 911.9:711
 911.9.711.14
- 911.9:711.16
 911.9:711.163
- 911.9:711.164
- 911.9:711.168
 911.9:711.2
 911.9:711.3
 911.9:711.4
- 912
- 912.4
- 912.41
 912.42
 912.43
 912.43:312
 912.43:33
 :338
 :341.2
 :35.07
 :35.07(-2)
 :55
 :622
 :63
 :634.9
 :656
- State economic regionalization
 Commuting regions
 Commuting center
 Divisions into industrial regions
 Industrial region. Manufacturing region
 Industrial district
 Divisions into agricultural regions
 Agricultural region
 Mining region
 Division into forest regions
 Forest region. Forest district
 Division into functional regions
 Division into nodal regions
 Nodal region
 Comparative geography (comparative landscape study and comparative regional geography)
 Geography aiming at establishing rules and laws
 Applied Geography
 Applied Geography in economics
 Applied Geography in administration
 Landscape natural and designed. Nature conservancy
 Applied Geography for town and country planning
 Applied Geography for land and property utilization
 Applied Geography for planning programme
 Applied Geography for improvement schemes
 Replanning
 Applied Geography for clearance, demolition, tuinning out
 Applied Geography for rebuilding, reconstruction
 Applied Geography for regional planning
 Applied Geography for national planning
 Applied Geography for local planning, town planning
 Representations other than literary of a country or location
 Graphical, pictorial and cartographical representations
 Pictorial illustrations
 Graphical representations
 Cartographical representations
 Population maps
 Economic maps
 Industrial maps
 Political maps. Frontier maps
 Maps of administrative boundaries
 Maps of community boundaries
 Geological maps
 Mining maps
 Agricultural maps
 Forestry maps
 Maps of communications

Common auxiliaries of place

- a) The relative extension of an area *
- (-156.2) = very small area
 - (-156.3) = small area
 - (-156.5) = middle large area
 - (-156.7) = large area
 - (-156.8) = very large area
 - (-2) = Local units. Towns. Villages
 - (-3) = Regional units. Provinces. Countries
 - (-4) = National units. States. Powers
- b) (-81) = situation of an area, place
- (-812) = seen by structure *
 - (-814) = seen by function *
- c) (1-862) = Common delimitation of a place *
- 91-862 = Region with fixed boundaries *
 - 91-864 = Region with uncertain boundaries *

Common auxiliaries of collateral sciences

- 33 Political economy. Economics
- 330 General concepts of economics
- .1 General principles, laws and systems
 - .11 Economic phenomena and laws
 - .115 Econometry
 - .12 Objects of economics. Wealth
 - .13 The economic principle. Utility. Value
 - .14 Capital
 - .148 Capitalism
 - .15 Natural factors. Natural wealth and productive forces
 - .16 Physico-psychological elements
 - Economic necessity and material needs
 - .17 Free and controlled economy
 - .172 Free economy
 - .173 Controlled or planned economy
 - .173.34 Planned economy
 - .18 Economic systems
 - .186 Theories based at least partly on revelation and intuition
 - .187 Theories built up by conventional methods as in the exact sciences: empirical, natural science, technical, etc. Technocracy
 - .19 Economic polity. Economic scale
 - .191.5 National economy
 - 330.191.6 International, world economy
 - 330.2 Organization and co-operation in the economic sphere
 - Reorganization, reform
 - 333 Land and property
 - 333.013.4 Problems of locality
 - .6 Land reforms

* proposal

333.1	Public property
333.11	Expropriation
333.12	Nationalization. Socialization
333.13	Unoccupied lands. Ownerless estates
333.2	Communal property. Commons
333.3	Private property
333.31	Family seat. Homestead
333.37	Large-scale ownership. Latifundia
.38	Small-scale property. Small holdings
	Repartition
.39	Operations and speculations in land
333.4	Property of absentees and foreigners
.5	Agricultural property. Leased rented land for farming, etc. etc.
.6	Urban property
.7	Forest lands and property
.8	Property in mines, in subsoil
.9	Water, hunting, fishing rights, etc.

LEOPOLD SCHEIDL

Regionalization, first of all, means "to make (an area) a region"; for our purposes the word is more used in the sense of "delimiting a region" or "defining a region". Region is a complex area, a synthesis of many features and factors.

There is no strict distinction between structural and functional regions, since structure (texture, form) and functions (interdependencies, processes) are rather two inter-connected aspects of one asset of facts and forces.

While we mainly treat regions of production (s.c. primary and secondary production), we should not forget the regions of services (s.c. tertiary production), especially traffic regions and market regions, and the regions of consumption.

REGIONAL STRUCTURE AND ECONOMIC REGIONS OF POLAND

K. DZIEWOŃSKI, A. WRÓBEL

The following served as the basis in making of this report:

1) to present the main patterns of distribution and the areal interconnections of principal factors in the Polish economy,

2) to analyse which of these patterns and to what extent possess a regional character,

3) to discuss the mutual relations of the regional patterns, i.e. the regional structure of Polish economy, especially from the point of view of its integration into economic regions;

4) to confront the existing regional structure and economic regions with administrative and planning divisions as well as with the divisions used by economic geographers and other scientists in their studies.

Different ways and approaches could be chosen to this end. In this report the following line of reasoning has been applied to provide the logical construction for the presentation of collected materials, maps and data:

(1) the main factors of production (geographical environment and — in particular — natural resources; population and — in particular — labour force, as well as the capital equipment) form the material basis of socio-economic life;

(2) the interplay of these factors in the processes of production and consumption, forming various areal patterns, determines the spatial differentiation of the types of economy and of the intensity of socio-economic development;

(3) in consequence of the growing territorial division of labour the additional pattern of functional interconnections is superposed on the spatial differentiation of local economy; these two systems of patterns mutually condition each other and together form the regional structure of socio-economic life.

(4) the integration of regional structure may lead to definite and well-established sub-divisions of socio-economic time-space, i.e. to the rise of economic regions.

I. THE AREAL DIFFERENTIATION OF THE MATERIAL BASIS OF SOCIO-ECONOMIC LIFE

(a) GEOGRAPHICAL ENVIRONMENT

As a result of a series of studies published by J. Kondracki we have now a very good and clear general picture of the regionalization of the geographical environment which, in short, may be properly called geographical regionalization, i.e. the division into subspaces of geographical space of Poland. The basic physical division splitting Polish lands into two parts, is the one between Western and Eastern Europe. According to the above-mentioned studies, their boundary, delimited directly by phytosociological data and, indirectly, by the climatic ones, runs more or less diagonally from the shore of the Baltic Sea, in the vicinity of Kaliningrad (formerly known as Königsberg), i.e. from the mouth of the Pregola River, to the Bug River in the vicinity of a small town of Drohiczyn and then almost directly to the South. The majority of Polish lands are characterized, therefore, by geographical conditions typical for Western Europe. However the boundary line is not clearly cut — there exists a wide transition-zone on both sides of the line and from the point of view of human economy it may be easily crossed.

The further divisions are more distinct and more correlated (i.e. influencing and influenced) with human economy. They are, on the one side: (1) the Middle European Lowland further subdivided into South Baltic Coastal Plain, South Baltic Lake District and Middle Polish Plain; (2) Czech Massif (i.e. Sudety Mountains); (3) Plateau of Lesser Poland; (4) the Carpathians and Subcarpathians further subdivided into Subcarpathian basins, external and central West Carpathians, and, on the other side, (5) East Baltic Lowland; (6) Lowland of Polesie, and (7) Black Sea Plateau. These physical regions and their even smaller subdivisions, however, although deeply influencing and correlated with types of agricultural and partly also industrial production, are not directly reflected in economic regional divisions. It may be even said that in Polish history there was always a definite tendency for the development of economic regions integrating territories of various physical character and dependence. This is easily understandable in view of Geddes's theory of the Valley Section.

To cut short further discussion on the relations between geographical environment and economic regionalization in Poland one, new and only recently emerging problem should be marked here. The increasing and better knowledge of mineral resources due to the improved methods of geological research (drillings up to the depth of several thousand meters, magnetic and seismic soundings) tends — in Poland as all over Europe — to change the dependence of mining and thus also of industry on the Valley Section, i.e. the outcrops of older geological strata. This process has already begun in Poland breaking through the traditional, industrial preponderance of southern part of the country, but its final results are not yet within the range of our full comprehension.

(b) DISTRIBUTION OF POPULATION

The mutual connection between the regional structure and the distribution of population may be analysed on the basis of the

results of studies and maps, recently prepared by the Department of Urban Geography at the Institute of Geography of the Polish Academy of Sciences, that are soon to be published. They reveal the existence of several basic zones differentiated according to the prevailing or modal density of their population — up to 30, from 30 to 50, from 50 to 90, and from 90 to 150 persons per sq km. An additional area in Southern Poland is characterized by high average densities (up to 300 persons per sq km) without one category of densities clearly dominating over the others. The tendencies of growth and change, resulting both from natural increase of population and from recent migrations connected with post-war resettlement and with rural-urban flows as well, have introduced the dynamic factor into this general picture. With the average index of population growth for Poland amounting to 20% in the years 1950—1960, urbanization brings in the processes of concentration. However as a result of the policies adopted for the location of new industrial plants, these tendencies are limited in scope and comparatively even in their regional distribution.

A further complication in the regional structure is brought by the differences in the rate of natural increase of population in the various parts of the country. There are clearly three different zones: in Central and Eastern Poland the natural increase is moderate and slowly diminishing; in Western and Northern Poland it is extremely high but diminishes more rapidly, and in the western part of Upper Silesia, as well as in the area of Masurian Lakes — there is a slow but constantly growing rate of natural increase. These differences are due to the age structure of population resulting from war losses and post-war resettlement of population. To this should be added differences in the rate of natural increase in the rural and urban areas, practically non-existent in the post-war years, but presently growing again.

All these factors find their reflection in the regional differences in the growth of manpower. With public policies aiming at a limitation of migrations, the present and future reserves of manpower play an increasing role in the locational decisions. In this way, the distribution and structure of population gain the rank of main factor in the development of regional economies. At the same time, the areas of the greater concentrations of population turn into the core districts of the economic regions. In the more backward areas all the efforts are concentrated on creating new and active concentrations of population.

(c) CAPITAL EQUIPMENT

The existence of considerable regional disparities in the capital equipment in Poland — due first of all to the division of the country in the XIXth century between three great empires with completely different economic and social structure and policies — is a fact generally recognized. It is only recently that its quantitative analysis has become possible. The inventory of all capital equipment was undertaken under the guidance of the Central Statistical Office and its results begin to be published. On the basis of these data the average indices per head of population are calculated for voivodships and poviats. Some rather surprising facts have been revealed. The comparatively best equipped areas of the country have been found not in the highly industrialized districts

or in the big cities but in the regions both agriculturally and industrially well developed, i.e. in the voivodships of Opole and Wrocław. The worst equipped areas are not the underdeveloped eastern voivodships with a low density of population but the central ones, densely populated, industrialized, but with poorly developed services. Indeed, the most characteristic feature of the new appraisal is the importance of infrastructure of communications and communal services for the general picture of regional capital equipment and, in consequence, for the prospects of economic development.

From the point of view of the formation and existence of economic regions the intensity, character and spatial structure of capital equipment, in particular of infrastructure, is — as we find it in Poland — of great importance, especially when taken in its dynamic aspects. It may be an important advantage or it may seriously impede the development of a region and its economy.

II. THE AREAL PATTERNS OF PRODUCTION, OF TYPES OF ECONOMY AND OF ECONOMIC DEVELOPMENT

(a) AGRICULTURAL PRODUCTION AND TYPES OF RURAL ECONOMY

The best up-to-date studies of the Polish agriculture are those, only partly published, of the Institute of Agricultural Economics and of the Department of Geography of Agriculture at the Institute of Geography of the Polish Academy of Sciences. A map of the gross agricultural output per ha by poviats, prepared by R. Szczęsny, gives a good approximative picture of the regional importance of this production. However, it has to be supplemented in two directions: regional and local specialization of production and types of agricultural or rather rural economy with special emphasis being laid on the value of commercial, i.e. market production. Another map of Szczęsny clearly shows the extreme diversification and complexity of agricultural problems in Poland. The comparison with the map of soils (as well as with the map of climatic regions) indicates that at present the agricultural production depends more on human, i.e. social and economic as well as on past political conditions than on the natural ones. Agrotechnical education, size and capital equipment of the farms, specialization and commercialization of production, all resulting mainly from the past political, social and economic history, form the basis of the present situation and the regionalization of the Polish agriculture. The present planning efforts aim at increasing output and achieving an economically and socially more efficient organization. This is to be obtained, on the one hand, by the progress in the specialization of production and, on the other hand, by making better use of natural resources and conditions as well as by the further agrotechnical progress.

The static picture of Polish agriculture is characterized by the division into several basic regions and zones:

(1) north-western and northern voivodships of Zielona Góra, Szczecin, Koszalin, Olsztyn and, partly, of Gdańsk and Białystok, with a low density of agricultural population, large percentage of arable land being public property (state farms), comparatively large peasant farms and, as

a result, rather high yields per head of agricultural population but rather low per unit of arable land;

(2) south-, and central-western voivodships of Wrocław, Poznań, Bydgoszcz and Opole — with moderate and sometimes high density of agricultural population, comparatively large percentage of land being social property (state or cooperative farms), with comparatively healthy structure of peasant farms, of the highest technical level and commercial specialization of agricultural production in this country, obtaining, therefore, in areas with locally the best soils the best general production results;

(3) the voivodship of Katowice with the western part of the voivodship of Cracow and some poviats of the voivodship of Opole highly industrialized and urbanized, with large and increasing number of very small farms or even housesteads cultivated by industrial workers mainly for their own needs, gradually turning into typical suburban agricultural production (vegetables and potatoes, pigs, cattle for dairies);

(4) central area, i.e. the northern part of the voivodship of Łódź and the southern part of the voivodship of Warsaw (the Warsaw Metropolitan Area), a typical peasant economy but with productivity above the average level and with highly specialized market production in Warsaw area, particularly of soft fruits and vegetables;

(5) central-eastern area, i.e. the remaining part of the voivodship of Warsaw, the major part of the voivodship of Białystok and some north-eastern poviats of the voivodship of Lublin with extremely fragmented, so-called "chequerboard" peasant farms characterized by low productivity, hampered in the development of commercial production by poorly developed infrastructure of the whole area as well as by the obsolete methods of cultivation;

(6) central and east-southern area including the voivodships of Kielce and Rzeszów, major part of the voivodship of Lublin and a part of the voivodships of Cracow and Łódź, with particularly high densities of agricultural population (reaching the maximum in the Rzeszów area), i.e. still possessing a large surplus of manpower, with prevailing small peasant farms and strong fragmentation of fields, with certain growing specialization in production, especially of industrial plants.

Generally speaking, the regional differences in agriculture are strongly reflected in regional structure and regional division. Therefore the question arises whether they are the cause or the result of the emergence of economic regions. Polish experience indicates that when agricultural production is dynamic and growing, its region-formative influence is important, otherwise its role is completely passive. In some cases, e.g. in the metropolitan and strongly urbanized areas, the development of a certain type of agricultural production and economy is the derivative although very characteristic for these economic regions.

(b) DISTRIBUTION OF INDUSTRY

The research into the distribution of industry and of the industrial location belongs to better developed sections of Polish economic geography. This is due mainly to the efforts of S. Leszczycki and his pupils from the Department of Industrial Geography, but also to the

works of F. Barciński, A. Wrzosek and L. Straszewicz representing other centres of geographical research.

First of all several industrial regions or districts are well developed and clearly defined: (1) the industrial conurbation of Upper Silesia (so-called G.O.P., i.e. Industrial District of Upper Silesia) surrounded by its dispersal zone with its several coal basins, iron, zinc and lead mining areas, large and numerous metallurgical and chemical plants, reaching as far as Cracow in the East and Kędzierzyn in the West, and extending from Częstochowa and Zawiercie in the North to Bielsko-Biała and Raciborz in the South; (2) the mining and industrial districts of the Sudety and Holy Cross Mountains, with its numerous mineral resources, rather limited in size but extremely variegated and the corresponding processing and other industrial plants; (3) the metropolitan area of Warsaw with mostly market orientated industries being typical for a big city; (4) the industrial district of Łódź with a majority of mostly antiquated textile and more modern chemical plants; (5) the shipbuilding complexes of Gdańsk with Gdynia at the mouth of the Vistula River and of Szczecin at the Odra estuary; (6) finally, the large urban industrial agglomerations of Wrocław and Poznań. It is a subject for discussion whether the industrial plants in the remaining parts of the country form any proper industrial areas. In fact, S. Leszczycki pointed out to the differences between the areas: industrial, industrialized and being industrialized. In the last ones industrialization is not so much characterized by the intensity of its development as by its dynamic character and its role in the economic activation of the area. The processes of investing and construction are even more important than industrial production itself. The methods and typology of industrial regionalization, as proposed by S. Leszczycki and his collaborators, are interesting although they are based on simple statistical data, without taking into account, at least in the quantitative analysis, the problems of relations between local and regional industrial works, i.e. of the areal integration into industrial complexes. Their value for the economic regionalization is obvious as the proposed types of industrial areas are also characterized by the different role played by each of them in the economic regionalization. The map showing the present industrialization of Poland gives, therefore, a clear picture of this element in its regional structure.

(c) PATTERN OF URBANIZATION

In Poland, as well as in other countries, the pattern of urbanization is not strictly parallel to the distribution of industries and industrial population although it is strongly correlated to them. In the same time, it reflects the past and the present structure and distribution of services of all kinds. As it is also influenced by the distribution of agricultural production and population, it gives a good overall picture of the local and regional economies and their structure. The present situation and the recent changes in urbanization in Poland have been summed up and described in detail in an extensive article by K. D z i e w o Ń s k i. Here we shall only deal with the final results of his study.

The pattern of urbanization in present-day Poland is extremely variegated. Many kinds of urban network and different types of urbanization are represented, from the big industrial conurbation, a metropo-

litan city to small market towns and industrial settlements: from networks in which urban population concentrated in a few larger towns, remaining part being scattered in the underdeveloped small towns, villages, and hamlets — to networks devoid of larger urban centres with urban population living in — at the best — middle-size towns and with overpopulated rural areas. Let us enumerate the principal types of urban centres more systematically: (1) the great industrial conurbation of Upper Silesia in which three zones of growth are clearly distinguished — the overcrowded core area with rather limited population growth, the inner belt or ring of the strongest growth composed of numerous mining centres and industrial towns, settlements and also satellites and dormitory suburban settlements of the core area, finally the outer zone characterized by the quick industrial growth of main urban centres the most important of them performing the functions of regional or at least subregional centres; (2) the metropolitan area of Warsaw in which so far only two characteristic zones may be distinguished: the city proper, just emerging from the era of post-war reconstruction, and the fast although haphazard developing suburban area, the outer zone only recently showing certain signs of quickened growth; (3) the industrial district of Łódź inhibited in growth by the technological changes, a loose cluster round the dominating town, of other industrial towns and villages, with only slightly developed central area of the “city” and practically without suburban zone; (4) three large provincial cities (Cracow, Wrocław, Poznań) and two urban agglomerations, based on the seaports (Gdańsk and Gdynia, Szczecin), characterized by a rather quick growth, with suburban zones in the first stages of development; out of them Cracow, independently from its proper regional and provincial functions, grows already as a part of the Upper-Silesian conurbation; (5) several larger towns which in near future may grow into new urban complexes of the former kind, such as: Bydgoszcz, Lublin, Częstochowa, Białystok; (6) middle-size and smaller towns, usually administrative and/or industrial regional and local centres; (7) a whole series of various agricultural settlements from market towns to hamlets and even completely dispersed farmsteads. As far as the general pattern of settlements is concerned a network of central places of varying size and hierarchy prevails practically everywhere with the exception of the industrial region of Upper Silesia (including in its centre the conurbation) and of the Metropolitan Area of Warsaw. Generally speaking, three basic zones of different type of network and varying dynamics of growth may be distinguished: (1) the western half of Poland with fully developed, dense and balanced network of towns in which all types are harmoniously represented and growing at practically the same rate, or with smaller towns growing even faster; this area may be subdivided into two: the quickly developing western and northern voivodships and the central ones (of Poznań, Bydgoszcz and Łódź) with somewhat slowed down development; (2) the north-eastern part (the voivodships of Warsaw, Olsztyn, Białystok and Lublin) with not so dense urban network and with urban growth concentrated mostly in the main regional urban centre; (3) the south-eastern part (the voivodships of Kielce, Rzeszów and the eastern part of the voivodship of Cracow) with a rather dense network of small and middle-size towns but without dominant urban centres and with a comparatively quicker growth of numerous regional

and subregional centres and industrial towns. These differences are connected both with different roads of economic development in the past and with the present state of disparities in the communal and other services.

(d) INTENSITY OF SOCIO-ECONOMIC LIFE AND DEVELOPMENT

In the economic pattern of Poland the disparities in the intensity of socio-economic life play an important role at present. It is only recently that we have been able to discuss it on the quantitative basis. By the effort of the Committee of Space Economy and Regional Planning of the Polish Academy of Sciences and of the Central Statistical Office regional data on the gross national product and income, both as produced and consumed, have been collected for several years. The divergences in the average indices of national income produced per capita in various voivodships are large, the lowest figure being that of the voivodship of Białystok, the highest naturally that for Katowice, i.e. Upper Silesia. However, as a result of central planning and economic policies in the distribution of national income, this difference was well diminished. Further extenuation was obtained by the secondary division of national income, resulting from the services, the less developed but more attractive for tourists areas rendered to the numerous urban and industrial population from more developed areas. In fact, it would be easier and more correct to express the regional differences in economic development in terms of personal incomes of the population but there are serious difficulties in gathering full sets of such data.

III. FUNCTIONAL RELATIONS AND THE RESULTING REGIONAL STRUCTURE OF POLAND

The elements of the regional structure of Poland discussed so far seem to be only a loose collection of data and information. It is only with the study of interregional relations and connections that the social territorial division of labour becomes visible and we gain a real understanding of the mutual importance of single factors and elements and a clear concept of the whole socio-economic space and its divisions. The study of these relations is so far not very much developed and is somewhat fragmentary. The most interesting work is by Z. Chojnicki concerning the rail traffic flows between the voivodships. Its importance from our point of view is, however, reduced because the author, having only limited statistical data at his disposal, discussed these interregional flows only in terms of tonnage and not of money value. This study revealed that in terms of coal and steel (accounting for over 50% of all rail-goods traffic) Poland is one region, its economic centre being Upper Silesia. It is only recently that with the use of lignite (brown coal) for production of electric power, the dependence of the whole country on the Upper Silesian coal has begun substantially to diminish. From the point of view of the national economy this phenomenon is quite acceptable — the largest real distances from the coal mining areas being just within the economically feasible limits of transport. Only within this

primary transport region some additional subareas can be distinguished. For instance, within the core area of industrial production conceived on a national scale there are — outside of the Upper Silesian conurbation — two subcentres: Wrocław strongly related to the north-western part of the whole country and Cracow related to the south-eastern part. Moreover, there are several subregions characterized by more intensive exchange of some products within them than with other areas. To these belong the north-eastern part of the country with Warsaw as its main economic centre and the west-northern part with Poznań and the main seaports.

Other studies such as by A. Wróbel, dealing with zones of passenger traffic (with travelling to work excluded) and with the organization of whole-sale trade by K. Dziewoński and E. Iwanicka on the place of residence of the university students — clearly depict the various zones of cultural, social and economic influence of major and smaller regional urban centres. Another study just published by M. I. Mileska, dealing with the tourist regionalization of Poland and applying some original research methods and typology, gives an interesting picture of specific economic and social problems against the background of geographical environment, capital equipment and their present use.

Further studies, such as of total transport regions, are under way but their results have not been known as yet.

On the basis of our present knowledge the following picture of regional structure and economic regions in Poland can be drawn:

1. At present Poland is one, clearly defined, separate economic region. This is nothing extraordinary, as the independent states because of their legal, economic and social organization usually are separate economic regions. But in the case of Poland, the size of the country and the number of its population, the character of its natural resources and, last but not least, its political, social and economic history during and after the war, involving great migration and mix up of people of various classes and regions, make its integration into one economic unit or region much stronger and more advanced than it usually occurs in other states. This integration is something new in the economic and social geography of this part of Europe and for this reason it should be studied and is stressed in this paper. Warsaw is, no doubt, its political, administrative and cultural centre, but its economic heart is in Upper Silesia.

2. Within the boundaries of Poland there is only one, big economic region, fully integrated on the functional basis — the Industrial Region of Upper Silesia and Cracow. As we have already described it in detail several times, its character will not be discussed once more in this place. Its boundaries may be an object of differences of opinion and of further research but its existence and its scope of activity cannot be put in doubt.

3. Next in size are seventeen administrative regions — the voivodships which within the present political and economic structure and organization are or are becoming more and more distinct economic regions. This is due to the concentration of the administration for the growing part of the nationalized industries, transport, commerce and services in the hands of regional and /or local authorities. All voivodships possess the character of nodal regions (main urban centre, network of com-

munications, regional administration and services) although in three cases (the voivodships of Kielce, Koszalin and Zielona Góra) there is a certain dualism weakening the regional unity and expressed in the existence of two main urban centres, the smaller of which is, in each case, the regional capital, the larger one being an important industrial town.

4. All other areal units of which it may be said that they are integrated into economic regions, are smaller than the voivodships. They are always characterized by the uniformity of the dominant economic element and usually represent a definite type of regional and/or local economy, fulfilling a specific function within the larger community, regional or national. Here are included the Warsaw Metropolitan Area, several mining and industrial districts such as those around Łódź or Wałbrzych, in the Kamienna Valley or in the Subcarpathian midmountain plain, as well as tourist regions growing in number, such as the Sudety, or Tatra and Pieniny Mountains, the Pomeranian, Cassubian or Masurian Lakelands, the Baltic Coast subdivided into several parts, and others.

5. As far as the smallest regional units are concerned they have not been very well studied as yet. The majority of authors present schematic systems representing often rather their wishful thinking than a careful analysis of reality. The recent study by M. Chilczuk indicates that their structure is more complex and varied than it is usually assumed. Anyhow, in this case it is the organization of production and services which forms the basis for regional structure. It results from Chilczuk's study that there are specific larger villages which form the lowest type of central place, knitting all others together into some kind of areal unity. It is interesting that their number (about 2.5 thousands) is smaller than the number of the lowest existing administrative units of gromada (in the beginning of 1961 — 5245). Those villages are grouped around small, traditional market towns (about 800 in number) and these, in turn, around somewhat larger towns seats of powiat authorities (there are at present 317 rural powiats). Several examples of such structure were published by L. Kosiński who based himself on the field studies conducted by the Department of Urban Geography at the Institute of Geography. These smallest elements of regional structure and economic regions are at present rather fluent, partly determined and partly determining administrative divisions and economic organization, in most cases consistent with these elements of social superstructure, but quite often essentially different.

IV. REGIONAL SOCIO-ECONOMIC STRUCTURE AND SOME OTHER REGIONAL DIVISIONS

To conclude this report the correspondence of regional structure and economic regions with some other regional divisions of special importance for the socio-economic life and development is to be discussed. To these belong the administrative and planning divisions, as well as the areal divisions for which statistical data are compiled and published.

The general administrative divisions of Poland were drastically changed several times, in the post-war years. In fact, many research workers strongly object to continuous changes, which make comparisons in time very difficult and sometimes even impossible. However, from our point of view, it is interesting to observe the development of criteria and reasons behind all the changes. They well reflect the importance of research into the regional structure of the country. Polish administrative organization which originally involved fourfold division (voivodship, powiat, gmina, gromada) was, in 1954, simplified into threefold (increased in size gromadas taking place of the less numerous and larger gminas). In this reform of basic, i.e. the smallest administrative units problems of future organization of agricultural production were the dominant criteria. In the same time, the number of rural powiats was increased and their boundaries sometimes very radically changed. In this case, the criteria of the reform were the number of inhabitants, the area of arable land, the accessibility to the urban administrative centre of the powiat in terms both of the road network and of the time distance from the most remote settlements. However, the division into voivodships, based mainly on pre-war boundaries, modified in 1950 to make good the largest disparities (creation of three new voivodships, change of the boundaries of Warsaw, in the Upper Silesian Coal Basin and in several other cases) remained — outside local correction of boundaries — unchanged. Since then a continuous process of diminishing the number of gromadas and increasing their size (from 8790 in 1955 to 5245 in 1962) has been going on. The main reason is that with the general decentralization, i.e. with the extending powers of local authorities, the economic strength of these smallest administrative units is becoming more and more important. In spite of certain pressure to increase the economic strength of other administrative units, i.e. the powiats and the voivodships, the present division is considered to be adequate and to be more or less consistent with the regional structure. The area where this consistency is the most questioned is in the Upper Silesian and Cracow area where the size of the economic region is so large that it covers the territories of three voivodships. The common economic problems have not their counterpart in the administrative organization and it is rather difficult to find proper internal economic divisions corresponding with the efficient administrative divisions into voivodships. The matter is further complicated by certain traditional cultural and social territorial divisions and loyalties.

The whole organization of planning, both economic and physical, is at present integrated with the administrative divisions. But with the long-term, so-called perspective planning, this creates serious difficulties. In most cases there are vast differences and even discordances between the present and the planned-future patterns of distribution, regional structure and economic regions, especially in the delimitation of these last ones. In many cases, data should be collected and compared in terms of the future and not of the past. The whole organization of planning should be and is often formed in terms of the future needs. As a result the regional planning divisions have to be sometimes different from the administrative ones as the criteria for their delimitation are different and, therefore, their boundaries will, in many cases, not coincide with the administrative ones. In the delimitation of planning divisions,

in particular of planned ones, the knowledge of the present regional structure and existing economic regions, together with the trends of coming changes, are of particular importance. In fact, no scheme for the future development may be considered realistic without being based on a close study of these problems. Polish experience indicates this very distinctly and planning organization, although based on the administrative division, provides other forms more closely connected with the present and future regional structure.

The last problem to be raised is the relation between the regional structure and the areal divisions for the compilation of statistical data. These are usually collected by the administrative units of various levels. But for publication and for compilation of long time-series of data some different simpler or more complex divisions are necessary. These may group smaller administrative units into larger ones, or split the larger into smaller. There is a tendency to make such divisions on the basis of their similarity which is either expressed in the uniformity of the type of economy or in their integration around well-defined node of economic activity. In the last years, a long discussion has been going on in Poland about the division of the country into so-called "hundred units" for the more detailed analysis than it is possible, on the basis of 22 units on the voivodship level and, at the same time, easier to handle than with 391 units on the poviats level (317 rural and 74 urban poviats). Among several schemes proposed, these of A. Kukliński expressing views and needs of the scientists and of W. Kawalec, presenting the planner's point of view should be mentioned.

Similarly the division of Poland into so-called "great regions" (grouping several voivodships together) both for research, planning and didactic use was widely discussed by many authors in Poland and even abroad (K. Secomski, K. Dziewoński, S. Berezowski, A. Wróbel, B. Rychłowski, A. K. Timashew). The value of these proposals may be properly estimated only on the basis of a thorough knowledge of regional structure and its development.

With these divisions for research purposes one methodical problem should finally be mentioned — the problem of correct and improved methods of aggregation and disaggregation of data, of their transposition into varying areal divisions. Perhaps if some methods, using computers and other calculating machines should be applied, that would bring about a great advance in all our studies on economic regionalization.

Institute of Geography
Polish Academy of Sciences

METHODS OF RESEARCH IN ECONOMIC REGIONALIZATION ¹

CHAUNCY D. HARRIS

Geography, from its very beginning as a field of study, has been concerned with regions containing parts of the earth's surface which have certain properties in common — properties that are of significance to some aspect of geographic inquiry. We are here concerned with only a part of the universe of regions, economic regions, though all factors that have a bearing on economic regions may properly be considered.

The term region is used with a great variety of meanings. Often a region is arbitrarily defined by an author, or some other agency, as a segment of the earth's surface to be included in a particular study, article, or monograph. Our interest, however, is with regions which have some significant basis for delimitation. Such regions fall into two great families. (1) uniform regions or homogeneous regions, which are characterized by essential similarity of some economic characteristic or variable, such as type of production, and (2) regions of organization, or nodal regions, which derive their unity from contact or movement usually through or with a central point. For example, a dairy belt is a uniform region in which the economy is dominated by a form of agricultural production specializing in milk, whatever its ultimate form (fresh milk, condensed milk, butter, or cheese) or whatever its destination in marketing. The milkshed of an individual city, from which fresh bulk milk moves to a single market, is in contrast a region of organization with its focus on the city. Philosophically, of course, each type of region — the arbitrarily defined, the uniform, and the organizational — has a single basis; locations within the region all have properties in

¹ The original draft of this paper was confined to nonsocialist countries in the expectation that a companion paper would discuss methods of research in socialist countries. In the absence of such a paper, some material has been added for the countries of East-Central and Southeastern Europe, but such coverage is doubtless incomplete, and the Soviet Union is omitted altogether because a special report is being prepared for that country.

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common. But we prefer to add here the additional specification of the nature of these properties (arbitrariness, similarity of properties found at the locations, or connections with other locations within the region). Also, if we think of economic regions as reflecting certain spatial aspects of economic systems, an additional common basis emerges; uniform regions summarize what-is-where (the static view of an economic system), whereas organizational regions summarize what-connects-to-what (the functional view). The second of these views subsumes the first, and both are desiderata if a third level of viewing, that of spatial systems changing through time is the one which is of major concern.

Uniform regions include both regions characterized by uniformity of production (agriculture, manufacturing) and uniformity of consumption or consumption potential (levels-of-living regions) or even of social characteristics as proposed by Wolfgang Hartke (1959). Similarly regions of organization may include both market-oriented activities (such as retail or wholesale trade) or production-oriented activities (fresh milk, fruit, or vegetables for a nearby urban market). Nevertheless, most of the uniform regions which have been studied have been those of production, and most of the studies of regions of organization have been concerned with market areas served through central places. Agricultural and mineral raw materials are shipped from a large number of dispersed points and do not originally pass through central-places, whereas a high percentage of consumer-type manufactured goods move to markets through central-place distribution points.

E. P. Weeks and Z. W. Sametz (Canada, Department of Defence Production, 1953, 1954) made a full investigation of the theoretical framework which might provide the basis for a division of Canada into economic regions but ultimately set the boundaries for more than 500 economic regions on the basis of a composite of diverse elements, the critical factor varying from region to region. The so-called *SFPM* formulation included both production and marketing factors and elements of both uniform regions and nodal regions. (*S*, structural factors, such as population structure; *F* functional factors, such as transportation; *P*, production factors; and *M*, marketing factors.)

Somewhat similar was the division of the Netherlands in 1941 into economic-geographic regions which were homogeneous in farming and industrial structure but also tributary to an urban place with a central function (Netherlands, 1941). Thus, a matrix of regions of organization was placed over a mosaic of uniform regions to establish 186 regions useful for economic structure or market analysis (H. Ferro, 1953).

From the viewpoint of practical economic regions effectively meeting the needs of actual administration or analysis of problems, the economic regions just described for Canada and the Netherlands have proved successful and important. However, the methods of research utilized in the analysis of economic regions, the subject of this paper, differ so substantially for uniform regions and for regions of organization that they will be discussed separately (cf. Erich Otremba, 1959; Étienne Juillard, 1952, Svetozar Ilesić, 1962; and Umberto Toschi, 1963).

Functional classifications of cities suggest different types of relationships which urban agglomerations may have to one another and to economic regions (Chauncy D. Harris, 1943, Howard J. Nelson, 1955,

and Gunnar Alexandersson, 1956, for the United States; H. J. Keuning, 1950, for the Netherlands; L. Kosiński, 1958, for Poland; William William-Olsson for Sweden, 1946, and Europe, 1953; C. A. Moser and Wolf Scott, 1961, for Britain; L. L. Pownall, 1953, for New Zealand; Louis Trotier 1959, for Quebec, Canada; K. A. Boesler, 1960, for Thüringen, Germany; Amrit Lal, 1959, and K. N. Singh, 1959, for India; and Y. Ogasawara, 1950, for Japan). Thus, manufacturing cities are likely to cluster in a manufacturing belt, a type of uniform region, and to have weak general service functions, if any, for surrounding territory. Trade centers with central functions are likely to be widely spaced, not forming in themselves the dominant feature of the economy of a uniform region, but having strong central-place functions with respect to tributary areas or regions of organization.

Harris and Ullman (1945) distinguished cities as (1) central places, (2) transport cities, and (3) specialized-function cities. The first category fits into a hierarchical structure of city regions, and the third category is likely to be a characteristic element in a uniform region sharing the economic structure of the city.

One type of region, a river basin, has sometimes been used for co-ordinated comprehensive research in and planning of economic development associated with hydroelectric power, navigation, irrigation, recreation, and agricultural and industrial growth as an interrelated complex; the Tennessee Valley Authority of the United States is a good example (John R. P. Friedmann, 1955).

I. UNIFORM REGIONS

A. METHODS OF STUDY AND DEFINITION

Uniform regions may be single factor or multiple-factor regions. A single factor region, in particular, may be defined by a single criterion, such as production of wheat, which is used to delimit the various wheat belts of the world. Often a region may be defined in terms of the variance-covariance approach in which the spatial association or similarity of two or more distributions are used in a definition.

Visual comparison. D. Whittlesey (1954) suggested a visual comparison of distributions for such purposes. In Norton Ginsburg's *Atlas of Economic Development* (1961), plate 2, "Gross national product per capita", is to be visually compared with a series of other maps to suggest covariance of relevant variables or how the distribution of one item compares with the distribution of others. Such visual comparisons of distributions or areal variations of types of production or other economic characteristics are used in U. S. National Resources Committee. *Regional Factors in National Planning* (1935), H. W. Odum, *Southern Regions of the United States* (1936), and Harvey S. Perloff, et al, *Regions, Resources, and Economic Growth* (1960).

Field mapping with practical codes. Vernor C. Finch (1933) in detailed field mapping used a fractional code which included in a single complex fraction many relevant and interrelated physical and

human factors. By use of the coded fraction, maps could be drawn of any single element or any combination of elements.

Air photographs. Uniform regions are particularly adaptable to study by means of air photographs. Indeed a whole technique known as photo interpretation keys has as its aim the recognition of areas of essential homogeneity or similarity. This method is especially useful in the analysis of economic activities closely associated with physical resources and covering large areas, such as in forest or agricultural region. The technique is also adaptable to the study of intricate subdivisions of uniform regions, even in inaccessible places, and to the study of changes over time.

Statistical data. Areas of essentially homogeneous economic structure have long been recognized by official statistical organs. Such areas have been defined on the basis of percentage of occupied or employed persons in agriculture, industry, or other activities. Resulting maps have been published, often as a part of a census report. Among the examples are those of censuses in the Netherlands, Germany, and the United States, and in atlases in Belgium (Atlas du Survey National, plates 15, 17, 19). Bruno Nice has classified the provinces of Italy on the basis of the occupational structure of the population in primary, secondary, and tertiary activities (Nice, 1961).

If the economically homogeneous areas have a high degree of areal cohesion (i.e., do not have important areal discontinuities) and have fairly regular boundaries, they may usefully be considered as uniform economic regions (J. Ch. W. Verstege, 1957). The Dutch economic geographer H. Blink played a key role in the division of the Netherlands into 36 such economic-geographic regions recognized by the Chambers of Commerce and Industries in 1920 (H. Blink, 1924).

The size and boundaries of the units utilized in gathering statistical data may pose problems, especially if units are too large (such as states in the United States) or if the boundaries of these units do not correspond with geographically significant boundaries as Benoît Brouillette (1959) has pointed out in Canada.

E. Alanís Patiño (1946) using the 1930 Mexican census divided the country into 344 districts, 44 regions, and 8 economic zones; the economic zones have since been utilized for the presentation of regional demographic and economic census data. Further experiments in the division of Mexico into economic regions have continued (Mexico, 1959; F. Zamora, 1959).

Donald J. Bogue (1959) made a significant advance in working out a procedure for establishing a complete set of multifactor uniform regions, or socio-economic regions for the United States. The most massive assemblage of data for such regions is the large monograph by Donald J. Bogue and Calvin L. Beale (1961). The country was divided into areas with nearly homogeneous livelihood and socio-economic characteristics on the basis of 83 variables of population, industry, and income, and 75 agricultural characteristics. A hierarchy of economic regions was recognized with four orders of decreasing size but increasing homogeneity: 5 economic provinces, 13 economic regions, 121 economic subregions, and 506 state economic areas.

Joseph E. Schwartzberg (1962) has experimented in India with different methods of recognizing and mapping regions characterized by similar levels of economic development.

Combinations of methods. The most thorough establishment of a set of uniform economic-geographic regions for a country has been carried out in the Federal Republic of Germany (Meynen, Hottes, and Klöpfer, all 1955; Otremba, 1957; Schneider, 1962). On the basis of field observation, study of the written textual literature, statistical compilations of about 40 items of economic and social structure, and the use of maps, 30 members of a working group divided the country into 382 basic units and 115 economic districts. These areas were plotted on 28 map sheets at a scale of 1:300,000 and on a summary map of 1:1,000,000.

Angel Bassols Batalla and collaborators in the National School of Economics of the National University of Mexico studied Mexican and foreign methods, concepts, and theories, attempting to combine statistical, cartographic, economic development and other kinds of analysis with detailed field investigations in order to arrive at more accurate and significant divisions for Mexico.

Formal statistical analysis. In recent years formal statistical analysis has been applied to the study of the association or relationship among economic or social characteristics or natural conditions that vary over the earth's surface. (Harold H. McCarty, 1956, 1961; Arthur H. Robinson and Reid A. Bryson, 1957; J. Ross Mackay, 1959; Otis Dudley Duncan et al, 1961). First is the measurement of dependence of the spatial pattern of a given variable by multiple regression techniques as used by Arthur H. Robinson (1962), or examination of the validity of a proposed regionalization by using discriminant functions as in Table VIII-5 in Norton Ginsburg's Atlas of Economic Development. Secondly, is the analysis of interdependence of many variables in space involving factor analysis, usually using the method of principal components as in Margaret J. Hagood (1943), V. L. S. Prakasa Rao (1953), Brian J. L. Berry (1961a), and John H. Thompson and others (1962). Finally, the very important and indeed crucial achievement is the grouping of multivariate observations to form regions by Richard Stone (1960) and Brian J. L. Berry (1961b). This last step marks a major advance in the utilization of statistical techniques to evaluate, confirm, or independently establish regional boundaries with reference to the criteria found to be significant in factor analysis. Chi-square tests have been used by Leonard Zöbler (1957, 1958) to measure the validity of regional boundaries.

B. AGRICULTURAL REGIONS OR TYPES-OF-FARMING REGIONS

Numerous studies have also been made of the resource base of agriculture or of natural conditions affecting agricultural production; they are of interest here only if they contribute directly to the recognition, delimitation, or characterization of agricultural regions of homogeneous characteristics.

W. C. H. Staring (1808—1878) divided the Netherlands into agricultural regions which bore a close resemblance to soil regions and which were used for many years both for annual reports on agriculture and for the presentation of agricultural statistics (S. Korteweg, 1951). M. Vahl (1942) and V. Hansen (1943) in Denmark

delimited uniform regions using multiple criteria but emphasizing geomorphology. Aage H. Kamp (1959) divided Denmark into agricultural regions on the basis of various indicators of soil fertility (such as crop yields or the distribution of crops requiring high fertility). Similarly, Axel Sømme (1949, 1954) utilized a division of Norway into agricultural regions made by the Central Bureau of Statistics on the basis of homogeneous natural conditions for agriculture.

Hundreds of studies have been concerned with the mapping, description, and analysis of individual crops or elements of agricultural production, but unless these are combined in some significant way into agricultural regions, they are not considered in this discussion.

Early work on uniform economic regions was carried out in Germany. E. Hahn (1892) recognized the areal spread of economic systems. Th. H. Engelbrecht in four papers widely spaced in time (1899, 1914, 1928 and 1930) attempted classifications of agricultural regions successively of areas outside the tropics, of India, of Germany, and of the entire earth. From a methodological point of view the most influential of these works was his study of India (1914) based on statistical data from the census of India; this was a pioneer contribution to the quantitative recognition and delimitation of uniform economic regions in a predominantly agricultural country. W. Busch (1936) with concepts derived from Theodor Brinkmann applied in Germany quantitative methods to the classification of types-of-farming areas; he utilized a comparison of the areas in various types of crops but weighted the areas for intensity; thus each hectare of potatoes was considered equivalent to two hectares of grains or four hectares of permanent grass in determining the predominant crops. Max Rolfes (1948) retained the essential features of this system but further refined it.

Similar methods have been used as early as 1932 by J. Ernst in the delimitation of agricultural regions for Eastern Poland and by F. Dziezic (1939) for all Poland. J. Fierich (1957) was the first to use for the same purpose the taxonomic method applied originally in anthropological studies by J. Czekanowski.

Tivadar Bernát and György Enyedi in a detailed monographic investigation of crops in Hungary proposed a classification of agricultural regions based on the relative importance of leading crops in the structure of gross agricultural output by value (Bernát and Enyedi, 1961; Enyedi, 1961).

Early American work recognized broad agricultural provinces (Middleton Smith, O. E. Baker and R. G. Hainsworth, 1916), then somewhat more refined agricultural regions (O. E. Baker, 1921), and culminated in intense work in the late 1920's and 1930's.

One stream of studies, developed mainly by geographers, defines agricultural regions on the basis of the predominant crop or various crop-and-livestock combinations. It found expression in the publication in *Economic Geography* of a great series of articles on the agricultural regions of the world by continents: of North America (O. E. Baker 1926—1933), Europe (Olaf Jonasson, 1925—1926). South America (Clarence F. Jones, 1928—1930), Australia (Griffith Taylor, 1930), Asia (Samuel Van Valkenburg, 1931—1936), and Africa (Homer L. Shantz, 1940—1943). Derwent Whittlesey (1936) essayed a world-wide classification based on the characteristics of the agricultural

systems themselves, not on soil, climate, or external elements. His paper represented a quest for the application of comparable quantitative objective data. Richard Hartshorne and Samuel N. Dickenson (1935) attempted, less successfully, to distinguish the agricultural regions of Europe and North America on a uniform statistical basis. Hartshorne (1935) applied these methods to the delimitation of the dairy areas of the United States. Of great methodological interest was experimentation by Wellington D. Jones (1930) with uniform statistical criteria, especially critical rations between various elements; he selected, utilized, and mapped significant elements of the crop-livestock association in order to recognize and delimit agricultural types and regions. John C. Weaver (1954, 1956) elaborated statistical analyses of crop-combination regions.

Another series of studies of types-of-farming areas bases classification on the proportion of farm income contributed by various farm products. A major development of this method occurred about 1930 in the United States and resulted in a highly refined and detailed map of types of farming in the United States (U. S. Bureau of the Census in cooperation with the U. S. Bureau of Agricultural Economics, 1933), textual analysis and description of these types of farms (Foster F. Elliot, 1933), in three large volumes of data (U. S. Bureau of the Census). Fifteenth Decennial Census: 1930 (Agriculture, volume 3); all these were based on the 1930 United States Census which gathered information on income by categories for each farm in the United States. During this same period detailed monographs on types-of-farming regions were published for 35 states in the United States by agricultural experiment stations in each state. These are all listed in a further refinement of generalized types of farming in the United States (US Bureau of Agricultural Economics, 1950).

The land utilization surveys carried forward with such diligence and success by L. Dudley Stamp and his collaborators in Britain and throughout the world make a major contribution to the recognition of uniform regions of land use. Since these studies are co-ordinated and stimulated by a sister commission of the International Geographical Union, they will not be discussed here. William Van Royen (1954) in a series of maps uses the terms land use and agricultural regions as nearly synonymous.

C. MANUFACTURING REGIONS

Economic regions in which manufacturing plays a leading role have long been recognized in many countries by mapping the proportion which industrial employment forms of the total occupied labor force. Such maps are included in reports of statistical offices and in various atlases.

The more explicit study of manufacturing regions in terms of criteria of recognition or of regional subdivision have been made for Belgium by J. A. Sporcck (1957, 1961), for Poland by S. Leszczycki (1960), and more particularly for the United States by Sten de Geer (1927) on the basis of number of wage earners in industry, Helen M. Strong (1937) on the basis of power, Alfred J. Wright (1938) on the basis of value added in manufacturing (value of finished products less values of materials used), and Clarence F. Jones (1938) by

<http://rcin.org.pl>

a combination of employment, power, and value added in manufacturing. Some utilized data for cities alone, which omitted much rural industry; others used rural and urban which posed the problem of the differentiation of types of manufacturing serving only local needs from those serving broader markets and thereby earning income for the region in question. R. Hartshorne (1936) attacked the problem by assuming that ten per cent of the total population of a city was engaged in local industrial activities.

Substantial progress has been achieved then on the differentiation of the basic and nonbasic components of employment, the "basic" being those activities which produce goods beyond local needs and thus are available for inter-regional exchange and the purchase of goods or services from other regions (John W. Alexander, 1954, Victor Roterus and Wesley Calef, 1955, Charles M. Tiebout, 1956, Gunnar Alexanderson, 1956, Richard B. Andrews, 1953—1956, Edward L. Ullman and Michael F. Dacey, 1962, Netherlands, 1959). These studies lead naturally into a consideration of complex interchange among regions and methods of measuring and evaluating such movements.

D. PROBLEM AREAS

Nearly every country has areas which have not participated fully in the main stream of economic development by virtue of isolation, declining resources, changing technology, or other factors. Such problem areas of unemployment or underdevelopment have been the object of governmental policies of investment and economic development. Methods of research in the recognition or delimitation of such regions involve analysis of factors such as the level, structure and continuity of unemployment (for depressed areas or areas of chronic unemployment in Great Britain and the United States for example), or of levels of income or other indices of social and economic conditions (often low for relatively inaccessible segments of a country).

A pioneer American attempt to recognize major economic regions on the basis of livelihood structure and to utilize such regions in planning government investment in public works was made by Charles C. Colby and Francis J. Marschner (US National Resources Planning Board, 1943). Within each region employment patterns were studied in relationship to both natural resources and the activities and institutions of the region. Recognition, delimitation, and description of the 235 economic regions was based on long experience, accumulated knowledge, and judgement of the authors with respect to characteristics of the existing economy or conditions affecting possibilities for future development.

II. REGIONS OF ORGANIZATION

The functional relations of cities to their tributary areas or hinterlands have been studied by many methods and in many aspects. One aspect of such studies may be an analysis of the sources of supply of milk, fresh fruit and vegetables, potatoes, grain, meat, and fish, or of labor

commuting into the city. Another aspect is the area tributary to the city for retail trade, wholesale trade, financial services, newspaper circulation, radio broadcasting, telephone services, education, hospitals, museum, professional and medical services, offices, recreation, postal services, transportation, religion, or administration.

Among such studies worthy of particular note are those of Maria Schilling (1935), Georg Kühne (1937), Walter Heine (1938), Peter Schöller (1953), and a special issue of *Raumforschung und Raumordnung* (1956) in Germany; Georges Chabot (1931, 1962), Michel Rochefort (1957), and Huguette Vivian (1959) in France; Arthur E. Smailes (1947) in England, J. M. Casas Torres and associates in Spain (Mikesell, 1960), Oiva Tuominen (1949) in Finland; and Robert E. Dickinson (1934), Chauncy D. Harris (1940), and Howard L. Green (1955) in the United States. Robert E. Dickinson in his *City Region and Regionalism* (1947) summarizes a large number of his own studies and examines town-country relationships with examples from many countries. The hinterlands of ports has long been of interest and was the subject of a book by A. J. Sargent (1938).

Field interviewing, observation, or questionnaires on trade or service areas. Field work in interviewing or observations may be based either on (1) study of the points rendering service or (2) the users of such services in the tributary area. The first method involves, for example, interviewing a retail store as to the area served by it, or examining the list of customers for a store, a bank, or a professional office. In Denmark the Department of Statistics (1960) interviewed retail shopkeepers in several types of trade about their service areas. P. Eberhardt and A. Wróbel (1963) defined the regions of the wholesale trade centers in Poland on the basis of the questionnaire directed to the main trade organizations. The second method may involve asking in the field where individuals go for particular goods or services and drawing lines at points of equal movement to two competitive centers for a particular activity. Questionnaires may be used. In Japan, Y. Watanabe (1958, 1960) used questionnaires on the buying habits for kinds of commodities selected to indicate trade areas of various grades in a hierarchical system of trade centres. Thus, Fumio Takano (1963) distributed 90,000 sheets among a sample of one tenth of the households in the area tributary to Nagoya, Japan. Sven Dahl (1949) utilized local school teachers as source of information in Sweden. Read (1938), in a study of the retail trade area of Elgin, Illinois, used a combination of methods including (1) report by sales clerks for all sales in selected stores for a sample week, (2) post card questionnaires to families over a tributary area about purchases made in alternate possible centers, (3) personal interviews of customers in the tributary areas and of retailers, newspaper editors, and bankers in cities and towns, and (4) analysis of the charge account records of department stores with credit facilities. Gunnar Arpi (1959) in Sweden interviewed a sample of the population living along the roads that connect central places. In a field study of the small community of Ellison Bay, Wisconsin, Robert S. Platt (1928) was concerned with points of focus, areas of organization, and lines and limits of movement in functional pattern of occupance. This line of development from field studies has found its fullest statement in papers by Allen K. Philbrick (1957, 1963).

Cartographic sources. Often cartographic materials are available from governmental or business sources showing for a whole country the areas of distribution from centers providing a particular good or service. Thus the atlases of wholesale grocery or dry goods trading areas of the United States (US Bureau of Foreign and Domestic Commerce, 1927, 1938, 1941, 1947), the maps of wholesale drug areas (National Wholesale Druggists' Association), or retail areas (Hagstrom; J. Walter Thomson), or generalized trading areas (US National Recovery Administration 1935).

Freight or passenger movement. Analysis of flows of people or goods provides a dynamic approach to the functioning and definition of regions of organization (J. Douglas Carroll, 1955). H. Hinz (1942) in Denmark and Hölcke (1947) in Sweden used railroad and bus timetables in determining urban hinterlands. Among general studies of such flows for individual cities are those by Björn Bosaeus (1958) for Uppsala, Sweden, M. E. Dumont (1950) for Ghent, Belgium, J. Alexandre (1951) for Liège, Belgium and Michel Laferrère for Lyon, France (1961). The patterns of commuting have been considered by Peter Schöller (1956) and described by Robert E. Dickinson (1957, 1959) for Germany and the Low Countries. M. Dobrowolska (1961) and S. Mańkowska (1961) presented the results of the studies of commuting for Southern Poland. Traffic regions for an entire country have been defined in the Netherlands for freight (goods) by the Centraal Bureau voor de Statistiek in 1941 and 1943 based in part on earlier regions (H. J. Keuning, 1941). Statistics of commuting have been available for the Netherlands since 1947. Centers of commuting in Belgium are recorded in the Atlas du Survey National (plates 25—31). Rudolf Hoffmann (1956) has used bus and rail traffic density as a means of determining boundaries between umlands of nodal cities in Germany, as has David E Snyder for Uruguay (1962). T. Arisue (1957) used the net passenger revenue of railroad stations as an indicator of centrality in Japan, and T. Ishimizu (1961) studied both in-commuting and out-commuting for 119 cities in Japan with respect to the tributary areas of major metropolitan centres.

Stanley D. Dodge (1932) used personal field observation of traffic flow of private cars by road to define the tributary area of an individual town. On a much broader scale Edward L. Ullman (1960) utilized data gathered on traffic flows for an entire country to delimit the nodal regions in the Philippines. Since traffic flow data are widely available, such a method provides a very useful preliminary suggestion as to regional boundaries. A far more precise and detailed method, of course, is provided by origin-destination studies of movement. Rune Bengtsson (1957, 1959) has used such origin-destination studies of automobiles to define tributary areas to central places in Sweden. He has also combined this method with analysis of shopping by customer interviewing (Rune Bengtsson, 1962).

The utility of analyses of bus movement for the study of urban hinterlands was noted as early as 1938 (Mispelblom Beyer and Bergh Van Eysinga) in a study of Leiden, Netherlands. F. H. W. Green has made a long and fruitful series of studies of bus movements in Great Britain and other countries of Western Europe and of their utilization in the delimitation of urban hinterlands (1948—1953, 1955). Indeed on

this basis he has constructed a series of maps of hierarchies of urban centres and hinterlands. Sven Godlund (1951, 1954, 1956) in similar studies of bus service in Sweden established urban hinterlands in an urban hierarchy of five ranks. The effect of the frequency, speed, and cost of bus service on urban hinterlands was considered by A. A. Brown (1959). In 1942 two special enumerations were carried out in the Netherlands on traffic by motor buses, with special regard to origin and destination; on the basis of this census 19 traffic regions were recognized ("Indeling ..." 1943).

A. Wróbel (1961) used the data about the number and destinations of passengers departing from the railroad and bus stations in about 400 localities in Poland to define the service regions of the regional centers of the first and second order.

Migrations as a feature of tributary areas of cities have been studied by K. I. Bergsten (1951) in Sweden, J. Korčák (1961) in Czechoslovakia and by L. P. Green and T. J. D. Fair in Africa South of the Sahara (1962).

General studies of density of flows of freight have been made by Edward L. Ullman (1957) for the United States, Robert H. T. Smith (1962) for Southern New South Wales in Australia, and L. P. Green and T. J. D. Fair (1962) for Africa South of the Sahara, and F. Lange for Austria (1960). Ch. Marinov (1961) utilized the movement of goods by railroad to study economic connections and interregional exchange as the major factor in the delimitation of nodal regions in Bulgaria. One of his methods of gathering data was to direct special questionnaires to railway stations.

Freight-rate structure as an element in competition among nodal centers has been ingeniously examined for Wisconsin by John W. Alexander, S. Earl Brown, and Richard E. Dahlberg (1958).

The rise of air traffic presents a new dimension to hinterland studies, embraced already by Edward J. Taaffe (1952, 1962).

Newspaper circulation. The newspaper has long been recognized as a factor in and index of the area tributary to a city. The pioneer study in the delimitation of the local trade area of a city by means of newspaper circulation was by Robert E. Park (1929) in the United States. J. P. Houghton (1950) has applied similar methods in Ireland, and E. W. Gilbert (1960) in England.

Telephone communication. Telephone messages as a measure of intercommunication between city and hinterland have been studied by Walter Christaller in Germany (1933), Torsten Hägerstrand (1953) in Sweden, Howard L. Green (1953, 1955) and John D. Nystuen and Michael F. Dacey (1961) in the United States, and Reino Ajo in Finland (1962).

Education. Origin of the students of the academic schools has been used by A. Wróbel (1959) and K. Dziewoński (1961) as an index of the regions of influence of major cities in Poland.

Financial ties. Banking relations have been used to measure urban hinterlands by Jean Labasse (1955) for Lyon, France, and by Otis Dudley Duncan et al (1960, pp. 105—123 and 133—155) in the United States. The districts of the Federal Reserve Board have long been used as a regional indicator in the United States.

Administrative districts. Political and other administrative boundaries were utilized by Christaller. The relationships of a large number of Federal administrative regions in the United States were portrayed in *Regional Factors in National Planning* (U.S. National Resources Committee, 1935, appendix, pp. 203—223).

Fairs and markets. Studies of fairs and markets, which in peasant societies are the counterparts to central places in exchange economies, are listed in Brian J. L. Berry and Allan Pred (1961, pp. 59—62).

Hierarchies of central places. The problem of delineating hinterlands or tributary areas for nodal cities or central places has been discussed by many authors including F. H. W. Green (1958) in England and Olaf Boustedt (1957 and 1962) in Germany.

Christaller (1933) produced the classic deductive theory of a hierarchy of central places and of the corresponding tributary areas or nodal regions based on a marketing principle, a transportation principle, and political-social (administrative) principle. He then tested this abstract scheme against the actual arrangement of central place systems in southern Germany. Ullman (1941) introduced these concepts into the English-speaking world. Studies of hierarchies of central places and related regions of organization have been extensively listed and annotated in chapters 1 and 2 of *Central Place Studies: A Bibliography of Theory and Applications* (Berry and Pred, 1961) and thus need not be discussed in detail here. Many studies testing various aspects of the central-place theory and of methods for research on hierarchies of regions of organization have been made in Germany, Great Britain, and the United States (IGU Symposium in Urban Geography, Lund, 1960). Similar studies have been carried out by H. J. Keuning in the Netherlands (1948), Hans Carol in Switzerland (1951) and South Africa (1952), W. Stiegler in Austria (1953), J. S. Duncan in New Zealand (1955), H. Morikawa in Japan (1959), Louis Trotier in Quebec in Canada (1959), and Robert C. Mayfield (1962) and N. R. Kar (1962) in India. Of special methodological interest is the application of graph theory, a mathematics of relations, in the analysis of intercity flows and thence to the delimitation of hierarchical regions of organization (Nystuen and Dacey, 1961).

Complex inter-regional and inter-industry linkages. Interconnections among the regions have been studied particularly by Walter Isard in a large number of fruitful papers summarized in his book, *Methods of Regional Analysis: an Introduction to Regional Science* (1960). Among the aspects touched on are interregional migrations, interregional flow of funds (balance of payments analysis), application of input-output techniques to interregional relations, inter-regional linear programming, and spatial interaction models. On the basis of uniform regions with a pronounced function (or functions), either agricultural, industrial, or service, something similar was done for the Netherlands by Keuning (1955). Marinov (1963) in Bulgaria has attempted to combine various mathematical-economic models (in matrices of coefficients) in the recognition and delimitation of complex economic regions.

One of the important aspects of the study of an industrial region is to trace and evaluate the role of inter-industry linkages in industrial complex analysis, as noted by P. Sargent Florence (1948), Chauncy

D. Harris (1954, pp. 341—343), Isard, Schooler and Vietorisz (1959) and Isard (1960, chapter 9).

The annual volumes of Papers and Proceedings of the Regional Science Association (1954—1962) contain many valuable methodological papers not cited or referred to individually in the above discussion.

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RESEARCH APPROACHES TO ECONOMIC REGIONALIZATION IN CANADA

NORMAN L. NICHOLSON, ROMAN T. GAJDA

The purpose of this paper is to present and appraise procedures used for economic regionalization that are currently being applied in Canada. It is concerned with the historical development of research in this field, the criteria used for the delimitation of economic regions, and future prospects for the development of research on this subject. The "region" in this particular concept is restricted to the use generally made of the term by statisticians and, therefore, eliminates from discussion all other concepts of the "region" used in other contexts.

EVOLUTION AND TRENDS IN RESEARCH ON ECONOMIC REGIONALIZATION

At the outset it is necessary to point out that the problem of economic regionalization in Canada is confronted with difficulties of political nature because Canada is a Confederation of the provinces and two territories. The task of developing a national classification scheme is no easy one in a country in which "political economic" entities of each province are determined by the legislature of the province concerned. To develop a general and national scheme, it is necessary to assume that a particular entity in one province is equivalent to another entity (not necessarily having the same generic designation) in another province. Partly as a consequence of this, most of the research which has been carried out in Canada so far has been more or less on a subjective basis. Much has been published on economic regions generally and the application of regional principles has been made in many fields, but the actual methods by which regional divisions of the country are arrived at have seldom been described, much less in detail.

About the only exception to this statement is the basic work of Weeks and Sametz on economic zoning.

EARLY ATTEMPTS 1930—1950

The work of Weeks and Sametz was preceded by several other (unpublished) investigations, one of the main being carried out during the 1930's by the Department of Social Research Studies of

McGill University on local and area problems, which included the zoning of Ontario and Quebec in terms of agricultural and industrial markets¹. During World War II, a Federal Committee on Reconstruction devoted attention to the problems of readjustment likely to be faced at the end of hostilities. It was particularly concerned with those areas likely to have critical employment problems, and a list was prepared covering centres or groups of centres comprising a labour market. This work was continued by the Department of Reconstruction in 1944 and developed further in 1946. All urban centres of 10,000 population were examined, but areas outside the urban centres were not covered, and the system had only limited value for general analysis. An advance on this approach was made by the Department of Reconstruction and Supply which, in 1947, developed a "Community Areas" approach. The aim was to determinate the possible local employment effect on public projects, the area directly affected by on-site employment, and the area that would benefit from the completed work. But meantime, the same Department was attempting to divide Canada into economic "Zones". Started in 1946, these efforts resulted in the establishment of ninety-eight zones for the whole country. The aim was to arrive at the most effective compilation of factors essential for analysis, including the production and industrial patterns, market relationship, and general economic determinants, such as extent of resources, seasonability, and secular trends. This work may be regarded as a first attempt in the economic regionalization of Canada.

THE 1950—1962 PERIOD

The results of this work were published in 1953 by Weeks and Sametz — a basic document in zoning concepts and methods. The economic regions developed by them were intended to form "a system of general purpose zones to assist in analysis of basic production and marketing factors and hence the interpretation of economic conditions".

Further work and developments in economic zoning continued by the Dominion Bureau of Statistics and resulted in a second basic document on Canadian Economic Zoning². It was based essentially on the previous one. It elaborated the main points considered previously and included certain improvements in the areas introduced as a result of consultations between various federal and provincial agencies, as well as geographers. Following this work, the problem of economic areas were referred to a committee established to prepare pertinent material for the Second Federal-Provincial Conference held at Ottawa in 1955. The recommendation of the conference gave incentive for the next important step, that of exploration and examination associated with "the provision and use of statistics" for small areas. Accordingly, the Dominion Bureau of Statistics inaugurated a pilot study of economic regions and produced

¹ E. P. Weeks, Z. W. Sametz, et al, *Economic Zoning of Canada and D. D. P. Geographic Code*, Department of Defence Production, Ottawa, 1953 .

² E. P. Weeks, Z. W. Sametz, et al, *Economic-Administrative Zoning of Canada*. Department of Defence Production, Ottawa 1954.

a report on the progress of the project³ as a starting point for further discussion and an exchange of ideas about specific problems.

Though several provincial governments paid scant attention to the proposals, they were accepted as a useful framework for analysis by the Governments of Ontario and Quebec, and to some extent by the Government of Manitoba. As a result, in Ontario the Department of Economics (now the Department of Economics and Development) eventually began a series of extremely detailed studies of the "regions", which has resulted in the publication of reports on each of them at the rate of about one every year. So far five such reports have appeared⁴. In addition, the annual report of that Department⁵ is to a large extent oriented towards the presentation of data on the basis of "Provincial Economic Regions". In Quebec, the Provincial Government has established a Regional Study Section and a Regional Development Division within its organization. Though both of these agencies have a strong interest in regional analysis, the Quebec agencies, as well as geographers, have some criticism of the specific system so far developed⁶. They claim that a firm principle not to split a county unit would make it impossible to reconcile economic and geographic regions. For example, the long counties stretching far back from St. Lawrence Valley generally cover at least two different types of physiographic and resource areas and the statistical base should recognize this in making provision for two units of compilation⁷. Nevertheless, so far, Quebec has used the system, at least as a framework within which to present some, though admittedly only a few, of the statistics in the "Statistical Annual" released by the Quebec Bureau of Statistics. An interesting attempt at reconciling divergent regional criteria with existing Provincial Economic Regions has been made by Nicholson and Sametz. In Manitoba the Government is also actively supporting regional analysis through the establishment of a Regional Development Branch. This agency has divided the province into seven "Development Regions" which nearly coincide with the Provincial Economic Regions of that province. Studies of the economic of these regions have been made or are underway⁸.

Meanwhile... farther research on economic regionalization has been resumed in the Dominion Bureau of Statistics. The first task has been to revise the Provincial Economic Regions of Manitoba and Alberta, a process which was necessitated by the fact that the Census Divisions of these Provinces had been completely changed (Alberta in 1956 and Manitoba in 1961). To disseminate the knowledge of these revisions and

³ Dominion Bureau of Statistics, *Statistics of the Economic Regions of Ontario and Quebec: a Progress Report*, Ottawa 1956, (unpublished).

⁴ Northern Ontario Region (1958); Georgian Bay Region (1958); Lakehead-Northwestern Ontario Region (1959); Eastern Ontario Region (1960); and Lake Ontario Region (1961).

⁵ Ontario Government, Bureau of Statistics and Research, *Economic Review of Ontario — Annual*, (especially 1954 issue — Sixth Annual Economic Survey of Ontario).

⁶ B. Brouillete, *Les Régions géographiques et économiques de la Province de Québec*, *Cahiers de Géographie de Québec* 6, 1959, pp. 65—83.

⁷ N. L. Nicholson, and Z. W. Sametz, *The Regions of Canada and the Regional Concept. Resources for Tomorrow*, Vol. 1, 1961, Queens Printer, Ottawa, 1961, p. 376.

⁸ For example, *Economic Survey, South-West Manitoba*, Manitoba Department of Industry and Commerce.

of the Provincial Economic Regions system in general, the Dominion Bureau of Statistics published a "background paper" on the problem of "Geographical Classification" in 1961 edition of the Canadian Statistical Review⁹.

Revisions to the Provincial Economic Regions have not yet been attempted with regard to Northern Canada. The economic regions there embrace the three large sparsely populated districts of Mackenzie, Keewatin and Franklin, as well as Yukon Territory, or an area of close to one and one-half million square miles (3,900,000 kilometers). They are characterized by huge "null zones" or negative economic areas, and as they are areas of "dispersed" economy, perhaps need to be treated differently from Southern Canada, as indicated in a recent study by Gajda¹⁰. Meanwhile, the division of Canada into broad economic regions based on physiography, distribution of population and transportation, has been made by Nicholson¹¹ indicating the need for a more geographical approach to the problem of economic regionalization.

The second task, that of examination of geographical classification schemes generally including the Provincial Economic Regions scheme, was undertaken by a "Committee on Geographical Classification", established in the Dominion Bureau of Statistics some three years ago. The Committee's concern has been to develop an areal classification scheme which would be in harmony with the general principles of Geographical Classification. This task is formidable and is faced, among other difficulties, with the problem of developing a coding system which would be a numerical "translation" of an areal classification system, since the Dominion Bureau of Statistics is troubled by the restraints which the available number of columns on a punched-card system places on an approved "scheme". At the moment, no statistics are being released by the Dominion Bureau of Statistics on a Provincial Economic Regions basis in any continuing publication. Recently a Canadian Council on Urban and Regional Research has been established, which hopes to act as a "liaison agency" between various interested disciplines.

In recent times the realization has been growing that research has gone too far in the aggregation of basic data. Consequently, there has been a growing tendency towards "disaggregation" of statistics, a process which could be termed as sub-aggregation. The demand for statistics on a sub-aggregation level is now growing. The development of new techniques of handling and digesting information has opened new approaches to quantitative methods as applied to economic regionalization in Canada, but so far have only appeared in a publication by Mackay¹². Because sub-aggregation involves the examination of a larger number of statistics and a vastly greater number of inter-relationships, there is no doubt that electronic computers could be used to solve problems that would be overwhelming for the human mind, aided only with standard calculating machines and standard techniques.

⁹ Regional Statistics and Regional Statistical Classification. The Canadian Statist. Rev., 1961, p. 7.

¹⁰ R. T. Gajda, The Canadian Ecumene — Inhabited and Uninhabited Areas. Geogr. Bull., 15, 1960, pp. 5—18.

¹¹ N. L. Nicholson. Economic Regions of Canada. Canada Year Book, 1961, Ottawa, pp. 17—23, map.

¹² J. R. Mackay, Regional Geography: A Quantitative Approach. Cahiers de Géographie de Québec, 6, 1959, p. 494.

Therefore, further work on the development of the Provincial Economic Regions system is now evolving with the assistance of the highly sophisticated techniques of regional analysis to find an "optimum" or most suitable level of observations in order to obtain a significant pattern often concealed through excessive aggregation or lost in the process of high fragmentation.

THEORETICAL ASPECTS OF ECONOMIC ZONING AND CONCEPTUAL BACKGROUND

The main work in economic regionalization in Canada was intended to "present a possible system and to obtain comments which would assist in establishing an agreed and commonly acceptable model of the provincial economic regions and zones of Canada". The development of such a model faced three major problems: (a) The problem of a conceptual framework to which data could be related in a series of valid and useful generalizations; (b) The problem of obtaining data on an area basis; and (c) The problem of systematic aggregation and handling data in quantity.

THE CONCEPTUAL FRAMEWORK

In evolving the conceptual framework, the work of many others was reviewed and had a direct impact on the eventual outcome. In particular, the following concepts were involved:

(1) Spatial relation concept as evidenced in the transportation network and the absolute distance involved.

(2) Centres of influence concept, i.e. "the position and status of localities and their sphere of influence in the intercentre competition derived on the basis of population and trading factors".

(3) Hinterland relation concept involving functions and relationships between centres and their hinterlands which are related directly to these centres.

(4) Dynamic inter-zone activities concept (i.e. export carriers) involving the residentiary industries within the unit and the links of the economic regions with the "outside" through carrier industries.

(5) The interrelation and institutional factor concept, i.e. normative or institutional elements not primarily of economic nature, but of economic consequence. Consideration of such non-economic social and political organizations assisted in the determination of the zones of influence of the centres.

But the intention was also to establish a model for general area analysis to serve a maximum number of general uses, so that the general purpose regions could be integrated with or supplemented by other regions intended for more specific purposes. Consequently, an attempt was made to combine structural and dynamic approaches and to use various basic criteria such as the production and marketing pattern. The approach therefore was operational (representing a combination of theory and practical requirements) and consequently, the definitions were operational definitions. A provincial economic regions is therefore

defined as a "spatial unit which has a distinctive matrix (operational table) of structural, functional factors with regard to both production and marketing and for which statistical data on these factors can be derived". The compromise with the political situation in Canada was made by assuming that no economic region extended across the boundaries of any Province.

As no one system of economic zoning would satisfactorily meet all the requirements of economic regionalization, it was decided (see notes 1,2 on page 88) to develop a system of general purpose regions which could be integrated with or supplemented by other regions intended for more specific purposes.

THE AVAILABILITY OF DATA

In all possible theoretical approaches the chief limiting factor is the availability of relevant data. In Canada at present the amount of statistical data published by the Dominion Bureau of Statistics on a provincial basis is considerably less than on an "all-Canada" basis. Furthermore, the data for areas smaller than Provinces, i.e. counties and census divisions, are even more restricted in scope. Exception to the general rule includes statistical information collected in connection with the decennial census, and which is published in considerable detail. Here data are included for census divisions¹³, which form the basis for the provision of statistical data for comparable areas with Provinces. Statistical data are also available for units such as municipalities¹⁴, metropolitan areas¹⁵, census "tracts"¹⁶, and even smaller areas known as "enumeration areas", the smallest unit of the census in the field. Statistical data on the remaining areas are published under "unorganized areas" which usually are under the direct jurisdiction of the province. Indian reserves are treated as separate subdivisions, and data for cities, towns and incorporated villages are published separately from data for municipalities in which they may be geographically located. But generally speaking, the amount of statistical data evidently decreases as the areal unit under consideration changes from larger to smaller¹⁷.

¹³ In Prince Edward Island, Nova Scotia, New Brunswick, Quebec and Ontario Provinces, counties are used for this purpose. The remaining provinces of Newfoundland, Manitoba, Saskatchewan, Alberta and British Columbia have been divided into arbitrary units "census divisions" since there are no counties corresponding in function to these in the foregoing provinces.

¹⁴ Municipalities are sub-divided into rural and urban consisting of parishes, townships or municipal districts, depending on the province.

¹⁵ Metropolitan areas do not coincide with the administrative territorial units of major cities.

¹⁶ Census "tracts" are defined as socio-economic sub-divisions of metropolitan areas (in some larger cities) characterized by approximate uniformity in population, size and composition. They are intended to facilitate the studies within the cities. This "tracts" do not coincide with any administrative unit. The statistics relating to individual "blocks" in urban areas have not been tabulated.

¹⁷ A number of reasons exist which explain this situation. Among them four main restrictions should be mentioned: 1. The Statistics Act, acts as a barrier to publication of regional details with regard to information relating to individual persons or business establishments. 2. Because of conceptual consideration some statistics relating to the activities of business operating on a national scale cannot be allocated regionally except on a very arbitrary basis (e.g. characteristics of activities of transportation companies). 3. Sampling techniques. A sample designed

Consequently, for "economic regionalization", the boundaries of the regions had to follow census division boundaries. This does not provide a fine breakdown but rather the largest area for which useful generalization may be made. Within the above limitations the economic regions were designed to represent a "community of interest", particularly with regard to dynamic types of production, market relationship and labour supply and demand. In other words they formed, on one hand, the best possible combination of structural and functional factors and, on the other, production and marketing factors, allowing for availability of statistics. Incidentally, but only incidentally, the provincial economic regions also attempted to represent an integration of geographic zones or regions which were designed on the basis of physiographic and other criteria. That this attempt was only nominal was partly due to lack of detailed geographical data. This is now being remedied, particularly with the publication of a national series of Land Use maps.

Thus the main principle underlying the zoning procedure was the attempt to equate economic units with statistical units.

SYSTEMATIC AGGREGATION AND HANDLING THE DATA

The problem of handling area data was solved by the use of a five-digit code which could be used for fully mechanical operations on computers, as well as semi-mechanized operations, and yet permitted the identification of significant localities. Significant localities included (a) all centres for which manufacturing statistics were available; (b) key non-manufacturing localities (these included all centres of over 500 population, which was regarded as a minimum level on which a centre becomes significant enough to warrant attention); (c) places with a branch bank.

The "hierarchy" and associated coding procedure was as follows:

Code No	Term
0	First digit — Province (Except Prince Edward Island, Yukon and Northwest Territories, as these were treated as economic regions and are differentiated at the second digit level)
00	Two digits — Provincial Economic Region These regions are given names in accordance with their general nature. The names are simple or complex, depending upon the "structural" base and the relative dominance of their functional centres. The presence of a major functional centre with population of over 50,000 is shown by hyphenated prefix, e.g. "St. John's—Southeastern Newfoundland Region" If the centre is a major one, it is zoned by itself and this is indicated by "Metropolitan" Suffix as in "Montreal-Metropolitan Region". They are contained within provincial boundaries and are combinations of complete census districts.

to be acceptable for Canada as a whole would not in general be acceptable for its geographical sub-divisions. 4. The cost of processing and publishing statistical data at the sub-provincial level.

000 Three digits — Zone

These are the basic local units. They are subdivisions of a region and are differentiated on basic local functional-structural characteristics. A zone is simply named after a dominant locality, e.g. 000 — St. John's Zone, or it could be labelled as District, e.g. 001-South Coast District, if there is no dominant centre.

0000 Four digits — Important major locality

Important municipal units, as well as other significant localities, for which there are manufacturing statistics, are identified by four digits.

00000 Five digits — Minor localities with a population of over 500.

Associated with this hierarchy, although not actually a part of it, are "major economic regions". This term refers to the broadly accepted major economic-administrative divisions of Canada: the Atlantic Provinces, Quebec, Ontario, the so-called Prairie Provinces, British Columbia and the Territories.

CRITERIA USED FOR DELIMITING ECONOMIC REGIONS

The economic zoning system (Provincial Economic Regions) therefore involves the subdivision of each province into a limited number of areas which are characterized by a comparative homogeneity from the viewpoint of past and potential economic development. The term „homogeneity" is used in a relative sense. The boundaries of each region are designed to unite areas which have basic unity or similarity of economic life, and to separate them from surrounding areas whose economic life differs.

The criteria which are regarded as determinants of "economic unity or similarity" were established in terms of the so-called *SFPM* formula which was considered most suitable for general analysis. This four-factor formula includes: structural (*S*), functional (*F*), production (*P*), and marketing (*M*) factors. The assumption was made that a "local" economy can be described structurally in terms of the natural resources background and the composition of its human and capital resources; but its activities, its functions, may be described only inadequately in terms of endogenous factors, for much of its activity may be determined by its functional relationship with other areas due to the operation of the spatial factor and the resulting locational "advantages and disadvantages"¹⁸.

In the actual zoning process, this four-factor analysis was applied by assigning a specific number of points to each factor, according to the importance of the factor from the point of view of general economic study. It should be recognized that the four basic criteria (*SFPM*) are, actually, complexes in themselves of other various criteria.

The maximum allocation of points was in accordance with the following scheme:

¹⁸ Weeks and Sametz, 1954, p. 7.

Maximum Points	Maximum Points		
45 P(Production)	30	S	The industrial structure, that is the industrial "mix" as existing, or likely to exist with the given resource base. Homogeneity high.
	15	F	The flow of goods being produced: the source of industrial inputs and the destination of industrial outputs. The close relation of source or destination to centre of production rates high.
45 M(Marketing)	15	S	The structure of the market area in terms of its marketing characteristics: by population, size, by language and income characteristics etc. Though this is important in market analysis the heavy weight given under PS to the industrial "mix", which largely determines income characteristics, precluded giving additional points to FS, or else the model would have been overweighted by structural factors.
	30	F	The functioning of the market area, that is the distribution process in terms of the flow of goods through marketing centres, wholesale and retail. This involves study of the marketing media, the ways of transportation and communication in the area which also tied in closely with administrative and other functional criteria. Heavy weight was given to this factor, which is also partly supported by the PF factor on destination of outputs.
10 Other-Social etc.	5	S	The social and institutional structure was given some weighting, although this factor again is supported by the weighting given to MS, the market characteristics. In the case of a city, possession of key regional institutions strengthened its position to claim as a regional centre. If any concept held locally of being a unit social area existed, this was also given weight.
	5	F	The human relations of the area were also considered, such as the flow of population from rural environs to urban centre, and other social ties.
100	Total		

The (S) factor, the structure, is regarded as the basic organization of the stable elements. Structural factors therefore are defined as "those involving the basic location of natural resources (raw material and power) as modified by actual distribution of human and capital resources required for economic activity."

Functional activity and functional relation analysis, (F), refer to the "activities or functions performed by the area in terms of the specific relations of these activities to the requirements of the local structure and other general economy". Therefore the functional factors were defined as those involving transportation and labour orientation of the area and its agglomeration pattern. The local transportation situation is considered as a basic unifying tie, whereas the transport facilities

beyond the region are export connections. The agglomeration pattern is indicated by the description of the order of the centres in terms of the numbers of people in the labour force¹⁹.

Production factor (*P*) in the zoning process stresses homogeneity of the structure of production, as well as certain specific relationships (i.e. forest hinterland to pulp industry). In general the economic regions are broad production areas and the zones are often closely integrated production areas, and are more uniform.

Marketing factor (*M*) stresses the marketing situation by analysis both in terms of internal structure of consumption, and the marketing relationships to other areas. In general the zones are primarily trading areas, but economic regions are not necessarily wholesale trading areas, though they tend to perform some of these functions.

The total number of points assigned to the four factors allowed the designation of areas to zones and regions. At the zonal level, a rating by an area of over 80 was required for incorporating it within a given zone. At the regional level, a rating by an area of over 66 was required for allocating it to a region. Thus the areas had to have twice as much in common as they have in difference to be placed in the same Provincial Economic Region.

The end product of the analysis was the differentiation of 273 "economic zones" formulated into 64 "Provincial Economic Regions" (Figure 1), and the preparation of an analytical description of individual economic regions.

Later, adjustments were made to conform with the 1961 Census Divisions in accordance with major changes made in Alberta and Manitoba (and minor changes in boundaries of Braut and Frontenac counties of the Province of Ontario) as shown in Figure 2. The process of modifying census divisions will have an almost continuous effect on the boundaries of Provincial Economic Regions. The Province of Saskatchewan is completely revising its municipal units and is in the process of establishing a county system. In British Columbia, on the other hand, the census divisions are too large in comparison with other provinces, so there is a need to subdivide this province into a larger number of census divisions. Figure 3 shows the 1961 status of census divisions.

THE DEVELOPMENT OF ECONOMIC ZONES

In the processes of economic regionalization, the main project was the establishment of the provincial economic regions described above. A second aspect closely related to the first one was the development of an adequate system of small component units of provincial economic regions, i.e. "economic zones". The analysis of these more specific basic

¹⁹ First order zones are small Local Office areas with a labour force of under 10,000. Second order zones are minor Local Office areas with labour force of 10,000—25,000 (whether principally agricultural or non-agricultural). Third order zones are major agricultural areas with a labour force of 40 percent. Fourth order zones are major industrial areas with a labour force of 2,500—75,000, but of which over 60 percent are engaged in non-agricultural industries. Fifth order zones are the metropolitan areas with a labour force of over 75,000.

units revealed certain inadequacies in the present census units. It was considered that, if more obvious of these deviations, from an economic-administrative approach, could be offset ultimately by setting up certain new census units, then the boundaries of the provincial economic regions could be altered accordingly.

The interest in smaller "zone" units was varied. Public and private administrators required such units or their combinations in their attempt to work out ideal administrative units, marketing people for the purpose of the establishment of sale districts, and agriculturalists for the purpose of establishment of soil zones etc. Consequently an attempt was made to reach all these potential users by creating a telescoping model which would enable all these users and industrialists to tie-in with the common scheme of provincial economic regions. This was done by tying in with five-digit code. It was suggested that users interested in functional criteria could attach a supplementary one- or two-digit code to indicate individual administrative units to which the various areas belong. Similarly, those interested in homogeneity of special factors could analyze the structure of the individual areas and then attach another supplementary one- or two-digit code to indicate soil or agricultural zones, etc., into which the individual areas fall. In this way both special and general tabulations can be made and data provided for both special and general users. This leads to a consideration of yet a further aspect — that of strictly homogeneous units. For in many instances it may not be possible to reconcile the economic zones with the requirements of those interested in a system of economic regionalization that is more closely tied to the physical background. If the physical units cut across the zonal framework, they should be treated as sub-regional sectors, or more simply sectors. They would be "those portions of the zones as these are cut-up by the sectors, that is, the component sub-units within the zones". This way, the physical data could be integrated either into sectors and regions or into zones and regions. Three general approaches to this problem may be distinguished:

1. A structural approach of land form type or a modified approach of land use type.
2. A functional approach of local market area type.
3. An extension of combined (*SF*) approach of the provincial economic regions and the zonal aspect to define the smallest homogeneous structural-functional units.

The specific nomenclature for such units would depend on which approach is utilized (e.g. land use sectors, local market subzones).

In the first approach it would be necessary to adhere to relatively static elements of the structural background, i.e. geological or physiographic divisions based on landforms influenced by climate. The units in the latter case labelled as physiographic sectors or sub-zones. In a modified approach, units based on homogeneous land use could be established, following the practise utilized by the United States "State Economic Area" project. These units could be labelled "land use sectors and sub-zones".

The second approach would be "the proceed on a strictly functional basis, and delimit the marketing areas of the smaller localities or even the individual localities".

The third approach is the balancing of structural and functional homogeneity as an extension of the present regional and zonal approach to the economic sectors and sub-zones. This project would involve again consideration of total factors in the creation of these sub-regional units. Such units as suggested could be labelled "economic sectors" within the economic zones.

This most difficult approach is of particular interest to geographers favouring a general approach based on "total factors".

RECENT RESEARCH IN ECONOMIC REGIONALIZATION IN CANADA

NEW REGIONALIZATION PROCEDURE

During the summer of 1963 the Dominion Bureau of Statistics and Chicago University are attempting to develop a new procedure for computer regionalization designed to establish uniform regions using modern mathematical and statistical methods, as well as various techniques. For the first pilot-test study the data has been collected by county for Ontario and Quebec provinces. Later, depending on the success of the study, the data may be collected by smaller units, i.e. municipality or enumeration areas. The procedure involved was initially described by Berry in his paper entitled "A Method for Deriving Multi-factor Uniform Regions"²⁰, which followed earlier attempts at the application of factor analysis to regionalization²¹.

Though this area of research is promising, it still should be regarded as very provisional as far as the Dominion Bureau of Statistics is concerned, as the test study has not been completed and clear criteria not yet established.

The general procedure is basically designed to ascertain the similarity between sub-areas (in the present case study counties) of a larger area (in this case the Provinces of Ontario and Quebec, treated as a unit without regard to the provincial boundaries). This similarity is quantified, on an index basis, so that the "similarity index" of two very similar counties would be close to zero, and the similarity index of two very dissimilar counties would be close to 10 or 100, or whatever is used to indicate complete dissimilarity. When the dissimilarity indexes have all been computed, the computer can then prepare a table, or matrix, which indicates the similarity of every county to every other county, as follows in a simple four county "province".

²⁰ Brian J. L. Berry, "A Method for Deriving Multi-factor Uniform Regions", *Przegląd geograficzny* 33, Part 2, 1961, pp. 263—278.

²¹ One of the first attempts to apply factor analysis to regionalization was made by M. G. Kendall, *The Geographical Distribution of Crop Productivity in England*, *Journ. Royal Statist. Soc.* 1939, pp. 21—62. Since this work a number of attempts have been made to apply the procedure, noteworthy among them being M. J. Hagood, *Statistical Methods for the Delineation of Regions Applied to Data on Agriculture and Population*, *Social Forces*, 1943, pp. 287—297. These, as well as the paper by Berry, already mentioned, point out some advantages and disadvantages of this procedure.

County	County			
	A	B	C	D
A	0	3	5	9
B	3	0	6	8
C	5	6	0	7
D	9	8	7	0

Given a similarity matrix, the matrix is then searched (by computer) for the two contiguous counties whose similarity index is a minimal. These two counties are then grouped and treated as a single geographic unit in all subsequent stages of the grouping procedure. In the above example, counties A and B would be grouped, and treated thereafter as one areal unit.

A new similarity matrix is next computed to show the index of similarity between each remaining county (including A and B as one county and all other counties, and again the two counties with the lowest figure on the similarity matrix are combined.

This grouping procedure is repeated as many times as there are counties. In this case study of Ontario and Quebec, 120 times. At the start there are 120 counties and at the conclusion there remains one two-province unit having, in intervening stages, 119 units, 118 units, etc. Theoretically, the "regionalization" could be stopped at any point between 1 and 120 and there might be some concern as to what this point might be. Here again, statistical procedures come to the rescue by enabling the researcher to discern at which stage of regionalization the critical detail is lost.

This procedure of calculating a new similarity matrix after each step in the grouping process is referred to as "step-wise" procedure, this procedure being almost instantaneous on a computer, although unthinkably tedious and expensive by standard calculators.

The applied factor analysis programme places heavy emphasis on such concepts as similarity, balanced variables, factor scores, contiguity, etc., which need further amplification.

(a) Similarity: Whenever "similarity" is referred to in factor analysis literature, it must be understood that the factor analysis procedure is merely showing the similarity between two or more entities as determined on the basis of variables included in the calculations.

The inclusion of additional variables in the analysis would most likely have resulted in a different classification system. In the Ontario-Quebec pilot study, the variables were, by and large, indicative of the social and economic status of the counties so it could be said that a socio-economic regionalization is attempted. Other variables could have been included indicative, say of climate or soil structure, or vegetation, or something else equally far removed from socio-economic mensuration. Perhaps these would be referred to as "geographic-economic" variables but in any case they appear to be only of minor interest to the modern geographer.

With this warning of the importance of choosing the right variables, we can proceed to define the "similarity" or dissimilarity of one county to another in terms of its possession of similar or dissimilar values of the variables being considered, the variables in this case being the "balanced variables". It should be emphasized that the term „similarity"

is used in general sense to delineate all possible degrees of the relationship, including "negative similarity" or dissimilarity.

(b) Balanced variables: The reference to balanced variables, simply points out that the analyst is expected to ensure that he has only one variable telling him one story of the relationship between his entities being classified, as against a dozen variables telling him a different story.

(c) Factor scores etc.: Given the balanced variables referred to earlier, and given a system of entities (in this case counties) to be classified as to similarity according to their values of the balanced variables the counties are then determined to have a greater or less degree of similarity, each one to every other county, on the basis of what we can probably refer to as a "weighted averaging" of the balanced variables.

CONTIGUITY

Contiguity, at first glance, presents no conceptual problems, though the procedural (i.e. computational) problems are formidable. During the study it was found, however, there were also some problems of concept, namely whether counties making contact at a point in space, rather than along a line in space, would be "contiguous" for the purpose of the project. It was decided to treat them as not contiguous. There was also a problem whether a major river between counties (in this case the St. Lawrence River) should be "deemed" to interrupt contiguity, or even (possibly) create contiguity. It was decided to adopt a rule of thumb considered realistic that the St. Lawrence River did not interrupt contiguity above the lowest bridging point.

It is believed that the computational problems for giving effect, on a computer, to a "contiguity restraint" (that is, for telling the computer to join into one "region" only counties which were both similar and contiguous) had never been solved in the examined literature regarding this subject. As a result of various stages of experimentation indications are that possibly a satisfactory method of solving this problem has been found. However, this possibility has to be closely examined, using a large computer, before a definite statement in this regard can be made.

APRAISAL — ADVANTAGES AND DISADVANTAGES

The research described above indicates that two major approaches to economic regionalization have been made in Canada: the Provincial Economic Region system and the pilot study in factor analysis at present in a development stage.

PROVINCIAL ECONOMIC REGION SYSTEM

1. The system may provide a useful framework for assembly, presentation and release of statistical data which cannot be published on a smaller area basis (in this case county) because of previously mentioned limitations: (a) secrecy provisions, and (b) sampling techniques.

2. The system may also provide a method of integrating and reconciling various schemes of geographical classification in use elsewhere, at a level below that of the province.

3. Because consideration was given to man-made or capital structural factors, the system provides a useful frame for studying intra-zonal structures.

4. Application of market criteria in the scheme makes the system useful for market analysis purposes.

5. The system provides a useful area forecasting model.

6. Other uses are possible, such as consideration of data produced by those interested more in a structural approach, i.e. agricultural economists or geographers.

The disadvantage are inherent in the system, or have their roots in factors peculiar to the Canadian scene.

1. Insufficient emphasis was placed on various geographic and particularly social factors, with the result that this neglect introduces a weakness in the system.

2. The second most serious weakness is the fact that no method was derived for assigning in a satisfactory way how much weight should be given to each criterion used in the *SFPM* formula. This drawback introduces subjective judgment which would be varied, dependent on the individual preference of the analyst²².

3. Two main criteria used in the system, i.e. Structural and Functional, to produce "homogeneous regions" are regarded generally as mutually contradictory (homogeneous versus heterogeneous) and, therefore, difficult to apply to Canada. But these two criteria, if broadly interpreted, are not necessarily contradictory, and their combination is necessary when discussing the regionalization of such a country as Canada.

4. The system established useful economic regions but they do not meet the requirements or answer the problems of geographic researchers and teachers. The golden rule of the economists, not to split the county unit, makes it difficult to reconcile the economic and geographical regions because these units may not coincide with them as they extend often over areas with differing relief, climates, vegetation, natural resources and mode of exploitation.

FACTOR ANALYSIS PILOT STUDY

This approach has several advantages.

1. It enables the analyst to choose any level of aggregation, theoretically giving him everything from one to an infinite number of regions, depending upon his purpose.

2. The new system is capable of being generalized into a procedure for the classification of other types of areal units into larger units (enumeration areas into electoral districts, for example), and even perhaps

²² This is not necessarily a criticism, since a system which derives from subjective judgment of an experienced analyst may be better than one which derives from mathematical (i.e. objective) examination of variables, the selection of which may have depended upon highly subjective decision by an analyst not thoroughly experienced.

could be generalized into a procedure for the classification of non-areal entities into aggregations (firms into industries, for example).

3. The procedure is highly objective and it is believed that classification can be invalidated only by the omission of an important variable, and not by the inclusion of an unimportant one.

4. The procedure assures that at each step the mathematical optimal grouping of the given data is arrived at.

5. The procedure can be programmed for a computer and hence the classification can be processed very quickly.

The disadvantages of the procedure at this stage of the development are:

1. Mathematical complexity and terminology which makes it difficult to communicate.

2. The validity of regionalization depends upon the selection of variables; because it is a new technique in an experimental stage, it is not yet known whether it is important to balance the variables.

3. In the grouping procedure there is no assurance that identical contiguous areal units will always be joined.

4. The procedure requires the use of a large computer because the large amount of data involved.

THE TASK AHEAD

The concept which permits the setting up of a theoretical framework suitable for regional analysis has been formulated by many regional scientists, more recently by Isard²³, in whose study the whole basis for such work was laid down. However, it should be recognized, as pointed out by Wróbel²⁴, that generally apart from theoretical formulations, the problem of defining and delimiting regions has to a certain extent been neglected. However, various successful attempts towards the improvement of methods for the delimitation of economic regions have been made by a number of geographers.

As far as research on economic regions is concerned, it cannot be denied that in Canada geographers have lagged behind economists in modern developments. Few advances have been made by geographers in the past to develop a system for general use, apart from those which could be used as demonstration tools in geographical education (Figure 4). Economists and other specialists, such as agriculturalists, have played a greater role than geographers in the country's economic regional research and planning.

This situation is now changing with the growing specialization in economic geography. The delimitation of the economic regions of Canada is a good example of a problem in the solution of which both geographers and economists can contribute. At present there is a realization that, in order to develop a more meaningful aggregation of areas in a system that would be satisfactory to both groups, geographers and economists will have to work together in close harmony.

²³ W. Isard, *Methods of Regional Analysis: An Introduction to Regional Science*, New York, 1960.

²⁴ A. Wróbel, *Regional Analysis and the Geographic Concept of Region*, Regional Science Association Papers, VIII, 1962, pp. 37—38.

There is an awareness that discussion on the problem is confined, on the one hand, within an area that might be called by economists "geographical economics", overlapping the territory of geographers i.e. "economic geography". There is a need for geographers in Canada to outline clearly their state of interest in this "twilight zone" and to emphasize all the current research being carried out by geographers that is related to the interests of economists.

Basic to any such development is a methodical consideration as to whether economic regions have an objective existence. There is a feeling among Canadian economists that the geographer's approach seems to be not that the regions are there, but that they have to be created. The opinion of the economists, on the other hand, is that the regions are there and have only to be discovered by analysts. The "non-existence" of regions²⁵ "in reality" is supported by many American geographers. The writers have the feeling that the idea of non-existence of regions is losing its impact in modern geography, and in Canada, the views of geographers are rather in agreement with those of economists. For the same reason we think that the term "regionalization" used by geographers is an unsatisfactory one (although the majority use this term, assuming existence of the regions) which should be used with reservation, as it suggests the "creation" of regions. Perhaps the "delimitation of regions" or "defining of regions" expresses much better the feeling of both economists and geographers with regard to the subject of regional division and regional analysis.

Another consideration on which agreement should be reached is the need of creating a census division having internal homogeneity. Census divisions are arbitrary units, frequently conforming to counties which are historically determined administrative units. The counties in Eastern Canada are smaller than the census divisions created in Western Canada in 1921. There is a large disparity in area between these units. For example, in the Province of Quebec, the smallest census division (Iles-de-la-Madeleine) has an area of only 102 square miles (264 sq. km.), and contrasts significantly with the largest division (Saguenay, including the territory of New Quebec), covering an area of 315,176 square miles (816,381 sq. km.). In Western Canada the smallest census division is that of the Winnipeg Metropolitan Area, 264 square miles (637 sq. km.), whereas the largest, also in Manitoba, embraces 161,898 square miles (419,316 sq. km.).

On the average, excluding the sparsely populated Northwest Territories and Yukon, the census division represents an area of 8,829 square miles (22,867 sq. km.) and with regard to Eastern and Western Canada, 6,554 square miles (16,975 sq. km.), and 14,248 square miles (36,901 sq. km.) respectively. A more realistic picture of the average size of census divisions is obtained if all the northern sparsely populated parts of the provinces are excluded. In this case the average land area of census divisions for the southern populated part of Canada (ecumene) is 3,277 square miles (8,487 sq. km.) and for Eastern and Western Canada 2,258 square miles (5,848 sq. km.) and 5,181 square miles (13,419 sq. km.) respectively.

²⁵ D. Whittesley, *The Regional Concept and the Regional Method*. In *American Geography: Inventory and Prospect*, Ed. by Preston James and Clarence Jones, Syracuse University Press, 1954.

To arrive at census divisions having an internal homogeneity will require a special study using unit area data smaller than the present census divisions. These are presently available as census subdivisions and enumeration areas. These would be almost ideal for grouping into economic or geographical regions, but data published for these units are incomplete. It would appear that the solution to this problem lies in the initiation of a special programme to obtain from enumeration area data, sufficient information to create census divisions having better characteristics of internal homogeneity.

LIST OF PROVINCIAL ECONOMIC REGIONS, 1961

Code No.	Province	Region
0	NEWFOUNDLAND	
00		St. John's-South Eastern Newfoundland
01		Central Newfoundland
02		Western Newfoundland
03		Labrador
10	PRINCE EDWARD ISLAND	
2	NOVA SCOTIA	
20		Sydney-Cape Breton
21		Northern Nova Scotia
22		Halifax-South Shore
23		Annapolis Valley
3	NEW BRUNSWICK	
30		Moncton-South Eastern N.
31		Saint John-Southwestern N. B.
32		Upper Saint John Valley
33		Northeastern N. B.
4	QUEBEC	
40		North Shore-New Quebec
41		Gaspesie-South Shore
42		Saguenay Valley-Lake St. John
43		Quebec Metropolitan
44		Three Rivers-St.Maurice Valley
45		Sherbrooke-Eastern Townships
46		Montreal Environs
47		Montreal-Metropolitan
48		Hull-Western Laurentides
49		Western Quebec
5	ONTARIO	
50		Ottawa-Eastern Ontario
51		Peterborough-Eastern Lake Ontario
52		Toronto-Metropolitan
53		Hamilton-Niagara Peninsula
54		London-Lake Erie
55		Windsor-Sarnia-Lake St. Clair
56		Kitchener-Midlands Region

57		Georgian Bay
58		North Eastern Ontario
59		Lakehead-North Western Ontario
6	MANITOBA	
60		Winnipeg Metropolitan
61		South Eastern Manitoba
62		Manitoba Interlake
63		South Central Manitoba Prairie
64		South Western Manitoba Prairie
65		West Central Manitoba Parklands
66		Northern Manitoba
7	SASKATCHWAN	
70		Regina-South Eastern Plains
71		Saskatchewan Palliser
8	ALBERTA	
80		Alberta Palliser
81		Crowsnest
82		Calgary-Foothills
83		East Central Alberta
84		Edmonton-Parklands
85		West Central Alberta
86		Alberta Peace River
87		Northern Alberta
9	BRITISH COLUMBIA	
90		East Kootenay
91		West Kootenay
92		Okanagan
93		South Central B.C.
94		Vancouver-Lower Fraser
95		Victoria-Vancouver Island
96		Northwestern B.C.
97		North Central B.C.
98		Northeastern B.C.
11*	YUKON TERRITORY	
	NORTHWEST TERRITORIES	
12*		Mackenzie
13*		Keewatin
14*		Franklin

* Number 1 is used for-Multi-Unit Code

Note: for maps referred to in this article look at the end of the volume.

ACTIVITIES IN THE FIELD OF ECONOMIC REGIONALIZATION IN THE NETHERLANDS

HENDRIK J. KEUNING, ADRIAN C. DE VOOYS

Economic regionalization is an old problem in the Netherlands. As early as the second half of the 19th century, several government offices felt the necessity for a division of the country on a more economic or economic-geographic basis as a consequence of the inadequacies of the politico-administrative division of the Netherlands. This necessity can be easily explained, if one realizes that institutions of the government and other authorities are confronted in their activities with the spatial differentiation in the economic and social structure, and the more so, if beside their national task they also have a regional one. They will be best served in these circumstances by a grouping of facts and phenomena (within their sphere of government) after regions which are to a great extent homogeneous and in which the regional particularities, displayed by these facts and phenomena are shown most pronouncedly. So it will be easier to take those regional particularities in consideration. If it is realized moreover that a quantitative representation of these facts, as given in statistics, is of the greatest importance for the authority concerned, it will be clear, why the Central Bureau for Statistics (Centraal voor de Statistiek) has also always been very interested in the problems of regionalization and even has taken the initiative in several cases.

With regard to the divisions of the Netherlands, which originated in this way, it can be premised, that they have been formed in a justified, one could almost say scientific, way and that in several cases the economic geographer has been very closely connected with their realization. Since all these divisions were aimed at application in practice, the economic geographer was automatically forced to adapt himself to the reality of the actual situation, that is to say to an objectivity which leaves no room for scientific constructions which always involve more or less the danger of subjectivism. None the less this does not mean, that these demands can be equally easily actualized with respect to the two main categories into which the divisions which are officially accepted or have been privately undertaken in the Netherlands, can be distinguished:

- a) Regional divisions of a simple or specialized character.
- b) Regional divisions of a complex or integrated character.

The regional divisions with a more specialized character display most clearly the above mentioned aspects. They have been formed for specific purpose and are based on a simple registration of the actual situation. Naturally when after a number of years the situation changed, the division had to be altered too. Like the name indicates, these divisions rest on the spatial differentiation in the dispersion of a complex of facts and phenomena, which together form a whole. These divisions are descriptive, and are in particular used for the grouping and publication of statistical data. Yet, from a geographical point of view, it is interesting to examine on what basis this grouping in spatial units has been effected.

The division of the Netherlands in agricultural regions is one of the oldest of this category¹. The first project was the work of W.C.H. Starling (1808—1878), a geologist and at the same time an agriculturist. In this last capacity he was especially interested in the agricultural systems used at that time. In his later years he distinguished 12 of these regions. Moreover, as a geologist he was struck by the connection between the agricultural regions and the soil types. At last he came to the distinction of 46 agricultural regions, based on a combination of these two factors. Naturally this distinction did not remain unaltered, as a consequence of the changes which took place in agriculture. Nevertheless the said combination became the basis for the regional divisions in the annual reports of agriculture which were descriptive, as well as for the agricultural statistics, that gradually developed.

At first these annual reports were based upon the data provided by the municipalities in the various agricultural regions. After 1934, these data were taken from an annual agricultural inventarization, the data being collected directly at the farms. Not only this appeared to be an easier way to collect the economic data needed, but also a better distinction of the agricultural regions, according to their types of farming was made possible now. Also municipalities, which had within their territories different types of soil, and consequently different types of farms, could now accordingly be subdivided. Summarizing — and this is more or less true for the other divisions of this category too — by the way the data are collected they furnish a multitude of facts, divided after municipalities, or even parts of municipalities, which can be of great value for attempts to a more integrated regionalization.

As a counterpart in certain respects to this division into agricultural regions could be mentioned the division into economic geographic regions, used for the censuses of occupations and trades, which are organized by the National Statistical Service. The division was first used in the census of 1920 and is commonly applied for publication of statistical data.

The history of this division is more or less wrapped in darkness. Yet one can ascertain that, as agriculture does not easily lend itself to be further detailed according to criteria for occupations and trades, this division in the first place is suitable to show a spatial differentiation in the dispersion of activities of secondary or tertiary production. In particular it shows the regional diversity of manufacturing industry to full advantage. For this and other reasons a division has come into being of regions, which are homogeneous in activities, but have very

¹ S. Korteweg, *De Landbouwgebieden in Z. W. Sneller. Geschiedenis van de Nederlandse Landbouw 1795—1940*, 2e druk 1951, p. 281 e.v.

irregular limits — at first even enclaves and exclaves². So it supplies no basis for a regional economic planning. Consequently this division never really became popular.

On quite different bases rested the division of the Netherlands into traffic regions (transport of goods and passengers). These were introduced respectively in 1941 and 1943 by the Central Bureau for Statistics for the publication of data in these fields.

In forming a division for the transportation of goods, the starting-point was the concept that since transportation aims at bridging spatial distance between two regions, which have a certain tension of needs towards each other, the traffic regions (or better transportation regions) have to coincide with regions, that show a great deal of homogeneity with respect to this tension of needs. This homogeneity can e.g. be sought in the supply of surpluses of a specialized production in agriculture and industry, or in a pronounced function with regard to commerce and traffic with foreign countries, like e.g. in the seaport regions. In forming the traffic regions for the transportation of goods one could start from the already existing division in regions of the Chambers of Commerce and Industry (*Kamers van Koophandel en Fabrieken*) (see below), which had been formed according to a similar principle. This connection was the more efficacious since the same regions, or combinations of them, also formed the sections of jurisdiction of a government institution which had been established in 1934 in connection with a state of emergency in the inland navigation. Consequently this division into 21 traffic regions was in general lines similar to the division made for this government institution³.

The above mentioned principles, efficacious though they may be with regard to the transportation of goods by water and the irregular traffic on the road, appeared not to be useful to form a division of the Netherlands into regions for passenger traffic. For this is a branch of transport, that is much more directed towards central places, often with urban characteristics.

In 1942 two enumerations were held in the whole country of the traffic by motor buses, in which particular attention was paid to the places of provenance and destination of the passengers. This did not only make it possible to recognize the centres which most stand out in this respect, but moreover furnished data for the delimitation of the regions, from which the greatest part of the traffic originated, that is to towns with a strongly developed central function. On this basis a division of the Netherlands in 19 traffic regions could be constructed⁴.

From these descriptions of the different types of regional divisions of a simple kind the conclusion can easily be drawn that they are used only side-by-side, because their boundaries do not coincide. But it will be clear that the wish has repeatedly been expressed to come to a division in which all these divisions would coincide. Naturally it will

² J. Ch. W. Verstege, *Het regionale element in de statistiek*. Bulletin de la Société belge de Statistique 1957.

³ H. J. Keuning, *Indeling van Nederland in verkeersgebieden*. Tijdschrift voor Economische Geografie, 1941, p. 97—106.

⁴ *Indeling van Nederland in verkeersgebieden (II)*. Verkeersgebieden voor het personenvervoer. Maandstatistiek van Verkeer en Vervoer in Nederland 1943, p. 182—185.

be impossible to satisfy this wish, as long as the spatial differentiation of a given economic activity, or the way of living which results, is made the object of such a division.

In fact, this wish means the demand for a division of the Netherlands into regions, in which all the ways of living are integrated into one complex whole. On the one side, it can be put as a minimum requirement for such divisions, that the individual regions show a certain homogeneity as regards their activities, with other regions. On the other side, these regions should, with regard to their internal relations too, form an integrated unit. One can assume in this connection, that the formation of a division of this kind entirely meets the purpose of a real economic regionalization. But one cannot avoid to be confronted with the question, what has to be understood by an economic region of this kind. Without starting a thorough discussion it is necessary to point out the contrast between an economic geographic division and a regional-economic division. Between these two a choice has to be made⁵. The difference results from the content one gives to the concept regio. These two different divisions are characterized by Verstege, who says that the economic-geographic division is based on difference and equality in structure, the regional economic division on difference and equality in orientation⁶. In our opinion, however, this formulation does not bring us much nearer to the aim, which is claimed by regionalization.

An economic-geographic region derives its unity from a certain degree of homogeneity in its economic structure, or one may say, in the way of living of its population. This homogeneity is often multi-featured, that is to say, that there are found in a region different activities which on the one side are not characteristic of the region, but dispersed all over the country and, on the other side, there are activities found in this region only, especially with regard to manufacturing industry. As indicators for setting apart a region especially those branches of industry are chosen, that export the goods and services they produce to other parts of the country or to foreign countries, that is to say, are basic in nature.

It will be clear, that regions, which are constructed in this way, are excellently suited to be the units for governmental authorities, which have a task regarding regional economic planning. They make it easier for these authorities to understand the problems of those branches of industry which are concentrated in their region.

On this basis, as early as 1920, the division of the Netherlands into the 36 regions of the Chambers of Commerce and Industries took place. The accomplishing of this division was for a great deal the work of H. Blink (1852—1931), at that time Nestor of the economic geography in the Netherlands⁷. The data for these economic-geographic regions

⁵ According to the way of formulating of Verstege (op. cit. p. 15). This dilemma is also found in American geographic "uniform region" and "nodal region" (American Geography 1954, p. 36) and in French literature in the distinction by le Lannou of "region économique" and "region urbaine" (Géographie humaine 1949, p. 117).

⁶ Verstege, op. cit. p. 13.

⁷ Zie o.m. H. Blink, De taak der Kamers van Koophandel en Fabrieken in Nederland op economisch-geografisch gebied. Tijdschrift voor economische Geografie 1924, p. 165—174.

can be taken from the census of professions (or in the present-day situation perhaps better from censuses of industry and commerce). Yet they display some hiatus which make them less suited to the purpose of an economic regionalization. It should be mentioned that in first instance the delimitation rests on the number of employees or "Berufstätigen". Consequently the real quantitative economic importance of these industries for the total economic life of the regions is not sufficiently indicated, since the number of employees is only an unefficient indication. This also is true for that part of the working population, which is not working in the pronounced basic branches of industry, but often is related to them in the form of small undertakings or of services, which are so difficult to express in statistics. In the third place the importance of the urban agglomerations is neglected in these divisions in economic-geographic regions. Apart from the regional-economic divisions there is the division in economic-geographic regions which forms its counterpart. That division is based on the relations which exist between a region and a central place (often a city). The delimitation of this region is determined by the area of these relations. Most generally speaking, the economic unit formed by several regions, which is constructed this way, can be characterized as the city and its area (i.e. the area which is served by the town). There are difficulties connected with this division too. In the first place it should be mentioned that the relations with the central town are connected for the greatest part with the sphere of consumption or, in other words, of the service functions that are exercised by the central place. As a result, actual economic structure of the region remains invisible. This is particularly regrettable as the industries in question are often exporters with regard to the region, and thus perform a certain function with respect to other regions or to the whole national economy. In the second place practice has shown that the data in question are often difficult to collect and even more difficult to quantify. Most often one has to use indirect data, such as the frequency of traffic services, carrier services etc.). But statistical data about the transportation that really takes place are difficult to get and moreover do not exist for all the services. Several methods have been developed which can give an indication of the intensity of the services that are exercised by the concerned urban centre (see below). But this does not tell us much about the size of the region which is served by the centre. And these methods do not give much more than a comparison between the centres. One can determine whether the service function of place A. is more intensive than that of place B., but one is left in doubt about the extent of the services, expressed in money or in the number of professionally involved people.

A third difficulty, resulting from these insecurities, is that the towns which have to function as the centres in a regional-economic division like this, are more or less arbitrarily chosen.

Notwithstanding the above mentioned objections, in the Netherlands too, attempts have been made in the direction of setting up a regional-economic division. In the first place one may point out to the already mentioned division into traffic regions for passenger traffic, which has many characteristic features of such a regional-economic division. More interesting, however, was a project which was made in 1941 by the National Statistical Service. To this purpose the municipalities (the

smallest administrative units about which detailed data exist), were joined together to form complexes that are homogeneous in three respects, namely the types of farming, industrial structure, their relation with a certain place having a central function. In this way a division in 186 regions came into being⁸. These regions are like the pieces of a jig-saw puzzle, which can be used to make different divisions. The division into economic areas of certain towns was the most obvious one, especially for the purposes of market analysis⁹.

A similar way was followed in an attempt to obtain a sharper delimitation of the regional service function of the urban centres. For this purpose the different retail shops were evaluated on the basis of the 1930 census of industry and commerce, according to the frequency of the demands they satisfied. In this way the specialized businesses, which need to service a large area, have been accentuated. By comparing the sum of the evaluated service units with the population of a place, one can have an idea of the intensity of the servicing functions of this place and its area. It even became possible to make a hierarchy of the servicing centres¹⁰. With the assistance of several other data too¹¹, with reference to the centrality of a place, a division was made, which was used as the basis for a vade-mecum of market analytical data that the Central Bureau for the Publicity has published in the newspapers of the Dutch press (Centraal Bureau voor de Courantenpubliciteit). In this publication, "rounded-off" provinces have been used, which are nothing else but a complex of urban service areas.

Summing up, one comes to the conclusion that neither an economic-geographic division, nor a regional-economic division is fully satisfactory when the purpose is economic regionalization such as described first. Yet it is possible to obtain a division which comes near to this purpose. But then one has to realize, that the regions resulting from a division of this kind will never be uniform, but will always form a complex whole composed of smaller units, either economic-geographic or regional-economic in character. In other words, this means that economic regionalization can only come into being by way of a staffel method. The starting-point for the development of a region according to this method is to be found in the principle of functionality. This principle says, and experience has proved it too, that as a consequence of the external exchange economic system we live in, a region breaks up into a great number of smaller units, each of them having a function with regard to other regions or with regard to the larger region as a whole. These units show by this function a great homogeneity, which is manifested in their most outstanding branches of industry, on which this function rests. It is obvious that we are concerned here with regions of an economic-geographic character, in which the outstanding branches of industry, which in this connection we could

⁸ Beredeneerde indeling van Nederland in economisch-geografische gebieden. Central Bureau voor de Statistiek, den Haag 1941. Zie ook H. Ferro: De indeling van Nederland in economisch-geografische gebieden Leiden, 53.

⁹ Ferro, p. 372 e.v.

¹⁰ H. J. Keuning, Proeve van een economische hiërarchie van de Nederlandse steden. T.E.S.G. 1948, p. 566—582.

¹¹ H. J. Keuning, Een typologie van de Nederlandse steden. T.E.S.G. 1950, p. 187—206.

call basic — in the terms of Alexander — can be taken from a census of industry, which is specified by communities. The specific function of the industries in question which is manifested in the amount of export from the region, can be found, if not quantitatively, in any case qualitatively, by inquiries. The spatial delimitation of these functional units can be further specified by taking commuting also in consideration. This makes it possible too, to examine to what extent the population of the surrounding municipalities is connected with the basic function of the region in question. This can be done for the Netherlands, which since 1947 possess statistics of commuting in which for every municipality the commuting population is distinguished after dwelling and working-municipalities.

A second category of functional units is formed by those places or cities which exercise a service function for a smaller area — possibly together with a basic function in industry or commerce. The intensity of this function, which can be said to be proportional to the area it covers, can be approximated according to the described above method. Besides this one, yet another method can be used for the Netherlands. In 1959, the State Service for the National Plan of the Netherlands (Rijksdienst voor het Nationale Plan)¹² made a distinction for every municipality between the part of the working population that is employed in basic industries and the part that works in non-basic industries¹³. Postulating a normal proportion between the basic- and the non-basic part, the municipalities can have a surplus or a shortage of non-basic employees. A surplus indicates the existence of a regional service function or a strong development of commuting, moving out of the community. The statistics of commuting can be used to measure the intensity of this movement. Since in these calculations absolute figures are used, it is also possible to get an impression of the quantitative amount of this service function.

By combining these two categories of functional units, a larger economic unit can be composed, which resembles a regional-economic region. In doing so, it should be remembered that the regional service function or a larger city can cover different functional units, and can outweigh the influence of smaller centres within such unit.

As regards the application of the method developed here, it has to be admitted, on the one side, that it has not yet been realized to full extent. But, on the other side, it can be reported that using the principle of functionality, a timid attempt¹⁴ has been made along these lines. Further experience has thought that in this way a division was obtained, which is also useful for a broader and more purely geographic regional description of the country.

¹² Rijksdienst v.h. Nat. Plan. Comm. voor regionale bevolkingsprognose. Tweede rapport. Den Haag 1959.

¹³ On basis of a division of the different activities according to the criteria: basic or serving function.

¹⁴ H. J. Keuning, Mozaiek der functies. Den Haag 1955; see also the enclosed map.

ECONOMIC DIVISION OF THE NETHERLANDS

as presented on the map "A provisional concept of a functional division of the Netherlands" by H. J. Keuning

1. Region of the Groningen marshes. Agriculture on clay-soils, a. Hoogeland (mixed cropping), b. Oldambt (wheat dominant).
2. Frisian and Groningen cattle and dairy region, cattle rearing on an exclusively grass. Land basis (either clay, peat or sand); export of cattle and dairy products. a. sub-region of the Groningen Westerkwartier (mixed farming stronger developed).
3. Region of the peatbog colonies (veenkoloniën) and the adjacent sand-regions which adopted the agricultural veenkolonial-style. Mixed agriculture and industrial agriculture: production of fodder cereals for the inland market. Agricultural industry: exporting (strawboard and potato-flour). Subregion b. and. e. additionally industrialized by non-agricultural industries (shipbuilding, metal-industries, textiles). a. and c. adjacent sand regions (Woldstreek, Westerwolde).
4. Region of the so-called "Drents Plateau". Dairy production on the basis of mixed farming on a sandy soil (moraine).
5. Town of Groningen. Central region function dominant for a vast region.
6. Region of northeastern Overijssel. Mixture of farms types which are characteristic for the regions 3 and 4.
7. Cattle and dairy region of northwestern Overijssel. Cattle rearing on an exclusively grassland basis; comparable with no. 2, although cattle-breeding for export is lacking.
8. Industrialized cattle-rearing region of southern Overijssel and eastern Gelderland (Achterhoek) on the basis of mixed farming on sands. Dairy products and meat (pork) for inland and foreign markets. Industry, partly agricultural, partly consisting of light industries of several kinds.
9. Industrial region of Twente. Cotton-textiles and machinery dominating.
10. Glacial plateau of the Veluwe. Service function consisting mainly in the field of recreation.
11. Border region of the Veluwe. Strongly industrialized (various industries, especially textiles and metal works). Service function: dominantly residential.
12. Region of the Gueldrian Valley (Gelderse Vallei). Subregion a: cattle rearing on exclusively grassland. Subregion b: comparable with no. 8 (exporting character of agriculture more pronounced, however, by specialization on egg-production and meat-poultry).
13. Riverclay region of the upper Rhine and Meuse delta. Mixed farming combined or intermingled with market-gardening (vegetables) and orchards. As to industries: brick-making is dominant.
14. Agricultural region of the lower Rhine- and Meuse- (and Schelde) delta, with specialisations on the separate islands and in the various mainland regions (e.g. sugarbeets, wheat, onions, market gardening, etc.).
15. Region of the coastal dunes of the south-western archipelago. Service function: recreation with strong aspects of social tourism (campings).
16. Industrialized sand-region of North-Brabant and northern Limburg. Comparable with no. 8, with industrialization stronger developed, (strong concentrations in

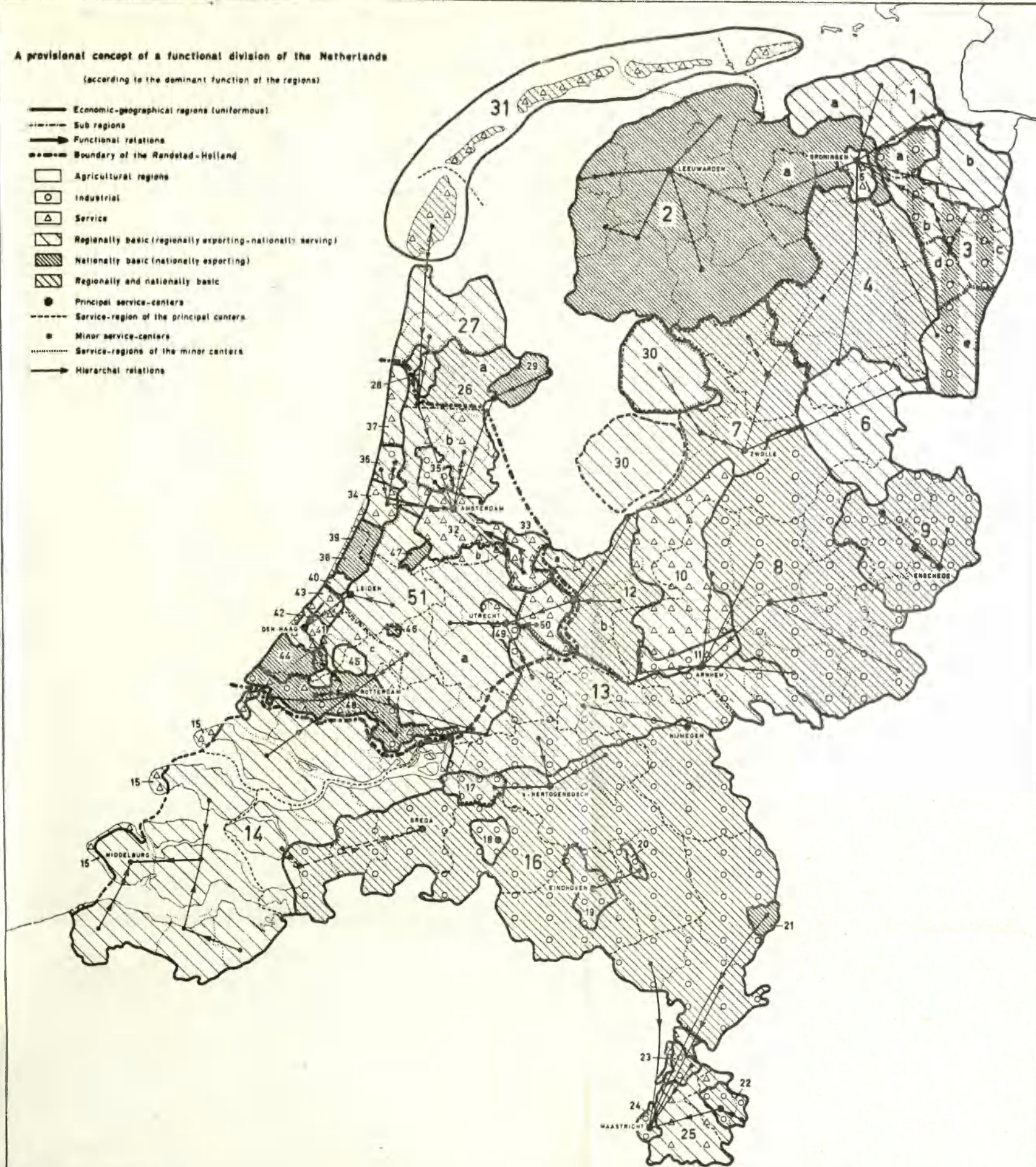
- several towns: o. a. Bergen op Zoom, Roosendaal, Breda, Oss, 's-Hertogenbosch, Nijmegen, Weert, Venlo, Tegelen.)
17. Industrial region of the Langstraat. Shoe- and leather industry dominating.
 18. Industrial region of Tilburg. Woolen-textiles dominating.
 19. Industrial region of Edinhoven. Varied industries, with a strong domination of electro-technical industry (Philips works).
 20. Industrial region of Helmond. Cotton-exitiles and metal works dominating.
 21. Horticultural region of Venlo. Mainly vegetables.
 22. 'Old' coal mining region of Heerlen — Kerkrade.
 23. 'New' coal mining region. Coal-mining connected with chemical works.
 24. Industrial agglomeration of Maastricht. Varied industries with outstanding ceramic-works.
 25. Hill region of southern Limburg. Agriculture and mixed farming combined with orchards. Service function mainly touristic and recreational.
 26. Cattle and dairy region of Hollands Noorderkwartier. Cattle rearing on an exclusive grassland basis (peat and old marine clay of reclaimed lakes). Sub-region b: dominion of milk production for the agglomeration of Amsterdam and the adjacent regions. Moreover commuters-region.
 27. Agricultural region of Hollands Noorderkwartier.
 28. Market gardening region of Geestmerambacht. Mainly cabbages.
 29. Market gardening region of the Streek. Production of flower seeds prominent.
 30. Agricultural region of the Jsselmeerpolders (Noordoostpolder and East-Flevoland).
 31. Region of the Wadden-archipelago. Service function: recreation with strong aspects of social tourism (campings).
 32. Agglomeration of Amsterdam. Service function as a port region (imports dominating) and as a national distribution centre for commondities and services.
 33. Region of Het Gooi. Service function: residential, mainly for commuters to Amsterdam.
 34. South-Kennemerland. Service function: residential, mainly for commuters to Amsterdam.
 35. Industrial region of the Zaan. Wood-working and foodstuff industries.
 36. Industrial region of the IJ-mouth. Heavy industries.
 37. North-Kennemrland. Service function: residential and recreational, with strong aspects of social tourism (campings).
 38. Bulb-region (Bollenstreek). Horticulture, specialized on bulbs.
 39. Region of the coastal dunes of Rijnland and south-Kennemerland. Service function: mainly touristical (hotels and pensions).
 40. Market gardening region of the Rhinemouth (Rijnsburg). Specialized on vegetables and flowers.
 41. Agglomeration of The Hague. Service function mainly governmental and administrative.

42. Scheveningen. Service function as no. 39, but stronger 'international'.
43. Wassenaar etc. Service function: residential, for commuters to the Hague and Rotterdam.
44. Market gardening region of the Westland. Market gardening under glass, specialized in tomatoes, and grapes and cucumbers (mixed, man-made, sandy soils).
45. Market gardening region of Berkel. Market gardening under glass (on peat and clay).
46. Horticultural region of Boskoop. Specialized on roses and bushes (conifers).
47. Horticultural region of Aalsmeer. Specialized on flowers (under glass).
48. Agglomeration of the Lower-Meuse-region, Service function: international transport. Among many industries: shipbuilding, metal-working and chemical works (oil-refineries) are dominating.
49. Agglomeration of Utrecht. Service function: traffic (railways-centre) and administration. Varied industries.
50. Region of the Utrecht glacial ridge. Service function: residential but stronger nationally than no. 33.
51. Rural centre region of the Randstad-Holland. Cattle rearing and dairy production on peat; agriculture on marine clay of reclaimed lakes. Subregions b. and c. similar to no. 26 b, but orientated on resp. Amsterdam, Rotterdam and The Hague.

A provisional concept of a functional division of the Netherlands

(according to the dominant function of the regions)

- Economic-geographical regions (uniform)
- - - Sub regions
- Functional relations
- ▬ Boundary of the Randstad-Holland
- Agricultural regions
- Industrial
- △ Service
- ▨ Regionally basic (regionally exporting-nationally serving)
- ▩ Nationally basic (nationally exporting)
- ▧ Regionally and nationally basic
- Principal service-centers
- - - Service-region of the principal centers
- Minor service-centers
- - - Service-regions of the minor centers
- Hierarchal relations



THE ECONOMIC REGIONS IN THE FEDERAL REPUBLIC OF GERMANY

SIEGFRIED SCHNEIDER

The problem of division into regions is one of the main — and I may say — classic tasks of regional geographical research. Presupposition for solving this task is to know the essential features of the region concerned, to comprehend it as a whole, and to define its limits on the basis of its specific character.

Besides the comprehensive division of geographic environment — natural and cultural — regional geography is also asked for special delimitation according to different geographical features so as natural regions, functional regions, central places with their spheres of influence and economic regions.

Since 1955, when the German Geographical Congress at Hamburg established a research program for delimitation of the economic regions in the Federal Republic of Germany, a working group of the Central Committee on German Regional Geography together with the Institute of Regional Geography at Bad Godesberg began this studies. Dr. Otremba, Professor of Economic Geography at the University of Hamburg became Chairman of the working group. The Institute of Regional Geography supplied the editorial staff. The 30 members of the working group were chosen because of their special knowledge of the economic geographical conditions within various regions of Western Germany. The first step was to create a basic map in the scale 1 : 300,000 showing the boundaries of regional economic units. During regional conferences, excursions and numerous discussions the materials were collected and edited according to the principle of the progressive regional geographic survey. After five years of work the first issue of the outline map 1 : 1,000,000 was presented in 1960 at the International Geographical Congress of Stockholm.

In 1961 we presented this outline map together with 28 sheets of the basic map 1 : 300,000 and a book with 382 short descriptions of each regional economic unit. In the year 1964 we hope to publish The Handbook of Economic Regions in the Federal Republik of Germany the survey map 1 : 1 mln and a set of 28 maps 1 : 300,000, showing the subregions in combination with the boundaries of communities.

Our aim was to show the regional differentiation of the economic structure within the Federal Republic of Germany not only as a tool of geographic description but even more as the base for regional economic statistics and regional planning.

In regions with high population density and with a long and very varying economic and social history we have more difficulties in administration and planning than elsewhere. Therefore an exact inventory is needed as a preliminary basis for development of planning.

The complex of local economic production as a whole was the point of departure for this research work. The "regional economic unit" (Wirtschaftsräumliche Einheit) is an individual specific region according to its total economic contents and structure. The delimited economic regional units are specific, they should not be classified into types. Their boundaries are found individually as well. Each part of the boundary line can be determined by different criteria according to the real difference between neighbouring units.

The criteria for delimitation of economic regional units are taken from all spheres — geographic, economic and sociological. In Western Germany most of the economic regional units derive their characteristic structure from the regional coincidence of industrial and agricultural forms of economy. Therefore it seemed useful to combine in a synthesis the characteristic features of the agricultural and of the industrial sector. The relative dominance and the mutual interactions had to be studied.

In the division into economic regions, the population, its density, its economic structure and the distribution of social groups were important points in assessing the structure and thus the regional boundaries. The proportion of the population employed in handicrafts and industry as well as in agriculture and forestry compared with overall employment figures was of decisive importance.

The use of exact comparative data for measuring the dominant features in each region should be suggested. We renounced it, because statistical data in all cases inform more of typological character of a unit than of real criteria for establishment of an individual complex. Moreover the schematic application of threshold data would lead us to serious mistakes.

The delimitation was relatively easy in regions with dominance of agriculture. The boundary lines of different agricultural production coincide generally with the boundaries of soils, types of farming, structure of ownership etc.

The characteristic features in industrial regions were specialization of production, size of factories, housing conditions of the workers, transport facilities etc. The limits between the economic regional units were assumed to be there where the individual complex of those elements was changing and another distinct occupying adjoining area, complex began.

In the neighbourhood of industrial locations many households are linked both with industrial places of work and with small farms (Arbeiterbauerntum). Here the limits of economic regional units could be established where the agricultural production begins to dominate or to decrease.

Regions of a specially developed tourism have a character of their own. Their boundaries are there where tourist facilities and their personnel do not any longer dominate in the economic and social life.

Functional interconnections were not taken usually into consideration; however they had to be analyzed in the vicinity (Umland) of larger cities; the central city has so powerful an influence on the structure of the economic elements within its neighbourhood that the whole economy of this area rests on those functional connections. In such case, the regional differences in the structure of agricultural production near cities and also of industries in comparison with functional connections are of diminished importance for the delimitation.

As a proof of the scientific reliability of these boundaries we may consider the fact that in the contact areas studied by several research workers they are adjusted together.

The size of the regional economic units depends neither on area nor on population figures, but on the general characteristic features of the unit concerned.

In the course of the research work the difficulties of obtaining a uniform size of the units were discussed several times.

In general the most extended units were established in agricultural regions, while significantly specialized industries (Neubeckum, Kannebacher Land, Velbert, Idar-Oberstein) formed relatively small units. For practical purposes, the boundaries of regional economic areas were assumed to coincide with those of the communities, those being the smallest economic and statistical units in Germany. The Census of 1950 and of 1961 in the Federal Republic of Germany offer nearly 40 data about economic and social structure of the communities.

However we met with some difficulties in regions where we met the so-called "Grossgemeinden", bigger communities. The base map, used for this work, was the "Gemeindegrenzenkarte" 1:300,000 in 28 sheets, edited by the Bundesanstalt für Landeskunde und Raumforschung.

The research was on the basis of the method of regional geographic survey carried out systematically from place to place by observation of the characteristic elements of the economic life. This geographic research work was supplemented by regional statistical data, by regional literature and by regional and planning atlases.

The result of this team-work was presented in the 28 sheets of the map 1:300,000, in the outline map 1:1 million and in the text book. The 382 basic units are gathered up into larger regional units, which we called "economic districts" (= Wirtschaftsbezirke).

The 115 economic districts comprehend several (mostly 3—5) basic units. They were established on basis of the following principles:

a) Neighbouring basic units of equal or similar structure were combined, especially if the physical background was identical or similar (Nordwestdeutsche Geestgebiete, Odenwald, Spessart, Rhön).

(b) Neighbouring basic units of different character which form in consequence of their differences a larger area of balance and functional interactions were gathered together into functional districts (Ruhrgebiet, Braunschweig, Rhein-Main-Gebiet).

(c) In the neighbourhood of strong economic centres the surrounding units generally depend in their economic character on this centre. Here

the units were assumed to form a centralized district (Hamburg, Bremen, Stuttgart).

The above-mentioned districts are useful operational areas for regional economic policies. Their compilation was the first attempt in the establishment of a hierarchy of economic areas. The third step i.e. to form even larger areas is yet to be prepared.

As already mentioned, economic geographic division of Western Germany comprises 382 regional economic units and 115 economic districts. In comparison to the 427 Landkreises in the Federal Republic of Germany we have nearly the same quantity of economic units. The number of inhabitants is on an average 130,000 persons per unit.

Institut für Landeskunde
Bad Godesberg

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L'ÉTAT ET LES MÉTHODES DES RECHERCHES SUR LA RÉGIONALISATION ÉCONOMIQUE EN YUGOSLAVIE

SVETOZAR ILEŠIĆ

I

Avant 1957, les géographes yougoslaves ne s'occupaient pas systématiquement des problèmes de principes de la régionalisation économique et de la théorie de la région économique en général. Le problème a été, cependant, sporadiquement abordé par les économistes et planificateurs, surtout du point de vue de la classification précise des régions économiquement développées et celles arriérées. Aussi les staticiens s'occupaient du problème en essayant de préciser de soi-disantes "régions statistiques constantes". Le problème a été pratiquement abordé à l'occasion de la grande rédivision administrative du pays (1954—1955), quand les nouveaux arrondissements et les grandes nouvelles communes yougoslaves ont été formées. Les géographes y ont été souvent consulté, dans les cas spéciaux, sur la convenance ou inconvenance de la nouvelle rédivision du point de vue de la vie économique régionale. Mais comme on voit bien de l'aperçu que M. R. Petrović¹ a fait sur les essais faits jusque là sur la régionalisation géographique de la Yougoslavie, les géographes se sont limités, pour la plupart, à établir, dans leur travaux géographiques généraux sur le pays, un schéma de régions géographiques tout court. Ils y ont fait beaucoup de vains efforts pour trouver un mode assez objectif à délimiter ces régions géographiques en se servant simultanément des traits de la géographie physique, de la géographie historique ("culturelle") ainsi que de la géographie économique. Aussi s'il s'agissait d'apprécier les régions du pays du point de vue de leur utilité à la vie économique, ils se bornaient, pour la plupart, à l'appréciation, de ce point de vue, des grandes zones régionales physiographiques (Melik²). Il y avait même des cas d'une identification simple et tout à fait erronée des régions naturelles avec des régions économiques. L'exemple en est

¹ R. Petrović, O problemu geografske rajonizacije Jugoslavije. (The Problem of Geographic Regions in Yugoslavia). Geogr. Pregl. Sarajevo, 1 (1957), p. 104—135.

² A. Melik, Prirodno-gospodarska sestava Slovenije (Estestvenno-hozjajstvennoe stroenie Slovenii). Geogr. Vest, Ljubljana 18 (1946), p. 3—20.

le procédé de B. Z. Milojević³ dans son livre sur les vallées principales en Yougoslavie, où la région "de steppes", "la région méditerranéenne", "la région montagneuse" et même "la région continentale tempérée" sont considérées tout simplement comme "régions économiques". Ce n'était que A. Melik⁴ qui, dans un article général sur les régions économiques en Yougoslavie a fait le premier pas vers une vraie classification des régions économiques en désignant les nouveaux centres d'industrialisation yougoslave comme noyaux principaux en formation des régions économiques yougoslaves.

Les choses ont changé essentiellement depuis 1957. On a commencé de plus en plus, parmi les géographes yougoslaves, de tenir compte du fait que les problèmes de la délimitation et classification des régions économiques se rangent parmi les problèmes les plus actuels non seulement de la science géographique, mais aussi de la vie économique elle-même. L'initiative en a été donnée par le IV^e Congrès des géographes yougoslaves tenu à Belgrad en 1955. Une conclusion y a été faite d'élaborer un schéma préliminaire des régions économiques pour tout le pays. L'initiative fut suivie par le III^e Congrès des géographes slovènes (Portoróz, Istrie, en octobre 1957), où un schéma des régions économiques pour la seule République de la Slovénie a été discuté. Plus tard au V^e Congrès des géographes yougoslaves (Titograd, octobre 1958) un symposium spécial sur les problèmes de la régionalisation a été organisé et une commission constituée avec la tâche d'organiser les recherches sur les problèmes de régions et de la régionalisation en Yougoslavie. Malgré toutes les difficultés qui, à cause de la diversité géographique et économique extrêmement forte du territoire yougoslave ainsi que de la rapidité de l'évolution économique et sociale de notre pays, s'opposent à une exécution rapide des recherches de ce genre, la commission se trouve en plein travail et espère qu'elle aussi pourra, dans les années prochaines, attribuer, par son représentant, au travail général de la Commission correspondante de l'UGI.

Des premiers articles qui sont apparus sur le sujet dans les publications géographiques, statistiques et économiques yougoslaves depuis l'initiative de 1955—1958⁵, on voit que tout d'abord la théorie de la régionalisation en général a été abordée. Il s'agit surtout de la question du choix entre la conception „zonale" ou "homogène" et la conception „nodal" ou "fonctionnelle" de la région économique.

II

En Yougoslavie aussi, la discussion se trouva tout d'abord devant les questions de terminologie. Étant donné que les termes "rayon" et „région" sont usés aux sens les plus divers du mot et souvent même au sens identique, les géographes yougoslaves sont inclinés à ne pas les

³ B. Z. Milojević, Glavne doline u Jugoslaviji. Srpska Akademija Nauka. Posebna izdanja. Odd. prirodn.-mat. nauka, knj. 5, Beograd 1951, p. 130—150.

⁴ Melik A., Gospodarski rajoni v Jugoslaviji. Ekon. Revija, Ljubljana, I, 1—2.

⁵ S. Ilešić, Sur les problèmes de la délimitation et classification des régions géographiques d'après l'exemple de la Slovénie. Geogr. Vest., Ljubljana 29—30 (1957—1958), p. 83—140; S. Ilešić, Sur les problèmes de délimitation et classification des régions géographiques. Zbornik radova V kongresa geografa FNRJ, Cetinje 1959, p. 311—321; C. Malovrh, Sur les problèmes de délimita-

identifier simplement, mais au contraire, de les différencier nettement. Or, pendant que le mot "rayon" signifierait une unité territoriale ne servant que de moyen opératif, quelquefois purement technique, à une planification économique, pour la plupart dans le cadre d'une seule branche de la production (p.e. des "rayons" agricoles, ou même plus spécialisées comme p.e. les "rayons viticoles"), la "région" est considérée comme une réalité complexe représentant avec tout son contenu complexe un objet par excellence de la science géographique.

Pour les mêmes raisons nous persistons dans la conviction qu'il est nécessaire de traiter le problème de la régionalisation économique toujours en relation avec les questions de la régionalisation géographique en général (questions des régions physiques ou physionomiques qui sont les mêmes réalités d'espace sauf qu'elles sont classifiées d'un autre point de vue). Il nous paraît aussi inconvenable qu'on parle de l'espace géographique et de l'espace économique séparément, comme si celle-là n'était pas géographique par excellence. Il nous semble que c'est la notion de soi-disant "milieu géographique" qui se reflète trop dans une telle désignation de l'espace géographique. Mais on oublie trop souvent que, au moins en ce qui concerne les pays relativement fort peuplés, civilisés et économiquement développés, la considération du milieu géographique seulement comme milieu naturel est chose périmée et irréaliste, étant donné que le vrai milieu géographique est, dans ces pays-là, plus ou moins intensivement infiltré par des éléments "anthropogènes".

Tout ce qu'on appelle une région est donc, d'après notre avis, un morceau de la même réalité complexe d'espace. Le problème des divers principes de régionalisation ne consiste que dans les aspects qui nous dirigent en délimitant ce morceau complexe. Si l'on parle des régions économiques, ces aspects doivent être évidemment d'ordre économique. Mais, en tenant compte justement de la complexité du contenu de l'espace, il faut y comprendre le mot "économique" au sens le plus large du mot, c'est à dire y compris non seulement les faits économiques proprement dits, mais aussi tous les autres traits d'ordre humain qui ne sont déterminés par la vie économique que indirectement (habitat, organisation administrative etc.). La région économique correspond donc, selon notre avis, à peu près à la "human region" de la terminologie anglo-saxonne.

De même que nous ne sommes pas d'accord avec l'identification des notions "région" et "rayon" nous ne le sommes non plus avec la tendance qui se fait valoir surtout dans l'urbanisme et dans la planification régionale, d'appeler la région seulement l'unité territoriale d'un certain degré d'étendue. Nous sommes, au contraire, d'avis que tout ce que nous appelons région et régions économiques spécialement en tant que réalités d'espaces avec leur contenu complexe, doivent être nettement hiérarchisés puisque la vie économique et sociale qui s'y déroule, est aussi hiérarchisée. Pour cette raison nous avons rangé dans notre schéma préliminaire des régions économiques yougoslaves les régions en plusieurs degrés de

tion des régions géographiques en Yougoslavie. Zbornik radova V kongresa geografa FNRJ, Cetinje 1959, p. 323—332; C. Malovrh, A contribution to the economic-geographic determination of regions in Yugoslavia. Ekon. Zb., Ljubljana, 3 (1958), p. 81—96; Vl. Drujić, Problematika geografske rajonizacije Srbije (Problème de la division régionale de la Serbie du point de vue de géographie économique), Zbornik radova V kongresa geografa FNRJ, Cetinje 1959, p. 333—343.

l'échelle hiérarchique, depuis les grandes zones macro-régionales qui s'étendent d'une république à l'autre, par les macro-régions principales de chaque république jusqu'aux méso-régions et micro-régions.

Quant au choix des principes pour la classification des régions économiques, la discussion a démontré, en Yougoslavie aussi, qu'il est presque impossible de se servir simultanément du principe de homogénéité économique ("zonal regions") et du principe de gravitation ("nodal regions"). Jusqu'à 1957, presque toutes les tentatives de la régionalisation économique effectuées en Yougoslavie ont été orientées dans le sens des régions économiques homogènes (formelles, structurelles). La raison principale en est la prédominance jusqu'ici, dans la plupart de régions de notre pays, de l'économie agraire ainsi que la rareté et la faiblesse des grands centres de gravitation économique. On évitait le criterium de gravitation économique surtout en estimant que les grands centres et lignes de circulation et gravitation modernes ne sont pas encore assez développées en Yougoslavie pour pouvoir jouer le rôle du facteur principal déterminant la région économique, spécialement dans les régions économiquement arriérées et encore presque tout à fait agraire de notre pays. Même après la discussion de 1957—1958 certains géographes yougoslaves préfèrent le système de régions économiques homogènes en affirmant que, pour le moment, il correspond toujours mieux à la réalité économique du pays. Mais on voit bien d'un, parmi les essais de ce genre, le plus récent et le plus solide (celui de C. Malovrh⁶), que, malgré tous ses efforts de tenir compte aussi des sources d'énergie et des richesses minérales ainsi que d'introduire parfois même la facteur de gravitation, cette classification pousse trop au premier plan l'économie agraire qui dépend le plus directement des conditions naturelles de la surface en question. Elle néglige, sauf quelques exceptions, les grandes voies de communication qui relient souvent en unités fonctionnelles transversales les secteurs des diverses régions ou zones longitudinales homogènes. Elles place même quelques grands centres économiques du pays, d'où rayonne dans toutes les directions une vie économique intense, à la limite des deux régions économiques voisines (p.e. Belgrad, Maribor). Elle semble, en outre, hésiter entre le criterium des ressources naturelles disponibles (criterium de la classification des "régions potentielles") et le criterium de leur productivité effective, bien que celle-ci seule peut déterminer une région économique réelle.

C'est pourquoi la commission yougoslave pour les recherches de la régionalisation économique a concentré ses recherches sur les méthodes à classier les soi-disantes régions économiques fonctionnelles. Elle estime qu'en Yougoslavie aussi le temps est venu de faire entrer dans le procédé de la régionalisation économique, malgré la spécialisation marquée de la production dans certaines régions, aussi des éléments autres que la homogénéité de la production. Il s'agit surtout de la circulation et de l'organisation de la vie économique, celle-ci embrassant non seulement la production, mais aussi la distribution et consommation des produits. Bien qu'on est d'accord avec l'opinion de M. K. Dzięwoński⁷ qu'il ne faut pas ôter aux éléments des zones homogènes toute leur valeur fonctionnelle, il n'est pas moins vrai que cette valeur ne

⁶ C. Malovrh, ouvrages cités sous 5.

⁷ K. Dzięwoński, Elementy teorii regionu ekonomicznego. Przegl. geogr. 33, 1961, z. 4, p. 593—613.

consiste qu'en production et ne fait valoir que par les courants compliqués de circulation et organisation économiques. Pour cette raison nous préférons dans nos recherches sur les méthodes de régionalisation économique de tenir séparées l'une de l'autre la régionalisation "homogène" („zonal regions") et celle de "gravitation" ("nodal regions") mais enrichir la dernière en y introduisant outre les éléments de gravitation aussi des éléments dominants de la production "homogène". De telle façon la région devient vraiment "fonctionnelle". Il faut donc que la notion de fonction économique soit comprise dans le sens le plus complexe du mot. La gravitation proprement dite n'y est qu'un élément, bien que le plus important, de cette fonction, s'avancant d'autant plus au premier plan que la vie économique de la région en question est plus avancée et les courants de circulation économique plus vifs.

Le problème de la régionalisation économique de la Yougoslavie est, d'ailleurs, l'exemple le plus éloquent démontrant combien il faut être conséquent en se servant, dans la régionalisation économique, du critérium de gravitation en tant que du critérium principal, et qu'on ne peut le varier arbitrairement avec celui de production homogène. Remarquons comme les grandes zones longitudinales de production homogène en Yougoslavie s'allongent parallèlement à l'axe principale dinarique du pays, pendant qu'elles sont liées l'une avec l'autre par des lignes de circulation transversales, autour des lesquelles les principales régions économiques se sont formées ou sont en voie de formations. Cette relation entre les zones économiques "homogènes" et les régions économiques vraiment fonctionnelles est la plus marquée en Bosnie, les quatre grandes macro-régions (de Sarajevo-Zanica, de Tuzla-Doboj, de Banjaluka-Prijedor et de Mostar-Jablanica) y gravitent par les vallées principales, conduisant à travers les zones "homogènes", très différentes par leur production, vers les grandes lignes de communication longitudinales: les premières trois vers les lignes principales parallèles conduisant de Beograd à Zagreb, la dernière aussi vers le Littoral adriatique.

III

En ce qui concerne les méthodes utilisées dans les recherches de régionalisation économique en Yougoslavie, elles s'ensuivent de la conception théorique de la région économique fonctionnelle expliquée ci-dessus, d'après laquelle la fonction économique de la région représente l'entrelacement de diverses activités économiques plus ou moins organisées autour d'un centre de gravitation ou le long d'une ligne centrale de gravitation. C'est surtout l'étude de la gravitation régionale qui s'impose à nos efforts d'élaborer une base solide pour la régionalisation économique. Puisque la classification, la délimitation et la hiérarchisation des régions économiques d'après leur fonction doit correspondre de même à la hiérarchie des "lieux-centres", l'analyse des fonctions de ceux-ci y est indispensable. On va organiser pour cette raison des recherches systématiques sur les zones d'influence de ces centres. "L'influence" y est comprise dans le sens si large que possible du mot: il ne s'agit pas seulement de l'influence économique proprement dite (vente et achat, approvisionnement, afflux de la main d'oeuvre) mais aussi de l'influence administrative,

culturelle, sanitaire etc. Si ces fonctions d'ordre non directement économique sont en désaccord avec les fonctions économiques proprement dites, il est évident que la planification socialiste n'a pas encore réussi à bien adapter l'organisation de la vie économique et sociale à la réalité économique régionale, soit qu'elle ne suit pas assez vite le dynamisme des régions économiques existantes en transformations, soit, au contraire qu'elle dépasse leur évolution en essayant de la diriger.

En cherchant les méthodes de la régionalisation et en suivant le dynamisme régional on aborde aussi le problème du rôle des régions historiques et celui des unités administratives dans la classification et délimitation des régions économiques existantes. Nous sommes d'avis qu'il ne faut prendre en considération les premières que dans la mesure où elles exercent encore une influence notable sur la structure spécifique des régions en questions. En Yougoslavie, ce sont surtout les six républiques fédérales qui sont des formations historiques mais sont devenues aujourd'hui les principales régions économiques fonctionnelles du pays. Les unités administratives de deuxième et troisième ordre (arrondissements et communes) sont devenues en Yougoslavie, qui traverse une phase tellement importante de planification et décentralisation de son économie, aussi un très actif "géofacteur" de premier ordre dont il ne faut guère négliger le rôle.

IV

C'est justement ce dynamisme des régions économiques et unités administratives en formation et transformation qui fait des recherches sur les régions économiques un objet très important par la vie pratique aussi en Yougoslavie. Les géographes yougoslaves sont, au moins dans certaines républiques fédérales, constamment consultés sur les problèmes de la délimitation et classification des régions, soit par des institutions d'urbanisme et planification régionale, soit — quand il s'agit de question de la rédivision administrative et ses désaccords éventuels avec la réalité économique — par le pouvoir politique populaire. Il y a des géographes qui sont membres permanents des conseils de spécialistes ou des commissions spéciales correspondantes. Malheureusement, ils ne disposent encore que rarement des études déjà assez approfondies sur les problèmes régionaux afin qu'ils puissent satisfaire toutes ces demandes. Il manque surtout des études régionales systématiquement organisées et bien documentées. Mais il est à espérer que les équipes de jeunes géographes, qui sont en voie de formation, ainsi que la réorganisation en cours des principaux Instituts de Géographie du pays qui a pour le but principal de servir aux tâches pratiques de la vie économique et sociale, seront capables d'accomplir une de ses tâches principales, celle d'étudier minutieusement l'espace économique yougoslave et son évolution.

Institute de Géographie
Université de Ljubljana

METHODS OF ECONOMIC REGIONALIZATION IN USE IN THE GERMAN DEMOCRATIC REPUBLIC

GÜNTHER JACOB

The detailed reports on the development of economic regionalization in the German Democratic Republic have been presented by me in Liblice¹ (1957), as well as on the conference in Kazimierz² (1959) and some other conferences, among these, at the Annual Scientific Meeting of the Geographical Society of the German Democratic Republic in Potsdam³ during the Humboldt year in 1959.

My contribution to the discussions at the Section of Economic Geography of the XIX International Geographical Congress in Stockholm in 1960, "On the problems of Economic Regionalization in the German Democratic Republic"⁴, presenting the last state development of economic regionalization in my country, was circulated among all members of the Commission⁵. So here I will not enter once more into a detailed description of the present development of economic regionalization in the German Democratic Republic.

At present the theoretical and practical work on problems of regionalization in the German Democratic Republic is concentrated on five main points:

- 1) Establishment of economic areas of medium order, i.e. of regions greater than single districts,
- 2) reorganization of the network of rural settlements,
- 3) regionalization of various branches of industry (especially building materials industries),

¹ Zur Frage der ökonomischen Rayonierung in der Deutschen Demokratischen Republik, Geogr. Ber. H. 6, 1957.

² Der gegenwärtige Stand der ökonomischen Rayonierung in der Deutschen Demokratischen Republik. Problems of Economic Region. Prace Geograf. No. 27. Warszawa 1961.

³ Die innenbezirkliche Rayonierung als Problem der Gebietsplanung. Wiss. Zeitschr. Univ. Halle, Ges.-Sprachw. VIII/6, October 1959.

⁴ In: Geogr. Ber. 19 (2) 1961, p. 123—130.

⁵ See: G. Jacob, Die Bedeutung der Arbeiten zur innenbezirklichen Rayonierung des Bezirkes Halle für die Gliederung des gesamtstaatlichen Rayonetzes der Deutschen Demokratischen Republik. In: Wiss. Zeitschrift der Hochschule für Verkehrswesen. Dresden 7(1959)60, H. 3.

- 4) regionalization of agriculture,
- 5) establishment of traffic areas.

In speaking about these main points of theoretical and practical importance, I would like to stress the fact that we have now reached the moment, in which our knowledge is gained not only deductively and in which we do not only interpret the experience of other countries, above all of other socialist countries, as in the preceding years. All our recent work is connected with specific national economic needs. That is to say, our recent knowledge is gained primarily inductively, and the theoretical generalization can be practically verified.

Now let us return to the five main points mentioned above.

1. Two of the three taxonomic units used for the organization of economic areas in our Republic (of lowest, medium and highest order) correspond to the existing territorial administrative units namely the economic areas of the lowest order (district) and the economic area of the highest order (countries).

The economic areas of medium order (of the size of about two to four administrative districts) are however of great importance for areal planning as a unity of economic and technical planning, especially with regard to the localization of basic investments and secondary investments resulting from the first (e.g. construction of roads etc.). These economic areas of medium order are characterized above all by the existence of specific complexes as regards production, raw materials, the potential manpower, and transportation between the leading enterprises of this territorial unit. Generally the degree of productive concentration of these enterprises is very high.

Decisive factors among the criteria applied for ascertaining the economic areas of medium order are the special ratio of production and the degree of productive complexity. The importance of the other factors depends on the case on hand. The investigation of economic areas of medium order was accomplished in a relatively short time. This was possible, because — as for instance in the County of Halle, the most important industrial district of the German Democratic Republic — a great number of scientists, among them several economic geographers, administrative officials, and prominent experts of industry, agriculture, transportation, education and culture were engaged in this work within a well functioning body of areal planning.

These endeavours of finding out objectively existing economic areas within the entire regional network were strongly encouraged by the demand for a complex-territorial planning, in all branches of our national economy.

2. As already stated in my earlier papers that the "main place areas" as the smallest cells in the network of rural settlements, though belonging only to the regional network within the district, and not to the regional network as a whole, form an excellent basis for determining the boundary lines of economic areas of the lower order, which form part of the regional network as a whole.

The comprehensive investigations concerning the network of rural settlement aimed above all for a combination of production, supply and cultural areas into what was called "main place areas" (Hauptortbereiche). In most cases these main places are situated advantageously with respect

to traffic and meet the necessary requirements for cooperative centres. As a result, erection of new house, will be concentrated in these places.

A complex cooperation of "main place areas" results in establishing an economic area of the size of a district, i.e. the smallest economic area of importance for the state as a whole. Investigations on the rural network of settlements in several countries of the German Democratic Republic have proved that the boundary lines of the districts, apart from some necessary corrections, do not divide the "main place areas". The first two points relating to our present work refer to problems of complex regionalization, where as the following three points be called trade or branch regionalization.

3. The necessity of regionalization of various branches of industry results from a constantly increasing industrial specialization, concentration, combination and cooperation within socialist economy.

A specially interesting example, on which we are working at present, is the regionalization of the building and building material industries on basis of their specialization. As is well known, a rapid development from handicraft to industrial building has taken place in the more industrially developed countries. By specialising on a technological basis the building enterprises change their respective catchment areas. Under socialist conditions the development of these territorial catchment areas is being systematically controlled and requires scientifically based regionalization.

We hope to be able to present soon results of these very interesting investigations, which are theoretically, methodically and practically highly important.

4. Studies of regionalization of agricultural production which were carried out mainly by the Institute of Economics of the German Academy of Agricultural Sciences, in Berlin, are of specific importance, because in this very sector of trade or branch regionalization, in which the natural factors play a decisive part, even in Socialist countries a full agreement as to the methods to be applied so far could not be reached.

The value of agricultural regionalization for the improvement of the local distribution of agricultural production and for establishing proper correlations with other branches of national economy is based on the establishment of larger, territorially stable agricultural areas with similar natural and economic conditions. It was decisively proved that by means of agricultural regionalization an increase of gross production in agriculture, of the income per hectare of arable land and of the productivity of labour could be effected. Besides, by means of these investigations the way of raising backward areas to the level of higher developed areas was shown.

5. The establishment of traffic areas meets the direct demand for a better coordination between economic planning on national level and operative traffic planning. In a narrower sense an improvement of freight traffic planning in the complete division of the territory of the German Democratic Republic into traffic areas presupposes a systematic analysis of all experiences hitherto obtained both in the sphere of complex and of trade branch regionalization. It is the aim of the traffic regionalization carried out by us at present, to achieve a coordination between areas

for which the traffic demands are ascertained and catchment areas of actual transport.

Now let us pass to remarks on the points fixed by the Chairman of the Commission in his first draft of our programme of work.

1. PRINCIPLES AND THEORIES PERTAINING TO ECONOMIC AREAS AND REGIONALIZATION

First, all authors in my country showed recently a remarkable conformity, as far as questions of regionalization of the State as a whole were concerned.

The thesis, increasingly supported in socialist countries that as economic areas represent territorial production complexes specialized in one or several specific products as compared with the whole state, in which the productive complexity within the district is greater than the complexity with respect to neighbouring districts⁶, forms the basis of all the works by Schmidt-Renner, Dietrich, Jacob of others.

Decisively greater difference of opinions is evident about what is called trade or branch regionalization, as it is practised when establishing industrial, agricultural or traffic areas. There does not yet exist a generally acknowledged theoretical and methodical agreement of thought. This is not astonishing, as at present these practical investigations are in the foreground.

2. METHODS OF REGIONALIZATION

Comprehensive methodical experiences concerning regionalization were gathered in establishing economic areas of medium order. Reports on this question were made by Dietrich, Proske and Jacob.

In this connection a paper by Dietrich⁷ is especially noteworthy, in which the importance of the particular criteria is clearly demonstrated on the example of the medium economic area of Eisleben — Sangerhausen — Hettstadt, the so-called coope triangle of the German Democratic Republic.

In studying the economic areas of medium order for the County of Halle, the following criteria were applied⁸:

- 1) Peculiarities of historical development
- 2) Geographical conditions (geomorphology, waters, climatic conditions, plant surface cover)
- 3) Kind and extent of economic specialization
- 4) Degree of economic complexity (extent of self sufficiency)

⁶ G. Jacob, Zur Problematik der ökonomischen Rayonierung in der Deutschen Demokratischen Republik. Geogr. Ber., 19 (2), 1961, p. 124.

⁷ R. Dietrich. Kriterien für die Bestimmung von Wirtschaftsgebieten, untersucht am Beispiel des Bezirkes Halle. Dipl. Arbeit, Hochsch. für Ökonomie. Volkswirtschaftliche Fakultät, Berlin 1959, unveröffentlicht.

⁸ G. Jacob, Zur Problematik der ökonomischen Rayonierung in der Deutschen Demokratischen Republik. Geogr. Ber. 19 (2), 1961, p. 128.

5) Relations conditioned by production, as for instance the location of industries in relation to the sources of raw material and fuel, catering or manufacturing enterprises or markets

6) Transport conditions (economical transport distances, centres of traffic, freight transloading points)

7) Structure of population (analysis of the potential workers)

8) Areas of periodic commuting of workers

9) Social and cultural relations on supra local level

10) Existing administrative areas (boundaries of districts)

11) Perspectives of development of leading branches of economy for at least seven years, though generally fifteen years.

In the field of organization of agricultural production studies of the German Academy of Agricultural Sciences for the County of Potsdam likewise brought out some interesting problems.

Institute of Transport Geography
Academy of Transport and Communication
Dresden

BRÈVE INFORMATION SUR LES RECHERCHES CONCERNANT LA DIVISION ÉCONOMIQUE DE LA R. P. ROUMAINE

CONSTANTIN HERBST

En conséquence du développement général de l'économie nationale et de la répartition planifiée des forces de production sur notre territoire, ont apparus de nouveaux liens économiques entre diverses entreprises industrielles, entre les branches de la production matérielle, entre diverses régions du pays. Le développement et les changements essentiels dans la structure de l'économie nationale se reflètent de plus en plus profondément dans la structure et dans le niveau du développement économique de toutes les parties du pays, et — dans le cadre de ce processus — apparaissent et se cristallisent de plus en plus les régions économiques de la R. P. Roumaine.

L'étude des processus de formation et du développement des régions économiques sur le territoire de la R. P. Roumaine est d'une importance théorique spéciale pour l'étude de la géographie économique du pays. La mise en évidence de ces régions, l'étude du développement de leur économie, permettent l'approfondissement et la synthèse spatiale des changements qui ont eu lieu dans l'économie du pays.

L'étude de ces processus a aussi en même temps une grande importance pratique, parce qu'elle permet au chercheur de découvrir les conditions économiques et sociales les plus favorables du développement des diverses branches de la production matérielle sur le territoire du pays; de trouver de nouvelles ressources et réserves pour l'amélioration de l'activité économique et, ainsi, de découvrir de nouvelles possibilités pour redresser la productivité du travail; de contribuer à l'organisation plus rationnelle du territoire, au point de vue économique et administratif.

Le territoire de la R. P. Roumaine est divisé en unités administratives-économiques, notamment: régions, districts (en roumain = raion), villes et communes.

Pour délimiter ces unités on a pris en vue les conditions économiques, social-politiques, géographiques, historiques et nationales, de manière à créer d'unités territoriales harmonieuses "basées sur l'étude de leur structure sociale-économique et tenant compte de la perspective du développement des forces de production du pays, contribuant à liquider la demeure en arrière de certaines régions".

Partant de ces critères, le territoire du pays est divisé en 16 régions administratives-économiques qui, vu le développement de l'économie nationale et les nouvelles relations économiques créés entre les diverses parties du territoire du pays, ont obtenu une certaine spécialisation et un degré de complexité de leur économie, correspondant à des unités économiques de second degré (en roumain = mezo raion).

Les régions (= mezo raion), à leur tour sont divisées en 149 districts administratifs, et la ville de Bucarest en 8 districts urbains. Ces districts constituent des unités administratives-territoriales plus petites, ayant un degré de complexité de leur économie moins développé que celui des régions.

Les districts administratifs se groupent, dans le cadre des régions — en certains cas — en unités économiques de troisième degré (en roumain = micro raion).

Les études ont confirmé qu'entre la division politique-administrative et la division économique, il n'y a pas de contradictions, mais, au contraire, elles se superposent; que l'apparition des centres de gravitation et mouvement de population vers ces centres, sont étroitement liés avec le niveau et avec la direction du développement économique. On a pu observer, aussi, que dans le cadre du développement de l'économie nationale, le rôle de certains centres de gravitation bien connus dans le passé a changé, leur importance augmentant ou diminuant. De même, comme résultat du développement économique, ce sont de nouveaux centres de gravitation qu'on a créés. C'est en relation avec ces changements que se sont modifiées la direction des transports et celle du mouvement de la population. Le développement des régions administratives-économiques entre 1950 et 1960, les changements qui ont eu lieu dans leur structure économique, ont consolidé, de plus, leur caractère d'unités économiques de second degré (en roumain = mezo raion economic). Leur spécialisation s'est cristallisée avec plus de clarté, leur degré de complexité économique a augmenté, les liens économiques se sont cimentés.

Pour confirmer le caractère d'unité économique de second degré de nos régions administratives-économiques actuelles, un grand collectif de géographes roumains de l'Institut de Géologie et de Géographie de l'Académie de la R. P. Roumaine et des trois universités de notre pays, a effectué des études sur le terrain dans les districts administratives-économiques et a rédigé les synthèses des régions administratives-économiques, tout en interprétant un vaste matériel statistique.

Dans ces études on a eu en vue les éléments de base suivants, afin de délimiter et de caractériser les districts économiques:

- 1) les conditions naturelles et historiques du développement des territoires respectives,
- 2) la population et l'économie des régions dans leur développement,
- 3) les liaisons économiques dans le cadre des régions administratives-économiques — qui les cimentent dans les unités territoriales-économiques.
- 4) les liaisons économiques interrégionales,
- 5) les éléments de perspective du développement de l'économie des régions administratives-économiques et les changements qu'on entrevoit dans le développement des liaisons économiques intrarégionales et interrégionales.

Dans l'étude des liaisons économiques intérieures, par lesquelles on justifie, principalement, le caractère d'unité économique de second degré des actuelles régions administratives-économiques, on a sélectionné les liaisons qui conditionnent le processus de la production matérielle.

Selon les mêmes critères on a sélectionné aussi les liaisons économiques interrégionales, tout en accordant une attention spéciale aux liaisons avec les régions voisines.

De cette manière on a pu faire sortir en évidence les liaisons essentielles qui cimentent, délimitent, la région administrative-économique comme unité économique du second degré.

Dans ce sens, nous considérons que l'élaboration du schéma de la division économique de la R. P. Roumaine, ne constitue pas le résultat de quelques études abstraites, mais la mise en évidence des processus, objectifs qui ont lieu dans notre pays, comme un des aspects du développement socialiste de l'économie nationale de la R. P. Roumaine.

Dans les travaux concernant la seconde partie du II^e volume de la Monographie Géographique de la R. P. Roumaine, et qui, à l'heure actuelle, est déjà paru, on a accordé un rôle important aux éléments de perspective du développement des régions administratives-économiques pour les évidencier comme unités économiques du second degré de notre pays.

La division administrative-économique est étroitement liée, comme l'on a vu déjà, avec le développement économique. Il en résulte la nécessité de vérifier périodiquement la division administrative-économique, ainsi que de délimiter de nouveau les régions économiques, par rapport au développement économique, portant des changements dans les liaisons économiques. C'est d'autant plus important pour la R. P. Roumaine, pays où l'économie nationale se développe aux pas rapides, produisant des changements quantitatifs et qualitatifs visibles d'une année à l'autre, dans l'économie des régions.

Les résultats obtenus dans ce domaine sont dus, surtout, au fait qu'une des préoccupations de base du Parti Ouvrier Roumain c'est le redressement économique et social-cultural des régions moins développées, de même que l'amélioration continue de la répartition territoriale des forces de production. Dans ce sens, les directives établissent comme une des tâches fondamentales "l'amélioration continue de la répartition territoriale des forces de production, l'augmentation du potentiel économique des régions, districts et villes moins développés".

La réalisation du plan économique pour les années 1960—1965, de même que des lignes directrices établies par le III^{-ème} Congrès du Parti Ouvrier Roumain en ce qui concerne le programme du développement de l'économie nationale en perspective, jusqu'à 1980, apportera de nouveaux et importants changements de la vie économique des régions, dont l'économie deviendra plus complexe encore, les liaisons de production dans l'intérieur des régions plus puissantes, et les liaisons interrégionales plus évidentes et plus organisées. Tous ces problèmes constituent des préoccupations importantes pour les géographes de la R. P. Roumaine.

RESEARCH ON ECONOMIC REGIONALIZATION IN SLOVAKIA

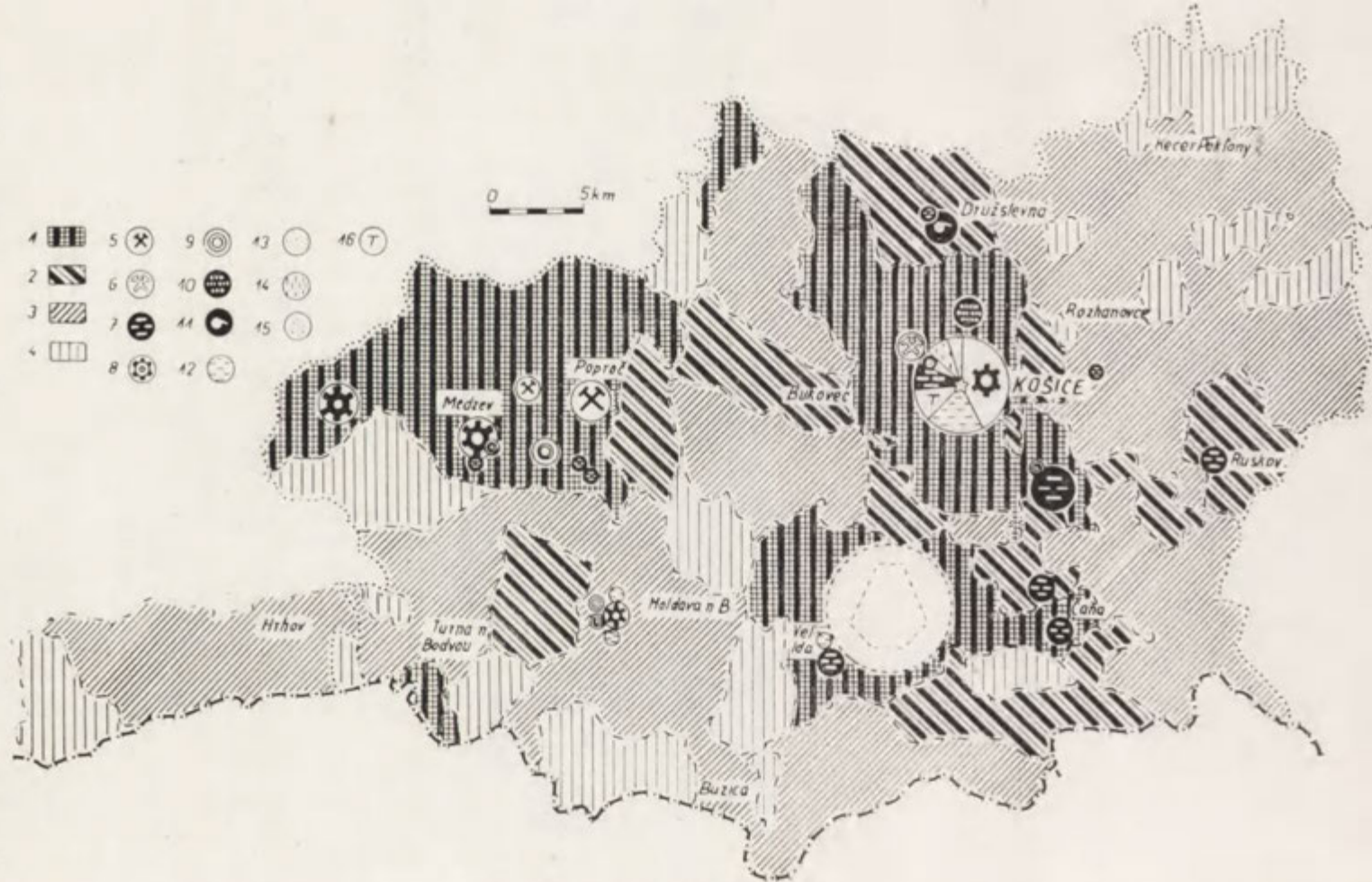
KOLOMAN IVANIČKA

The Geographical Institute of Bratislava University together with the Geographical Institute of the Slovak Academy of Sciences are at present doing some research on the economic regionalization in Slovakia. In the first stage it was decided to conduct some more detailed research on selected subregions. I would like to bring your attention to one of these studies — on East-Slovakian Iron and Steel Industrial Region (1700 km²).

This research was done in the scale of 1 : 25,000. The study included research on different aspects of geographic and economic environment. Its results are going to be published in a special volume consisting of about 400 pages of text and about 90 maps. The volume, which has extensive English summaries, is now in print and will be presented to the 20th International Geographical Congress in London.

Economic regionalization (which occupies the central place in this work) will be presented in the following manner:

I. The presentation of the function and place of the region studied within the framework of Czechoslovakia's national economy. Eastern Slovakia was in past one of the least developed regions of Czechoslovakia. After the second world war the new orientation of the region linked with the cooperation of the country with the Soviet Union made possible the economic activation of Eastern Slovakia following from its excellent geographical position. The most significant factor here is the import of raw materials — iron ore and crude oil — from the USSR. If the construction of the oil pipeline has made possible the development of chemical industries in Western Slovakia, it is the import of iron ore which is the basis of Eastern Slovakia's economic development. Near Košice a new metallurgical combine is being constructed with a production of more than 3 million tons of steel. Such a location of the combine has been dependent on the employment of local labour resources, on limestone and magnesite. This combine will produce 1/3 of Czechoslovakia's steel output. A whole series of engineering and machine industries will be constructed on the basis of the supply of steel from Košice and a number of chemical industries based on the supply of by-product coke-oven gas. The construction of this combine makes possible not only



Map 1. Industrialized zones

Key to the map: 1. 40.1—67% of earner population work in industry, 2. 35.1—40% of earner population work in industry, 3. 20.1—35% of earner population work in industry, 4. up to 20% of earner population work in industry, 5. ore mines, 6. non-ore mines, 7. industry of building materials, 8. engineering, 9. timber industry, 10. treatment and working of magnesite, 11. Chemical industry, 12. food and fodder industry, 13—14. other industries, 15. metallurgy of ferrous metals, 16. textile and clothing industry



Map. 2. Subregions of town centres and transitional boundary zones

Key to the map: 1. area closely connected with Košice, 2. area less closely connected with Košice and VSŽ (ESIW = East Slovakian Iron-works), 3. broader hinterland of Košice, 4. narrower hinterland of Moldava and Bodvou, 5. broader hinterland of Moldava and Bodvou, 6. transitional boundary zones, 7. district boundary, 8. state boundary, 9. other boundaries, 10. communities, 11. directions of gravitation

the development of the immediate surroundings but also the activation of the whole administrative region of Eastern Slovakia (18,000 km²).

II. The analysis of the area from the point of view of uniformity of internal homogeneous units to certain criteria. In this way we can delimit industrialized areas, areas of agricultural specialization, spatially similar areas from the point of view of employment, touristic areas and so on (see examples on map 1).

III. Analysis of nodality studied from the point of view of immediate gravitational zone linked with the centre of Kosice, to assistant small centres and to rural community centres. The aim of this analysis was to show the most convenient places for the construction of services for the needs in specialized shops, schools, cinemas, health services and roads (map. 2).

IV. The analysis of internal production ties which have supplementary significance and give one indication of productive links of individual enterprises within the framework of the region studied.

V. On the basis of the analyses mentioned above three synthetic microregions were delimited which have possibilities for complementary development: of these regions two are industrialized and one agricultural.

VI. The conclusions are given as the results of development and as the alternative development and in the terms of the needs of investments. Among the results one can note the project for building a wide gauge railway from the USSR, the construction of a new civil airport on the most convenient site, the possibility of locating building materials industries-cement, lime, etc. — in the area, the construction of factories oriented to the satisfaction of demand of a rapidly growing population (dairies, refrigeration plants, bakeries), industries which would employ women. Great attention will be paid to the development of suburban market-gardening, the delimitation of places which have been polluted, the possibility of the development of vineyards, the control of erosion of soils, the possibility of irrigation, the prohibition of building on good arable land, the development of tourism, etc.

VII. In this period there is carried on detailed research of other regions, e.g. the Bratislava region, Orava, Gemer and Horna Nitra regions. We think that the studies on regionalization in Slovakia will be completed more or less within five years.

Geographical Institute
Bratislava University

DISCUSSION OF THE SECOND DAY OF THE MEETING

September 10, 1963

PETR M. ALAMPIEV

Professor Harris's paper dealing with the methods of research on economic regionalization, recognizes as the basic method of regionalization the delimitation of uniform and nodal regions.

This type of research is fully applicable in detailed sectoral (for example, agricultural) regionalization, in research on the distribution of separate branches of the economic life of the country, in research on the territorial distribution of separate economic phenomena, in solving individual scientific or economic problems.

I should like to raise the question to what extent this way of research can be applied to integral economic regionalization embracing the totality of economic phenomena in a given country.

In our country the method of delimiting uniform regions has been applied for a long time. In the nineties of the 19th century, seventy years ago, a specialist in agricultural regionalization, Professor A. Fortunatov, generalized this practice in his definition of a region as an area differing from other areas according to a given characteristic. This definition of a region as a uniform area received wide recognition in our publications at the time. But with the coming of the Soviet form of government it ceased to satisfy our economic geographers because the planning and administration of our national economy made rapidly increasing demands on the integral economic regionalization. This definition did not satisfy the needs of research because it did not facilitate the determination of the laws of the creation and development of regions.

To determine the limits of integral regions taking a set of uniform regions as a starting-point, many attempts were made to superimpose several maps of uniform regions, delimited according to different characteristics. But these attempts were without satisfactory results because often the limits of the different uniform regions were inconsistent and subjective solutions were necessary.

It also became clear that the uniform regions were not so uniform. In real life they are always more complex and variegated than can be demonstrated on maps and cartograms. Moreover, the nodal regions do not always fit into the scheme of "centre — periphery". In reality there are regions with many centres or without clearly developed centres,

but with clear characteristics of economic nodality or crossing gravitations.

At present, the Soviet economic geographers are fully convinced that for integral economic regions the most important element is not uniformity but economic unity — the totality.

But what is most basic to the economic unity of region? Where should we look for the basis in research on this totality? In the sphere of distribution? In demand, services, telephone calls, the spheres of influence of different universities?

In our opinion, as the foundation of research on the economic unity of a region we should recognize the production principle, research on productive associations, research on the functions of the given region in the territorial division of labour.

The Soviet economic geographers firmly defend the primacy of material production. It is exactly material production that is the driving force for economic and social life.

The method of delimitation of uniform and nodal regions allows us to study and to determine the limits of economic regions individually. This method allows us to implement the economic regionalization, for example, on separate sheets of a topographic map.

At the same time we observe the weakness of this method. The economic region is not an independent economic organism. It is impossible to think about an economic region except as inside the whole system of economic regions which form an organic whole.

Just as it is impossible to understand the liver outside the living organism so it is impossible to understand a region, an organ of a bigger economic organism, outside the organism. Only a cook can think about a liver as a unit, independent of other organs. But such thinking is impossible in the mind of a physiologist or anatomist.

But what is the economic organism of which a region is an organ? Under present conditions this organism is the national economy of the country. Each independent country, regardless of its social or political system, has its closed balance of national income, its state limits within which there exists a unity of political and economic conditions for the development of the economy and within which the sovereignty of the nation is exercised.

It is clear that the national economies are not Robinsons, abstracts or absolutely closed unities. They are connected with one another by the international division of labour and other relations. But these connections are different from the connections that join regions inside a country. The countries are mutually connected as independent economic units, as separate economic organisms. At present there is no world system of economic regions as parts of a unit of world economy.

Therefore, there is no possibility for the economic geographer to prepare a map of the economic regions of the world. The most creative method of research on economic regions is to study them within different countries, within the national economic organism.

To conclude, I would like to discuss another aspect of our activity.

Our first task is to study the economic development of countries and regions. Our science investigates those phenomena which exist in reality, those phenomena which have existed and also those phenomena

which are in the process of being created. We are not interested in phenomena which do not exist. The life and the experience of our countries are the air which we breathe as scholars.

So far we have been concerned with the experience in the first phase of economic regionalization, i.e. the research of real economic territorial units and on this basis with the presentation of a net of regions on maps.

But we can ask whether our activity in economic regionalization should end at this point.

We should also investigate the practical application of this regionalization. Life — the Great Teacher — will demonstrate which regionalization is correct and which methods of regionalization give good results, and which bad.

The economic geographer, especially in socialist countries, after proposing a given set of economic regions cannot put away his instruments. He should follow the results of applying this set in practice and in a planned economy he should take part in the planning of the development of economic regions and of interconnections between regions. In this way he can see his mistakes and can correct them.

But neither does reality remain fixed. The regions are developing, they are outgrowing the limits which were tailored for them by the economic geographers. We should not stand still but should follow the development of the national economy.

From time to time in the Soviet Union and in other socialist countries the sets of economic regions are changed and corrected. This is a progressive and necessary phenomenon reflecting the requirements for the development of the national economy.

WILLIAM WILLIAM-OLSSON

During a private discussion I had with some of the members here, one of them who had been at the Lund Symposium a fortnight ago, said: "You must tell about the Swedish development as to methods of making regions". I shall do this because I think it has very much to do with the topics we are discussing here. As early as 1920, we made separate regions. We had homogeneous regions for agriculture from which agricultural data were collected. We also had social regions in our censuses of 1920 and 1930, made by professor of geography in Lund according to his knowledge of how people then belonged together and where they went. He knew the country by heart. Since then, all Swedish geographers have been working on these problems. The most fundamental thing happened in 1930 when it was decided to make a new Swedish topographic-economic map in the scale of 1 : 10,000, which would show every building. And this is now nearly ready for a great part of the country. We shall, now make use of this achievement along proposals of my colleague Professor H ä g e r s t r a n d in Lund. As a result the grid of 1 : 10,000 maps is to be used as a basic grid all over the country for collecting all kinds of data. Thus we get a network of 5×5 sq. km. All the houses and the number of persons living in each are marked in each square of the grid. In this way we have at our disposal a system for compiling statistical data without any direct connection with political or natural boundaries. The Swedish geographers are now trying to get our authorities to put

<http://rcin.org.pl>

the results of our next census in these squares: population, age structure, incomes, occupation and so on. There are unlimited possibilities here. It will take a very long time before we get all these data and only then shall we be able to completely mechanize our studies of regionalization, use computers and introduce new mathematical models.

OMER TULIPPE

Afin de compléter les informations recueillies par M. le Professeur Harris, il conviendrait de signaler l'étude de Charles Christians¹, qui a eu pour objectif de déterminer un découpage en compartiments agricoles plus précis que ceux qui ont été proposés en Belgique auparavant (à savoir: F. Quicke, Les régions agro-économiques de la Belgique, Liège 1952; A. Dumont, M. C. Malaise et A. Verstraeten, Carte administrative des régions agricoles de la Belgique, Bruxelles 1880; Carte des régions agricoles du Ministère de l'Agriculture, Bruxelles ± 1945). Ces cartes résultent d'une analyse insuffisante (cadre physique seulement, par exemple) ou bien la synthèse était faite dans un esprit trop exclusivement économique (indice d'utilité fiscale).

Dans la perspective de la géographie appliquée, et dans le cadre des enquêtes régionales entreprises par le groupe d'Aménagement "l'Equerre" à Liège pour le compte de l'Administration de l'Urbanisme et de l'Aménagement du Territoire du Ministère des Travaux Publics, il s'est agi de délimiter des compartiments qui soient des ensembles aussi homogènes que possible et susceptibles de réclamer une politique agricole ou des modalités de cette politique qui soient particulières sur le double plan de l'aménagement et du développement économique. Il fallait donc satisfaire aux exigences de la géographie agricole qui met en valeur toutes les composantes du complexe agricole et vise à en dégager les grands types de combinaisons et les sous-types conduisant aux notions de régions et de compartiments. Dans le cas qui nous occupe, on a recherché le maximum de détails.

Les critères retenus ont été:

La structure des productions agricoles (superficie, densité et rendements) qui comporte:

A. L'étude de la répartition de la superficie agricole entre:

(1) les herbages, dont prairies fauchées et pâturées, vergers pâturés;

(2) les labours dont:

(a) les cultures fourragères;

(b) les cultures non-fourragères, dont céréales et farineux, pommes de terre, plantes industrielles (comprenant betteraves à sucre et tabac dans le cadre du S—E);

(c) les cultures maraîchères;

(d) les cultures fruitières.

B. L'étude du cheptel:

(1) les chevaux agricoles;

(2) les bovins, dont les vaches laitières;

¹ Ch. Christians, Un essai de délimitation de régions et de compartiments agricoles dans la Belgique du Sud-Est. Bull. Soc. Belge d'Etudes géogr., 29 (1960), pp. 321—361.

- (3) les porcs;
- (4) la volaille.

La structure agraire qui fait l'objet d'une étude portant sur:

- (1) la grandeur des exploitations agricoles: superficie moyenne et répartition par classes de grandeur;
- (2) le type des exploitations: professionnelles et non-professionnelles;
- (3) le parcellement des exploitations: superficie moyenne des îlots d'exploitation par commune et par classe de grandeur d'exploitation;
- (4) les modes de faire-valoir: direct ou indirect, par commune et par classes de grandeur-exploitation.

Les potentialités des terroirs, bases permanentes de l'activité, et qui sont les éléments du cadre physique, soit: (1) le relief, y compris l'altitude, l'importance des pentes et l'ensoleillement; (2) l'hydrographie; (3) les sols; (4) le climat.

Au total, il a été fait appel à une trentaine d'éléments valables, dont les variations éventuelles ont été compensées par l'étude des normes d'évolution au cours du dernier quart de siècle et par une enquête sur le terrain. La superposition des limites des divers éléments n'est évidemment pas rigoureuse mais elle est très satisfaisante car il s'agit ici d'éléments interdépendants conduisant à une série de combinaisons particulières.

La carte dressée selon ces principes pour les Sud-Est Belge à été soumise à la critique d'une centaine de spécialistes agricoles qui ont marqué leur accord sur ce document. Dès lors, elle pourra servir de cadre régional et infra régional, aux études économiques et aux propositions d'aménagement comme une synthèse spatiale nécessaire et un découpage de référence indispensable pour l'ensemble de travail d'équipe.

MARIA KIELCZEWSKA-ZALESKA

Professor Harris has presented to us an interesting review of different methods of regionalization and he stressed the existence of two different kinds of economic regions: the uniform region and the nodal region. I want to ask Prof. Harris a question connected with this typology of regions. These two kinds of regions are of very different character. The first one, the uniform region, is defined by one feature and deals with the localization of different type of production in the first place. It may be a real economic area which it presents. But the nodal regions have different character. I studied nodal regions of small towns in Poland and I observed that the character of nodality exists not only in economic field but there are very important social and cultural relations, which form the nodal region of a town. So I doubt if it is proper to unite the two kinds of regions under one name of economic regions. Would not it be better to introduce two different terms — the economic for the uniform region and the socio-economic for the nodal region?

RUDOLF KLÖPPER

Professor Harris has made some flattering remarks about our work in West Germany. But I must say that in comparison with the reports just heard, our studies are rather moderate in aim. This is

partly a result of the specific situation of geography, statistics and regional planning in our country. Especially in the western part, and like most West European countries, Germany has many, very differentiated, small areas as a result of natural conditions, historical development and administrative divisions. Since the war, the communities and counties ("Kreise") have more self-government than they had before, each being governed by local councils. The need for a knowledge of the country is therefore great and this knowledge must be as detailed as possible, both as to systematic and spatial divisions.

West German statisticians can provide us with local information in the form of much data about each community (there are 25 000 in the whole Federal Republic). There are tables containing more than 100 basic statistical figures; a series of maps will cover the whole State as well as the Länder (e. g. the Plannungs Atlases). But series of single sheets on special economic statements give no clear idea of the spatial differentiation of the country according to an integrated economy, which obviously acts upon and forms the life as a whole, in any given place.

The statistical authorities asked the regional geographers to draw a map delineating areas to which combined economic data can reasonably be applied. We have tried to fulfil our task in an inductive way, by finding out the local economic character as a whole. In fact, we have considered only local productions and services, the latter being thought of as a special form of production. We have not tried to find types of local synthesis; instead we have found areas with a rather clearly homogeneous economic character as individual basic units. Wherever this character basically changes to another, also with a certain spatial continuance, we draw the boundary between two basic units. Thus we have renounced, and indeed did not have to use permanent thresholds, thus avoiding the danger of automatically following calculated boundaries even where they were obviously unrealistic. This seems to be a subjective method since the existence and boundaries of our basic units cannot be stated and proved by quantitative measurements. But they do exist, as we ascertained by common regional knowledge, by the understanding of experts and even by interviews with the man in the street.

One of my maps shows how we proceeded in the neighbourhood of bigger towns and cities (here: Koblenz). A bigger town is generally composed by quarters having different characters as to production and services (residential, industrial, shopping, recreation, etc.) and surrounded by smaller communities in which the relations to the town predominate over the local production in its socio-economic character. When the character of the community is determined mainly by its relation to the town, where the local character cannot be understood without this relation, we delineated an inhomogeneous but densely connected field of production and services. The situation in West Germany today is that the belt of densely connected communities can be fairly well observed and discussed, so that even in this case we have not been forced to use permanent thresholds.

The network of the boundaries of homogeneous socio-economic units is different in principal from the spheres of influence around central places, which we have delimited also by inductive methods. A central place is optimally located where areas of different structures meet. Inhomogeneity of the urban field increases very much the attraction and importance of a central place, at least one of a middle rank.

As to the problem of economic regions and administrative districts, in West Germany the most important divisions — the Kreise and the Lander — are institutions with an important degree of self-government with very considerable competencies, duties and correlated taxes of their own. Therefore, these areas are optimally shaped if they combine spatial sections of different characters (agricultural and industrial areas, towns and recreation centres, etc.) not so much to establish internal connections between them but in order that there may form balanced local economy. Therefore, partly due to their historical origins, our administrative districts are and shall be inhomogeneous in character; it is to be expected that they will coincide more and more with the spheres of influence around their administrative centres.

HANS BOBEK

I refer to the use of the words “functional” and “structural” to denote what Prof. HARRIS in his report has called nodal, or organizational, and uniform, or homogeneous, regions respectively. I want to stress, that function and structure are closely related and indicate only different aspects of one and the same factual complex. A more or less uniform area of a specific type of agriculture, or industry, is at the same time a structural area and a functional area its function consisting in the production of certain kinds of goods. Production is also a function, although not necessarily a nodal one. We are therefore not entitled to restrict the term “functional” to nodal or organizational regions only and such use should be stopped to avoid misunderstandings or/and misleading ways of thinking.

I would like also to suggest that we agree on a terminological differentiation which to me seems important, that is:

We should, in referring to the distribution of only one element, or variable, speak of areas of distribution rather than of regions, in order to preserve the traditional use of the last term, as in “regional geography”. The term “region”, in its traditional use, refers to areal complexes, sections of the surface of the earth as seen in the totality of their geographic endowment. Talking of regions means taking a synthetic view, whereas in the former case the view seems to be analytic. The extension of a milkshed, or of a specific demographic feature, or other single elements, on the contrary, do not constitute a region in this traditional meaning.

It should be taken for granted, therefore, that economic regions should not be based on one or two facts only for delimitation. They are bound to be, at least in developed societies, a highly complex and integrated affair which presents many aspects at the same time and in the same area.

No doubt, the series of excellent maps which Professor Juillard presented could easily be extended by considering further facts or aspects. However, I believe that in order to grasp economic regions it should be possible — or admissible — to restrict ourselves to a fairly small number of facts or aspects which are especially apt to serve as indexes for the character of the economic region and as criteria for its delimitation. Perhaps a canon of optimum-criteria and indexes could be developed to serve as tools for the study and delimitation of economic regions.

GYULA BORA

To the report of Professor Harris I should like to add some information on the methods and results of research on economic regions in Hungary.

The Academic Institute of Budapest is now working on the problems of urban agglomerations. Various methods have been used to analyse daily and weekly commutation, transport to the various industrial centres, etc. The Department of Geography at the University of Seged is conducting studies on the commodity flow of the main products of Hungary, similar to the studies reviewed in Professor Harris's report.

In the Research Institute of the Ministry of Internal Trade, extensive studies have been made on the service regions in marketing, buying and selling of various commodities like shoes, radios, TV sets, motorcycles and other household electric machines. The results of this research are very interesting and they provided the basis for a more rational distribution to retail shops.

The Academic Institute of Pecs was recently concerned with another problem of practical significance. In that area there are many small villages where small collective farms of about 600—800 ha. (1500—4000 acres) of arable land have been established. These farms were too small to use modern agricultural techniques. Thus the problem arose of joining these villages into larger units having both a productive and an administrative character. The Institute of Pecs, which undertook to study this problem, used in its research a great variety of methods reviewed in Professor Harris's report, like the studies of marketing, bus travel, attendance at secondary schools, service areas of health resorts, etc. The results of these studies made it possible to unite the small villages into proper functionally interrelated administrative and economic units.

Another type of studies on economic regionalization in Hungary relates to what are called regions of various branches of the national economy. Among the studies that should be mentioned is that on agricultural regions by Bernard and Enyedi, who used the index of the value added by agriculture, and my own study of the industrial regions.

So far, we have used mostly the traditional methods of geographical analysis in our research on economic regionalization. However, we are quite aware that to solve important problems of enormous practical significance — first of all that of the perspective plan for 1980 in regional dimensions — we have to apply more advanced techniques involving the use of electronic computers. In the near future many research institutions will be equipped with computers; e.g. our university will get one next year. This will enable us to use modern mathematical methods in our studies on economic regionalization.

JÓZEF BARBAG

It was with the greatest interest that I listened to the most instructive reports of Prof. Harris and Prof. Leszczycki as well as to the debates. I sincerely appreciate the effective work done by this Commission, the difficulties it has to face and I am not going to criticize anybody. However it seems to be very regrettable that there is still so

much confusion and such a chaos in the terminology concerned with the concept of regions and regionalization. It is doubtless a handicap in our discussions and scientific research. I, therefore, fully agree with Prof. Dziewoński that there is an urgent need to bring order and clearness in the field of terminology before we continue this important work. It seems to be one profitable task of the Commission. As a matter of fact, there is no shortage of words and terms and no real need to use one scientific term to denote many different things. A bit of semantics will, therefore, be very useful. Is it not amazing that even the term used in the title of the report has at least a double meaning? "Regionalization" means a process of dividing an area into regions for planning purposes and a description of existing regions.

My second remark is concerned with the classification of regions. The division into uniform and nodal regions seems to be artificial. Uniformity and variety are not the most essential features of regions. I think it is rather the close interconnection of various parts of an area which makes a region; the joining (binding) factors inside the region and dividing outside, the boundaries of regions. The frontier is an integral component of the region. There are no regions without frontiers. That is why nation-states are considered to be the most perfect economic regions. Some geographers (Bower, Woolridge) even believe that states are the only regions really existing. Boundaries of regions (lines in administrative regions and zones in other economic regions) should become a subject of research as well as the binding factors inside the regions.

The next question I would like to raise is the problem of international regions. We are witnessing a general trend of economic and institutional integration of states in capitalist countries, as well as in countries of the socialist system. The research and analysis of these new groups of countries is — I believe — as interesting and important from the geographical point of view as regions inside state-area. It is worth while to study these new integrated groups — economic and political regions — in statu nascendi.

Last but not least — I would like to point out that in making analytical studies and research of regions already existing or created, due attention must be paid to political factors. Without taking them into account it is impossible to understand and explain the existence and origin of regions not only in present time but also in the past.

APPLICATIONS PRACTIQUES
DE LA RÉGIONALISATION ÉCONOMIQUE
(dans les pays non socialistes)

ETIENNE JUILLARD

Le présent rapport se limite aux applications pratiques de la régionalisation. Il ne parlera donc pas des études et des propositions faites par des chercheurs pour un meilleur découpage régional de tel pays, sauf si ce découpage a été effectivement réalisé ou est en voie de l'être.

Le degré de précision de ce rapport est très inégal d'un pays à l'autre, selon la façon dont il a été répondu au questionnaire diffusé par l'auteur. Nous remercions particulièrement pour leurs réponses détaillées MM. les professeurs S. Schneider (Allemagne fédérale), O. H. K. Spate (Australie), O. Tulippe (Belgique), N. L. Nicholson (Canada), Sv. Illeris (Danemark), Ch. Harris (Etats-Unis), Chatterjee (Inde), L. Gambi (Italie), D. Amiran (Israël), T. Tanioka (Japon), A. Tanoglou (Turquie). Il nous a manqué les réponses de certains pays tel que l'Autriche, la Suède et de nombreux Etats de l'Amérique latine. Nous avons volontairement laissé de côté l'Afrique, dont la réorganisation politique actuelle rend difficile une mise au point sur ces problèmes.

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Les applications envisagées ici peuvent se rattacher à deux préoccupations différentes:

1. perfectionnement des moyens de connaissance des problèmes d'un pays ou d'une partie de ce pays: telles sont les applications à la statistique et à la cartographie;

2. perfectionnement des moyens d'action, en vue de la coordination des activités (régionalisation administrative), du traitement de certains problèmes (délimitation de régions-problème) ou de l'aménagement général du territoire (organisation du pays entier en régions fonctionnelles).

Comme les divisions administratives constituent dans chaque pays une armature qui sert de base à presque toute action, c'est par elles que nous commencerons.

I. APPLICATIONS À L'ORGANISATION ADMINISTRATIVE

L'organisation administrative d'un pays est souvent considérée comme arbitraire et sans relation avec les cadres réels de l'activité. C'est là une erreur: dans les pays de vieille civilisation, les découpages administratifs ont généralement enregistré une situation de fait, développé spontanément: territoires d'origine ethnique, linguistique ou tribale, seigneuries, contrées agricoles homogènes autour de leur marché, etc.; ce n'est que dans les pays "neufs" que des cadres administratifs, souvent imités des cadres européens, ont parfois préexisté à la vie régionale réelle; mais même là leur mise en place est généralement faite au fur et à mesure des étapes du peuplement.

Une fois créées, les divisions administratives jouent à leur tour le rôle d'un facteur de régionalisation, car l'organisation des services publics amène bien des activités privées à calquer leur propre organisation sur elles.

Mais les divisions administratives apparaissent souvent comme périmées. En effet, le perfectionnement depuis 150 ans, des moyens de transport et de transmission de la pensée ont permis d'élargir considérablement les territoires susceptibles d'être embrassés par chaque échelon de l'administration. Or l'armature administrative est lente à réformer. Elle joue donc parfois, aujourd'hui, un rôle de frein au développement économique et sociale. De toutes façons il est intéressant de voir comme ces cadres se sont plus ou moins bien adaptés aux conditions nouvelles.

Enfin la comparaison des divers pays entre eux montre les relations qui existent entre la structure administrative et toutes sortes de facteurs: milieu naturel, structure rurale, degré d'urbanisation, droit administratif, mentalité, etc.

Chaque organisation administrative nationale représente donc une application — plus ou moins spontanée ou volontaire plus ou moins réussie, plus ou moins vieillie ou modernisée — de certaines méthodes de régionalisation. Leur étude présente donc beaucoup plus d'intérêt qu'on ne pourrait croire. Mais on ne peut la faire de la même façon dans les vieux pays d'Europe et d'Asie, où l'armature urbaine et administrative est sortie progressivement de 2000 ans de civilisation rurale, et dans les pays de peuplement européen plus récent, où les villes et l'organisation administrative ont souvent précédé le développement des campagnes.

1° *En Europe*

(a) L'échelon de base est généralement la commune, qui coïncide, plus ou moins, avec la paroisse. Elle est particulièrement exigüe dans les pays de très ancienne civilisation agricole communautaire (Allemagne fédérale: superficie moyenne 1000 ha; Belgique 1150 ha; France 1450 ha, avec moins de 1000 dans les régions d'openfields du Nord et de l'Est¹).

Dans les pays méditerranéens, la structure des terroirs, avec leurs vastes terrains de parcours, a conduit à des communes plus étendues (Italie 3700 ha)², qui regroupent souvent plusieurs petites communautés locales (cas de la Yougoslavie, de la Turquie).

¹ Voir W. Christaller (Peterm. Mitt. 1938, p. 49—54), T. Morawetz (ibid. 1941, p. 15), A. Meynier (Ann. Géogr. 1945, p. 161—179).

² Voir H. Desplanches, *Comuni italiani e comuni francesi* (L'Universo 1958).

Sur la façade atlantique de l'Europe³ les conditions du peuplement ont créé des unités de vie agricole beaucoup plus réduites, que l'administration a regroupé en circonscriptions qui ne sont parfois qu'un cadre vide: par ex. les civil parishes établies en 1894 en Grande Bretagne (superficie moyenne 1800 ha environ en Cornwall) englobent chacune plusieurs hameaux (town land en Irlande, tref en Pays de Galles et Cornouailles, treo en Bretagne française) d'une superficie moyenne de 150 ha env.

(b) Au-dessus de la commune on trouve généralement un échelon qui semble avoir été, au Moyen Age, la circonscription majeure, celle que pouvait embrasser et contrôler un seigneur justicier, avec les moyens techniques de l'époque. C'est, par exemple, l'ancienne châtellenie en France, l'ancienne baronnie en Irlande, l'Amt en Allemagne. Il en est sorti le canton (France, Belgique, Luxembourg), le district (Suisse), le concelho (Portugal), les rural districts (Iles Britanniques), pour lesquels on trouve des superficies comparables allant de 180 km² (dimensions moyennes d'un canton français) à 300 km² (rural district irlandais, concelho portugais) soit un rayon de 8 à 11 km autour d'un centre.

Ces unités ont le plus souvent perdu aujourd'hui leur contenu administratif et ne subsistent plus que comme circonscriptions électorales ou fiscale.

(c) Dès le Moyen Age également, les pays occidentaux avaient été doté d'un échelon plus élevé de division administrative: le county anglo-saxon (moyenne 2600 km² en Angleterre, mais très inégal en fait: 2400 km² en Ecosse, 2700 en Eire), le bailliage français (1500 km² en moyenne) que remplacera sensiblement, en 1790, le district, puis l'arrondissement. Cette taille de circonscription, qui suppose un centre rayonnant à 20—25 km, semble avoir atteint son maximum d'efficacité comme cadre de la vie régionale au XVIII^e et au début du XIX^e siècle, avant les chemins de fer, mais avec des routes améliorées, un peuplement plus dense, des activités plus diversifiées. L'Amt danois (1960 km²), les cantons suisses (moyenne 1700 km²) ont le même gabarit.

Dans les pays de fortes densités ou d'urbanisation ancienne, les dimensions sont un peu plus restreintes: ainsi l'arrondissement belge (750 km²), le district luxembourgeois (800 km²), le Kreis allemand (570 km²), le Bezirk autrichien (1100 km²), l'Okraj slovène (800 km² avant 1954), etc.

Ces deux échelons intermédiaires manquent en Scandinavie et dans plusieurs pays méditerranéens. Est-ce parce qu'il sont disparus? Ou plutôt n'ont-ils jamais existé, parce que la grande dimension des communes et la difficulté des communications auraient rendu inutile ou inefficace la création de ces regroupements?

(d) Le cadre de l'administration moderne est généralement situé à un niveau plus élevé. Il s'est constitué au cours du XIX^e siècle (parfois à la fin du XVIII^e) ou bien il est hérité de cadre historiques, mais qui n'ont pris qu'à ce moment leur pleine réalité fonctionnelle, car il est à la mesure des moyens nouveaux offerts par les chemins de fer. Ceux ci permettent de contrôler aisément un territoire d'un rayon d'une cinquantaine de km autour du chef-lieu, soit 6000 à 7000 km²: ainsi le Regierungsbezirk allemand (7000 km²), le département français (6000 km² en moyenne). Les 9 provinces belges (3400 km² en moyenne), les 11

³ P. Fla tr ès, Géogr. rurale de 4 contrées celtiques, 1957, p. 182.

provinces néerlandaises (moyenne 2900 km²), les 92 provinces italiennes (moyenne 3300 km²) correspondent à des contrées plus densément peuplées et urbanisées. Inversement, en Autriche, chaque Land a en moyenne 9400 km², en Espagne chaque provincia 10000 km², en Turquie chaque vilayet 6600. En Scandinavie ces valeurs sont plus grandes encore, surtout dans le Nord: superficie moyenne d'un Lan suédois 18000 km², d'un fylke norvégien 18000, d'un Lan finlandais 37000; mais ces circonscriptions ont en moyenne 10000 km² dans la partie sud de ces pays.

Les États faiblement étendus (Danemark, Luxembourg) ne constituent en tout qu'une seule unité de ce niveau.

Quant aux pays anglo-saxons, ils n'ont aucun échelon intermédiaire entre le comté et l'État. Il semble que leur précoce et rapide industrialisation les aient amenés, non pas à créer des cadres administratifs élargis, mais à juxtaposer des boroughs et des urban districts aux anciennes subdivisions essentiellement rurales. Notons cependant l'existence de 4 provinces en Eire (superficie moyenne 17000 km²).

(e) Enfin les possibilités de la technique moderne et les exigences d'une économie de grands espaces ont fait apparaître depuis peu le caractère étriqué et périmé de ces cadres et plusieurs pays s'efforcent actuellement de créer des unités administratives plus vastes, organisées autour de métropoles capables de rayonner jusqu'à 100 et 150 km.

Il s'agit parfois de divisions politiques anciennes, plus ou moins remaniées: ainsi le Land allemand (moyenne 25000 km²). D'autres fois ce sont des regroupements d'anciennes circonscriptions et qui n'ont pas encore de réalité proprement administrative: les 19 regioni italiennes créées en 1948 ont en moyenne 16000 km²; les 11 standard regions d'Angleterre (1947) 14000 km²; les 21 régions de programme françaises (1955) 26000 km². L'objet de ces grandes divisions est surtout l'établissement de plans régionaux de développement dont il sera question plus loin; mais plusieurs administrations ont des échelons régionaux dans ce cadre (ou dans d'autres qui leur sont propres).

Par ailleurs cet élargissement des cadres se traduit aussi par l'éclatement des subdivisions inférieures: la commune rurale apparaît comme trop petite lorsqu'elle est restée purement agricole et l'on envisage la création de "districts ruraux", communes regroupées autour d'un centre élémentaire: ainsi au Danemark 48 des plus petites communes ont été regroupées en 17 et cette politique va se poursuivre; en France on étudie la constitution de districts ruraux de 3 à 5000 habitants qui se substitueront peut-être un jour aux communes. De même les villes en s'accroissant ont souvent débordé leurs limites administratives et conduit, pour faciliter l'application des plans d'urbanisme, à créer des districts urbains pluri-communaux (quelques exemples en France; question à l'étude en Belgique). D'autres agglomérations urbaines sont constituées à des fins statistiques ou urbanistiques seulement (voir plus loin).

Les échelons intermédiaires eux aussi ont été parfois supprimés ou agrandis par regroupements: suppression d'arrondissements en France, en Slovaquie; en Eire les districts ruraux tombent graduellement en désuétude. En Italie les partis de gauche demandent la suppression des provinces et leur remplacement par des "liberi consorsi di comuni" plus

petits, de l'ordre de 1000 km², qui seraient environ 300, subdivisés en 19 régions.

Certains pays, cependant, n'ont rien modifié à leur organisation administrative: Pays-Bas, Suisse, Norvège, Espagne, Portugal.

2° Dans les autres pays

(a) Pays asiatiques de vieille civilisation rurale. L'Inde a un grand nombre d'échelons administratifs qui attestent une organisation ancienne, complexe, encore imparfaitement uniformisée.

Le Japon est organisé à 3 échelons: communes (rurales et urbaines), comtés (gun), préfectures (Do, Fu, Ken), les plus grandes villes (shi) étant à part. Mais une simplification radicale est en cours: une "metropolitan area" a été créée en 1943 pour Tokyo, par regroupement de la ville et de sa préfecture. Le nombre des communes a été ramené de 11132 (1940) à 3511 (1960) et le comté est pratiquement supprimé.

(b) Pays neufs. En Amérique et en Australie, les dimensions très vastes des États et les conditions du peuplement ont le plus souvent conduit à une structure fédérale, d'où résultent certaines différences d'organisation à l'intérieur d'un même État fédéral, et à une organisation qui, parfois, est encore en cours de création, à mesure des progrès du peuplement.

La structure est généralement à 3 niveaux: État (ou Provinces), comté (ou département), municipalité. La genèse de ces subdivisions est très différente de ce qu'elle a été dans la vieille Europe, où un élargissement progressif des horizons de vie avait amené des regroupements. Ici le cheminement est inverse. Par exemple, en 1785, est délimité aux États-Unis un "Territoire du Nord-Ouest"⁴; il est divisé en deux en 1800, puis en 5 en 1809; l'une de ces subdivisions devient l'État d'Indiana, qui possède cette année là 17000 habitants groupés en 5 comtés; en 1816 il y a plus de 60000 hab. et 15 comtés; en 1844, à la fois par adjonction et par subdivisions, ce nombre est porté à 91; en 1859 une dernière subdivision crée le 92-e et dernier comté de l'Indiana.

Au Canada on a subdivisé encore des comtés depuis la guerre dans la province de Québec et on en a créé de nouveaux dans l'Alberta et le Saskatchewan. Des territoires énormes ne sont pas subdivisés en municipalités et sont administrés entièrement par les gouvernements provinciaux: c'est le cas des 2/3 de la province de Québec, des 9/10 de l'Ontario, de 99% de la Colombie britannique.

En Australie une grande partie du territoire n'est pas encore "incorporée", c'est-à-dire organisée en municipalités et en comtés. Chaque État fixe un minimum de population et de revenu à partir desquels on peut obtenir la création d'une nouvelle municipalité.

Malgré cette création plus récente et développée de haut en bas, ces pays connaissent aussi aujourd'hui le besoin de réformer leur division administrative. Le cas le plus général est l'éclatement des limites administratives des villes, avec la constitution (États-Unis, Canada) de "metropolitan areas". Au Canada, la province d'Ontario procède à des regroupements de comtés. En Australie on se préoccupe aussi d'élargir

⁴ G. Pence et N. Armstrong, *Indiana boundaries, 1933*, cité par G. d'Haucourt, *L'État d'Indiana à l'époque pionnière* (Paris 1961), p. 58 et suiv.

le cadre: chaque État a entrepris depuis 1944 d'établir une division en régions, c'est-à-dire en territoires ayant des limites naturelles et dont l'unité résulte du caractère de ses ressources naturelles et d'une communauté d'intérêts sociaux et économiques⁵. On y crée parfois des conseils consultatifs; mais ce ne sont pas vraiment des subdivisions administratives.

Enfin la fondation d'un État nouveau comme Israël s'est accompagnée d'une organisation administrative en 6 districts et 14 subdistricts, décidée en 1953.

Conclusion. Ces transformations en cours dans des pays de structure très différente attestent que l'organisation administrative, bien que difficile à modifier, n'est pas figée et que, pour rester efficace, elle doit s'adapter aux conditions nouvelles. Il est remarquable de constater que, par un cheminement convergent, vieux pays et pays neufs semblent s'orienter actuellement vers une simplification des échelons administratifs et vers un découpage en grandes régions de gabarit comparable.

II. APPLICATIONS À LA STATISTIQUE

Les données statistiques posent un problème de régionalisation, c'est-à-dire de base territoriale. Il est dangereux, en effet, d'utiliser des statistiques dont la base territoriale est trop grande ou trop hétérogène. Même des données par communes peuvent fausser les idées si cette commune s'étend sur des unités très différentes de relief ou d'utilisation du sol. Inversement une base trop petite peut être une source d'erreur d'interprétation: ainsi les statistiques de population d'une ville dans ses limites municipales, sans y ajouter la population des communes périphériques constituant avec elle une seule agglomération.

Il est intéressant de connaître d'absord jusqu'à quel degré de subdivision territoriale chaque pays publie ses statistiques, car plus est poussée cette subdivision, plus facilement chaque chercheur pourra réaliser les regroupements qu'il estime souhaitables.

Cette précision varie selon l'objet de la statistique: les données démographiques sont le plus souvent fournies par commune ou municipalité (Rép. Argentine: par district); les données agricoles plus rarement par commune (Belgique, Suisse, Canada; au Japon seulement pour la production de riz) et généralement par comté, ou même par département (France). Pour les industries les procédés sont très variables, allant de statistiques par établissement (Inde) à des données par Kreis (Allemagne), par département (France) et par „standard region“ (Angleterre). Pour le commerce les statistiques ne sont généralement données que pour le pays tout entier; l'Allemagne fédérale envisage la publication de statistiques commerciales par Land; on conçoit qu'il soit très difficile de descendre au-dessous de cet échelon. On a publié en France (L'espace économique français, 1955) des cartes d'échanges de marchan-

⁵ Atlas of Australian Resources, commentary of the Map „State and local government areas“, Canaberra 1954 et Carte des régions, publiée en 1949 par le Regional Planning Division.

dises entre départements; mais elles sont très incomplètes, car elles n'utilisent que les statistiques ferroviaires.

Plus intéressants sont les essais de regroupements territoriaux, différents des subdivisions administratives, destinés à donner aux statistiques une signification plus grande. Nous en indiquerons quelques-uns:

— l'Allemagne fédérale a réalisé un gros travail en délimitant des „Naturräumliche Einheiten”, c'est-à-dire des zones aussi homogènes que possible par leurs caractères naturels: 74 subdivisions majeures, elles-même subdivisée chacune en 2 à 9 souzons. Les statistiques démographiques et professionnelles ont été publiées sur cette base (Stat. des B.R.D., Band 35, 1954, Heft 7). Le même pays a délimité une Wirtschafts-räumliche Gliederung (1960). L'Inde aussi a publié en 1951 des statistiques démographiques par grande région naturelle, puis y a renoncé. Israël l'a fait en 1961, ainsi que le Japon. Le Canada a appliqué ce procédé à l'île du Prince Edouard (13 régions naturelles);

— en France l'Institut national de la Statistique a fait procéder en 1946 à la délimitation de “régions géographiques” homogènes (I.N.S.E.E., Régions géographiques de la France, 1948, 638 p., I carte) qui s'efforcent “de faire la synthèse entre la géographie naturelle au sens étroit du mot et la géographie humaine”. Leur dimension oscille entre 200 et 6000 km²; les agglomérations urbaines ont été mises à part. Les statistiques agricoles de 1946 ont été publiées sur cette base; elle a ensuite été abandonnée, car la délimitation de ces régions ne répondait pas partout aux mêmes critères;

— des régions agricoles ont été délimitées à des fins statistiques aux Pays-Bas, en Norvège, en Turquie; au Mexique les zones irriguées ont été divisées en districts statistiques. Aux États-Unis l'U.S. Bureau of the Census a publié en 1930 des statistiques d'exploitations agricoles basées sur une carte d'extension des “types of farming”;

— plus rares sont les exemples concernant l'industrie et le commerce. Notons cependant les publications anglaises concernant les industries nationalisées, organisées en circonscriptions, de même qu'en France les statistiques du Gaz de France publiées par “groupe gazier de production et de transport”. L'Allemagne publie des statistiques par district minier et par région de trafic (Grundverkehrsbezirke). Les Pays-Bas l'ont fait également en 1941;

— des statistiques ont été publiées concernant les agglomérations urbaines regroupées (metropolitan areas) au Canada, aux États-Unis (Standard metropolitan statistical areas, 1960), en France, en Israël. Plus rares sont celles qui s'appliquent à des zones d'influence urbaine: le Danemark l'a fait parfois, de même que le Japon pour ses 6 plus grandes villes; il est prévu de la faire en Allemagne. Les Pays-Bas ont publié en 1947 des statistiques de migrations alternantes qui permettent de délimiter des zones de drainage de la main d'oeuvre;

— enfin certaines statistiques concernent des territoires délimités dans un souci de planification régionale. Ces territoires (voir plus loin) sont souvent une région administrative (ex. la province belge) ou une addition de circonscriptions administratives (ex. les régions-programme en France). D'autres fois ce sont des régions nouvellement constituées, comme en Italie; les États-Unis ont publié des statistiques concernant certaines régions-plan, comme la Tennessee Authority, les districts de conservation de la nature, etc.

III. APPLICATIONS À LA CARTOGRAPHIE

Nous entendons par là non pas toutes les cartes régionales établies dans le cadre de recherches diverses, mais des publications de cartes dont le but spécifique est de proposer un découpage régional du territoire afin d'en améliorer la connaissance.

Telles sont, par exemple, les cartes montrant l'extention des "Natur-räumliche Einheiten" et des "Wirtschaftsräumliche Einheiten" en Allemagne fédérale. Dans un tout autre esprit, un effort original a été réalisé par le prof. Neudörffer de Francfort dans son "Soziographischer Atlas" de l'Europe occidentale (1962): afin d'obtenir des unités territoriales comparables, il a cartographié les données démographiques et socio-économiques à l'intérieur de subdivisions de taille très diverses, mais délimitées de façon à enfermer chacune environ 500 000 habitants.

Une entreprise cartographique qui est susceptible d'éclairer les problèmes de régionalisation est celles des atlas régionaux. Ils concernent parfois des subdivisions administratives existantes (tels sont les "Planungsatlas" allemands, par Land). D'autres fois ils étudient un ensemble territorial constituant une certaine unité économique: Atlas de la France de l'Est (1961), Atlas du Québec méridional (1963), etc.

IV. APPLICATIONS À DES RÉGIONS-PROBLÈME

Des administrations, des organismes de planification, et même des sociétés privées sont parfois amenés à délimiter des territoires différents des circonscriptions administratives, en fonction de certain problèmes qui exigent d'être étudiés dans leur extension complète et qui servent ensuite de cadre à des programmes d'équipement s'étendant à cet ensemble territorial.

Ces problèmes peuvent découler de causes variées qu'il est possible de grouper en trois catégories:

(a) Problèmes liés aux conditions naturelles seules:

— protection contre les inondations fluviales dans certaines grandes vallées: ex. Kosi région (Inde), Isewan région (Japon),

— protection contre les raz de marée: ex. région côtière de Sanriku (Japon),

— drainage des marais littoraux: délimitation des zones où un programme de poldérisation peut être appliqué; en Angleterre, par exemple, le 200 "Drainage Authorities" qui existaient en 1930 ont été remplacées en 1948 par 47 circonscriptions autonomes correspondant chacune à un bassin d'écoulement (dont 4 pour les Fens). Au Canada un "Maritime Marshland Rehabilitation Act" a été institué en 1948 pour l'aménagement des marais de la baie de Fundy,

— protection contre les animaux ou les végétaux nuisibles: l'Australie a délimité des „Noxious Weeds Areas" et des „Pasture Protection Boards",

— problèmes particuliers posés par les régions de montagne: ainsi la Suisse a délimité des régions dites de montagne qui bénéficient de mesures spéciales d'assistance. Les critères adoptés en 1944—1949 sont

fondés sur la durée de la période de végétation, la pluviosité, l'exposition par rapport au soleil, la situation par rapport aux voies de communications, la déclivité du sol et la possibilité d'emploi des machines⁶,

— certains pays — les plus avancés dans leur développement — ont délimité des zones de protection de la nature: parcs nationaux en Grande-Bretagne, Allemagne, États-Unis, Canada. En France on commence à légiférer à ce sujet.

(b) Problèmes liés aux conditions naturelles combinées avec un sous-peuplement ou un sous-développement économique:

— conservation des sols: des zones ont été délimitées en Italie („comprensori di bonifica“, délimités pour la plupart en fonction de bassins hydrographiques). De même en Israël, au Japon, en Australie, dans la Prairie américaine, etc. Au Canada le „Prairie Farm Rehabilitation Act“ (1935) destiné à aider les fermiers de la Prairie à lutter contre la sécheresse et la dépression économique, comporte un programme d'irrigation, de lutte contre l'érosion, etc.

— remise en valeur des friches: en France la Société des Friches de l'Est, constituée en 1955, s'attaque au problème de la restauration des campagnes dans l'ensemble des plateaux calcaires dépeuplés de l'Est du pays,

— reboisement: l'Espagne a créé des zones de repeuplement forestier;

— conditions climatiques exceptionnelles: la Norvège a créé un fonds de développement spécial pour le Nord, comportant des allègements fiscaux et des facilités de crédits.

(c) Problèmes liés aux conditions économiques et sociales seules.

Plusieurs pays développés ont vu apparaître ces derniers temps un décalage croissant entre des régions en plein essor industriel et des régions en difficulté qui apparaissent comme souffrant d'un sous-développement relatif. Inversement certaines régions souffrent d'un congestionnement excessif. Ces deux sortes de problèmes appellent des mesures particulières prises dans une zone qu'il importait d'abord de délimiter.

Les premières peuvent être classées comme suit:

— zones de sous-emploi ou de chômage chronique ou menaçant, appelant une conversion agricole ou industrielle. C'est l'Angleterre qui a été l'initiatrice de cette politique, dès avant 1939; en 1945 le „Distribution of Industry Act“ l'a systématisée en délimitant des „development areas“ à l'intérieur desquels sont créés des secteurs industriels prééquipés (Trading Estates). Par la suite d'autres pays se sont inspirés de cette politique: la France avec ses zones critiques, la Belgique et les Pays-Bas avec leurs régions de développement, l'Italie avec ses comprensori. Le Canada y arrive: des plans sont en préparation pour certaines régions-pilotes en vue du re-développement (notamment 3 dans l'Île du Prince Édouard);

— zones de sous-peuplement, appelant une politique de colonisation ou de reboisement: telles sont certaines zones critiques de France;

— zones caractérisées par un problème ethnique ou linguistique: ex. les zones de parler gaélique en Irlande, qui ont fait l'objet d'une politique particulière; les „réserves“ indiennes en Amérique du Nord, etc.

⁶ W. R y s e r, La délimitation des régions de montagne, Brugg, 1959, et Rev. Econom. méridion. oct. 1961.

Ces régions font parfois l'objet d'un programme d'équipement s'étendant à un territoire délimité ad hoc et qui apparaît comme une région-programme. C'est parfois simplement l'équipement hydro-électrique d'un bassin fluvial (ex. en Espagne, en Argentine). Mais parfois aussi il s'agit d'un programme combiné portant sur l'énergie, l'irrigation, l'industrialisation, l'habitat. L'exemple le plus célèbre est celui de la Tennessee Valley Authority aux États-Unis (1933); dans le même pays on peut encore citer la New England Regional Planning Commission (1934) et le Columbia Basin Project (1943). Dans le même esprit on peut citer l'oeuvre entreprise en Italie par la Cassa per il Mezzogiorno, en France par la Compagnie du Bas-Rhône — Languedoc, au Japon par le Plan de développement économique de Yoshino-Kumano (1955—1965 qui interesse 3 préfectures constituant un ensemble économique cohérent et que comporte: équipement hydro-électrique, irrigation, reboisement, équipement touristique, création d'un parc national. En Australie du Sud deux plans de développement combiné ont été réalisés pour deux zones: Kangaroo Island et le „90-mile Desert“. Dans la même catégorie on pourrait placer le plan d'équipement touristique de la Costa del Sol (Espagne). Le Mexique a également réalisé le plan de développement global de deux vallées.

Quant aux zones excessivement congestionnées elles ont donné lieu aussi, parfois, à des délimitations particulières assorties de mesures spéciales. Là aussi l'Angleterre a innové avec le problème de la décentralisation de Londres et la politique des new towns. L'Allemagne a créé le Ruhsiedlungsverband pour régler les problèmes propres au bassin industriel le plus puissant d'Europe. En France le problème de la congestion parisienne a donné lieu d'abord à la politique de décentralisation industrielle, puis à la création du District de la Région de Paris. Aux États-Unis la Port of New-York Authority (1921) est un office inter-État pour la coordination des problèmes de transport et d'aménagement dans le „New York-New Jersey Port District“.

V. APPLICATIONS À L'AMÉNAGEMENT RÉGIONAL

Les exemples étudiés au paragraphe précédent concernent certains problèmes particuliers, dont l'examen a conduit à délimiter des territoires en fonction de l'unité du problème posé. C'est, si l'on veut, une régionalisation de caractère analytique.

Autre chose est le découpage de l'ensemble d'un pays en régions en vue d'en faciliter le développement harmonieux. Prise dans ce sens synthétique d'espace fonctionnel coordonné par une métropole et doté d'une relative autonomie, la région constitue le cadre spatial du développement et ses dimensions s'élargissent à mesure que se perfectionnent les techniques de transport et que s'intensifie la vie de relations. A égalité de développement et de densité de population, il existe une sorte de gabarit de la grande région, vers lequel, on l'a vu au paragraphe I ci-dessus, s'orientent la plupart des pays. C'est dans cet esprit que l'Angleterre a été subdivisé en „standard regions“ et l'Italie en „regioni“. De même l'Australie, on l'a vu, envisage la création de régions. L'Inde

également est à la recherche d'une division en „planning regions” et le Gouvernement a chargé la „National Atlas Organisation” d'étudier cette question.

Tout pays soucieux de développement économique et social doit connaître l'état actuel et les tendances d'évolution de sa structure régionale réelle, et si elle ne constitue pas un cadre optimum, il doit s'efforcer de l'améliorer, notamment en renforçant l'armature urbaine et en réformant les structures administratives. C'est dans le cadre régional que les plans nationaux d'expansion économique doivent trouver leur inscription dans l'espace, et cet aménagement du territoire doit s'efforcer d'atténuer les disparités régionales de niveau de vie et de possibilités d'ascension sociale.

Tel est du moins, à notre sens, l'esprit dans lequel un pays devrait appliquer la régionalisation dans le cadre d'une politique d'aménagement du territoire. Mais cela est rarement le cas, à l'heure actuelle, dans les pays non-socialistes.

Il y a d'abord les pays qui comme les États-Unis, le Canada, l'Italie, planifient certaines régions-problème, mais qui ne semblent pas avoir conscience de la nécessité d'un aménagement général du territoire.

Il y a ensuite les pays qui en sont encore à faire l'inventaire de leurs problèmes, avant de se risquer à régionaliser des plans: ainsi l'Argentine, la Turquie, l'Irlande.

Mais il y a aussi ceux qui établissent des plans sur des bases régionales si étiquées qu'elles font douter de leur efficacité. Par exemple, l'Angleterre fait des plans par comté; Israël comporte 35 „planning units”, le Japon 22; pour le Danemark on envisage 7 à 14 régions-plan. L'Allemagne fédérale a des „Planungsatlas” par Land, mais ses plans se font par „Planungsgemeinschaften” qui groupent chacune un certain nombre de villes et de Kreise. L'Espagne a réalisé déjà 2 plans provinciaux, portant sur des espaces assez étendus (12 et 22 000 km²), mais ne groupant que 7 à 800 000 habitants chacun, ce qui est peu.

La Belgique et la France semblent en train d'arriver à la conception de la grande région d'aménagement. En Belgique on annonce la création de Sociétés régionales d'investissement dont le nombre reste à fixer, mais sera très réduit. En France des „programmes d'action régionale” sont préparés qui sont des compléments du Plan national d'expansion économique. Plusieurs ont déjà été publiés. Ils sont établis dans le cadre des 21 régions de programme; dans chacune de ces régions un Comité d'expansion économique procède à des études et stimule les investissements; dans plusieurs d'entre elles une Société de développement régionale fait figure d'une banque d'affaires de caractère semi-public; dans chacune d'elles un préfet coordonnateur préside des „conférences interdépartementales” des diverses administrations. Mais cette subdivision en 21 régions est encore excessive et la Commission nationale d'Aménagement du Territoire envisage de les remplacer par 10 grandes régions.

On voit donc que les applications de la régionalisation économique à l'aménagement global du territoire est encore peu avancée. Certes la mise en pratique des grandes doctrines d'aménagement serait plus facile en régime socialiste. Mais même dans le cadre d'une économie semi-libérale, il serait possible d'aller plus loin.

VI. PARTICIPATION DES GÉOGRAPHES A CES APPLICATIONS

Toutes sortes de raisons devraient conduire à une collaboration étroite entre les géographes et les divers organismes d'action régionale. D'une part ces problèmes de régionalisation sont depuis longtemps une des branches majeures de la recherche géographique; d'autre part l'aménagement du territoire est, en fait, de la géographie mise en actes. En fait cette collaboration est très inégalement développée selon les pays⁷.

Dans certains pays la participation des géographes peut être considérée comme nulle à tous points de vu: c'est le cas de l'Espagne, de l'Irlande, de l'Argentine, encore que les géographes argentins viennent de fonder une commission de géographie appliquée. Dans d'autres cette participation est encore très faible, se limitant à l'utilisation occasionnelle de travaux désintéressés des géographes: exemple en Italie, au Mexique. En Suisse, en Israël, au Japon cette collaboration est plus poussée, mais considérée comme insuffisante. Au Benelux, en France, en Allemagne, en Scandinavie, au Mexique l'intervention des géographes est de plus en plus fréquente, sous diverses formes; recherches faites à la demande des organismes d'action, association de géographes à des commissions d'étude, recrutement de géographes dans des services de planification régional et dans des bureaux d'étude. Mais c'est dans les pays anglo-saxons, en Angleterre, dans certains pays du Commonwealth et aux États-Unis que cette participation est la plus ancienne et la plus importante. On rappellera simplement l'action du prof. Dudley Stamp pendant la guerre et les suites durables qu'elle a eues.

Institute de Géographie
Université de Strassbourg

⁷ Pour les détails voir M. Philipponeau: Géographie et action, Paris 1960.

ADAPTATION DU CONCEPT ET DE MÉTHODES DE RÉGIONALISATION ÉCONOMIQUE AUX PAYS EN VOIE DE DÉVELOPPEMENT

(L'exemple de l'Afrique centrale)

J. WILMET

I. LE CONCEPT DE RÉGIONALISATION ÉCONOMIQUE DANS LES PAYS SOUS DÉVELOPPÉS

La régionalisation économique est fonction de l'effet polarisant de centres urbains sur les territoires environnants. Cette polarisation, pour être efficace, doit englober des aspects les plus divers de l'activité humaine. Elle doit pour porter le nom d'économique, utiliser des circuits d'échanges complets entre les zones rurales et les agglomérations urbaines.

Or, l'observation des faits conduit à des conclusions très différentes:

1° L'action des centres urbains se fait sentir surtout dans un sens centripète; autrement dit, la ville affaiblit à son profit les campagnes environnantes sans guère d'avantages pour celles-ci. Les villes tropicales apparaissent donc comme des oasis de relative prospérité au sein de véritables „déserts" économiques. Par ailleurs, les civilisations tropicales sont essentiellement rurales, ce qui retentit le développement des villes en tant que pôles de technicité.

2° La naissance des villes est due, dans la très grande majorité de cas, à l'impact de la civilisation occidentale. Or, celle-ci n'a développé, sauf exception, que des secteurs bien particuliers de l'activité économique. Entre autres, elle a produit une disproportion très grande entre le secteur tertiaire artificiellement gonflé par les importations et les besoins des classes aisées et le secteur secondaire, souvent faible ou inexistant; l'activité industrielle étant surtout centrée sur le secteur primaire c'est à dire de l'extraction ou de la récolte de produits destinée à l'exportation.

3° Les pays sous-développés sont caractérisés par un dualisme économique¹ consistant en un secteur moderne caractéristique du milieu

¹ Voir F. Perroux, Théorie du progrès économique, cahier I, S.E.A., série F, fasc. 1, 1955.

urbain et un secteur ancien ou traditionnel basé sur l'autoconsommation, créant peu de biens de production, juste assez pour amortir l'usure du matériel existant. Les liaisons entre ces deux secteurs sont peu développées. Ce dualisme favorise une mauvaise intégration des cellules de production, comme l'a montré F. P e r r o u x. Il en résulte que les circuits d'échanges sont incomplets car les revenus des citadins et surtout des classes possédantes sont ou exportés à l'étranger ou consacrés à l'achat de biens importés. Ce phénomène est trop connu pour qu'il soit besoin d'insister davantage.

4° Enfin, un dernier obstacle réduit le rôle polarisant des villes tropicales; c'est l'absence dans la plupart d'entre elles de pôles de décision permettant une distribution adéquate des investissements dans l'hinterland. Il faut voir là un effet de domination économique de nombreux pays anciennement colonisateurs qui conservent dans des métropoles occidentales, les sièges des sociétés importantes. L'absence de pôles de décision, mais souvent aussi des marchés formateurs des prix et certaines formes d'aide bilatérales conduisant à des procédés de domination commerciale, constituent un frein à un mouvement cumulatif de réinvestissement dans les embryons d'agglomérations industrielles tropicales.

Bien entendu, ces 4 types d'obstacles ne sont pas partout présents, à la fois et leur importance varie d'un pays à l'autre. Si l'on ajoute à ces freins économiques, certains autres obstacles d'ordre psychologique ou sociale, comme le manque d'esprit d'entreprise des autochtones, la faiblesse numérique des cadres, le parasitisme social sous ses diverses formes, l'esprit de caste ou les structures sociales inadaptées, l'usure et la corruption on aura épinglé les principaux facteurs de sous-développement inhabitant tout processus de régionalisation économique, parce qu'ils maintiennent le rayonnement du secteur moderne, principalement urbain, mais parfois rural (plantations) dans des limites très étroites.

Les embryons de régions économiques à foyer polarisant coïncident donc avec les foyers de développement.

II. EXEMPLES CONCRÈTS DE RÉGIONALISATION ÉCONOMIQUE

1. AMÉRIQUE DU SUD ET AMÉRIQUE CENTRALE

(a) Le Salvador: exemple d'une polarisation difficile.

Le problème foncier est sans conteste, le facteur dominant du sous-développement dans le continent américain. En Amérique centrale, J. T r i c a r t a montré par l'exemple du Salvador² que le système absentéiste de la „finca" empêche toute promotion agricole. Il n'existe que des circuits d'échanges incomplets, fonctionnant surtout dans le sens campagne-ville au détriment de la première. A cela s'ajoute un déséquilibre démographique produit par des immigrations saisonnières ou définitives dans les fincas de travailleurs célibataires étrangers à la région et même au pays.

² Un exemple du déséquilibre villes-campagnes dans une économie en voie de développement: le cas du Salvador en Développement et Civilisations, n° 11, 1962, pp. 80—102.

Le déséquilibre ville-campagne se traduit encore par une disproportion entre le réseau de ramassage et celui de distribution, la première fonction étant nettement inférieure à la seconde. Sur le plan géographique, le déséquilibre fonctionnel trahit l'insuffisance de la polarisation. Par ailleurs, comme le note l'auteur (p. 92), l'équipement urbain en services est embryonnaire pour assurer aux villages un quelconque rayonnement culturel sur les campagnes environnantes. Enfin, comme dans tous les pays sous-développés, le mouvement migratoire dans les villes s'effectue sans tenir compte des „possibilités d'accueil", avec pour conséquences l'importance de la criminalité et de la prostitution fruits de la misère économique; ce mouvement centripète s'exerce surtout sur l'élément féminin; le taux de masculinité des villes est donc particulièrement bas, à l'opposé du milieu rural, ainsi qu'il a été dit plus haut.

Cependant, un embryon de régionalisation apparaît par le truchement du réseau urbain plus dense dans des régions de cultures commerciales. Par ailleurs, les villes de ces dernières sont les plus prospères. Un exemple d'hyper-centralisation urbain est fourni par San Salvador³. L'économie spéculative a permis une certaine diversification des activités grâce aux bénéfices fournis par le café. Mais la spéculation foncière y est si grande que les investissements à des fins culturelles ou sociales deviennent rapidement impossibles avec ce que cela comporte de dangers pour la paix intérieure du pays.

(b) La Brésil: une réussite partielle de polarisation urbaine.

Le taux d'urbanisation du Brésil est relativement élevé 36%⁴; il est voisin de ceux de l'Europe agricole. Cependant la population s'y concentre dans deux types d'agglomérations fort différents: la métropole d'une part, de plus d'un million d'habitants, d'autre part, le bourg, pseudo-urbain de moins de 5000 habitants. Il est malaisé de considérer comme villes, des centres d'habitats aussi petits dont l'équipement est fort réduit et la gamme des fonctions très incomplète.

La poussée urbaine des deux grandes métropoles Rio de Janeiro et Sao Paulo est due, pour la première à une centralisation administrative et politique très poussée ainsi qu'à l'importance de son port; pour l'autre à l'habileté des financiers qui réinvestirent les bénéfices de café dans l'industrie ainsi qu'au développement progressif des voies de communication sur le plateau pauliste⁵. Le réseau de chemin de fer dirigé vers l'intérieur a joué un grand rôle dans les liaisons des 2 grandes villes avec l'hinterland. Mais leur position à l'océan (pour Sao Paulo par son port de Santos) a largement contribué à leur essor en fixant l'afflux des immigrants surtout dans la région de Sao Paulo.

L'ensemble des Etats de Minas Geraes, Sao Paulo, Rio de Janeiro et dans une certaine mesure d'Espirito Santo possèdent un réseau urbain témoignant d'une régionalisation économique basée pour une bonne part sur une conversion industrielle. Celle-ci n'eût pas été possible, à grande échelle du moins, sans intervention extérieure, à savoir les besoins des Etats-Unis en minerai de fer, permettant au charbon nord-américain de gagner à moindres frais les ports brésiliens (principalement Rio).

³ Id. p. 97.

⁴ F. Pinchas Geiger et P. Davidovich, Aspectos do fato urbano no Brasil in Rev. Brasil de Geogr., 1961, n° 2, pp. 263—362.

⁵ I.R.F.E.D. document n° 11, le Brésil, stencylé.

Le Brésil a donc joui pour son développement économique de plusieurs facteurs favorables: existence de ressources minérales, à distance relativement faible de l'océan, d'un réseau ferroviaire localisé dans les régions favorables, présence d'une population immigrée douée d'un certain dynamisme, ayant d'ailleurs largement libéré la région de Sao Paulo de la structure latifundiaire⁶, d'une classe dirigeante et d'entrepreneurs suffisamment étoffée; elle a bénéficié de concours de facteurs extérieurs: seconde guerre mondiale, mise en réserve des gisements de fer américains, et antérieurement première guerre mondiale avec coupure des débouchés européens du café, effondrement des cours de celui-ci durant la grande dépression, facteurs qui ont précipité l'industrialisation.

Il faut, cependant, ajouter que ce développement est très localisé régionalement puisque, à part les régions minières et industrielles du sud-est, il n'a pratiquement atteint que des portions du littoral atlantique de la Fédération. La distinction secteur-moderne — secteur-traditionnel, faite au premier paragraphe est ici encore d'une éclatante application. Mais le secteur moderne est spatialement plus étendu que dans la plupart des autres pays en développement.

2. AFRIQUE

(a) L'Égypte: gonflement anarchique des villes.

Sur 27 millions d'habitants, l'Égypte compte 8 millions de citoyens. Trois de ces 8 millions se trouvent au Caire et un à Alexandrie⁷, 3 dans les villes de province et un peu moins d'un million dans les petites agglomérations. Ce phénomène d'urbanisation ne s'accompagne pas d'une croissance parallèle de l'industrialisation: sur ces 8 millions de citoyens, 10% seulement sont employés dans des entreprises modernes (industries, transports, service du canal). De plus, un tiers environ de ce prolétariat habite les „villes nouvelles” comme Mehalla el Kobra ou Kafr el Dawwar. Il en résulte que la fonction industrielle n'est guère caractéristique des villes traditionnelles. Il y a donc (idem, p. 1) une disproportion „entre la taille d'une ville comme le Caire et son importance économique”. Selon les auteurs du rapport, les rapports sociaux et économiques dans cet „megalopolis”, sont de plus en plus perturbés par des circuits parasitaires, les masses populaires misérables représentant 56% de la population des villes, pour 7% environ des revenus perçus dans celles-ci. Les rapports villes-campagnes sont faussés par l'emprise foncière des propriétaires résidant en milieu urbain, le pourcentage des paysans non propriétaires s'élevant à 73% de la masse rurale. La polarisation d'un complexe industriel et maritime comme Suez est faible: 10.000 personnes seulement sont employées au canal. Le gonflement de la population urbaine est dû en partie encore à l'immigration paysanne, mais surtout au vertigineux accroissement démographique du sousprolétariat urbain (50% de la population urbaine avec des taux de natalité dépassant 50%).

(b) Le Sénégal: Dakar: type du relais d'exportation „hérité” de l'époque coloniale⁸.

⁶ I.R.F.E.D. op. cit. p. 9.

⁷ Nous nous référons ici plus spécialement à une étude sur „La Société Urbaine égyptienne” effectuée par l'I.E.D.E.S.

⁸ On se référera au travail d'A. Seck, Dakar, publ. de la Faculté des Lettres et Sciences Humaines de Dakar, département de géographie, publ. n° 9, p. 25.

Dakar, comme la plupart des ports africains est une création européenne. Principal exporteur d'arachides, il devient durant la période coloniale, la grande métropole de l'A.O.F., à la fois par sa position avantagée aux confins de la zone désertique et à l'extrémité la plus occidentale de tout le continent africain, par la décision du colonisateur d'y créer un port moderne, supplantant ses concurrents du littoral occidental, par son importance dans les liaisons aériennes aussi bien vers l'Europe que vers l'Amérique du sud; mais aussi par son rôle de capitale de l'ancienne fédération, avec ce que ces fonctions portuaires et administratives supposent à la fois comme infrastructure, et développement du secteur tertiaire.

Pourtant, Dakar n'a guère eu d'influence sur l'évolution de son hinterland et le régime actuel d'indépendance est là pour montrer que la balkanisation de l'A.O.F., particulièrement sensible depuis la sécession du Soudan, a privé Dakar d'une grande partie de son hinterland au profit de ports comme Conakri ou Abidjan. Non seulement „elle a rompu tous les liens administratifs de la puissance de Dakar”, mais elle a permis à ces ports „de devenir des concurrents limitant de plus en plus la zone d'influence” de l'ancienne métropole (id. p. 25).

Cette attraction qui n'était d'ailleurs pas une vraie polarisation, puisque la campagne ne recevait rien en retour, mais plutôt une succion, selon l'expression de l'auteur, ne pouvait aboutir à un développement de l'hinterland. Actuellement les dirigeants de la nation sénégalaise s'orientent vers des solutions nettement différentes faisant de la „cellule rurale” la base du développement⁹. Il n'est pas douteux que la hiérarchisation nécessaire des noyaux de polarisation à partir de ces unités de base, apportera de profonds remaniements dans le maillage des agglomérations sénégalaises. Une régionalisation équilibrée dépendra d'un choix judicieux des pôles aux divers niveaux de cette hiérarchie. Le contexte géographique et la structure de la métropole sénégalaise pourraient s'entrouver modifiés.

CONCLUSIONS

Les 4 exemples qui viennent d'être donnés confirment parfaitement les restrictions, énoncées dans la première partie, à l'application des méthodes et des résultats de la régionalisation économique européenne aux pays en voie de développement. Nous insisterons en particulier sur le dualisme économique entre secteur moderne et secteur traditionnel: sur le plan géographique, il se traduit par la coexistence de métropoles ou de villes héritées de la colonisation et rattachées à des ensembles économiques étrangers au pays d'une part, et d'autre part de régions géographiques au sens strict du terme, c'est à dire d'ensembles géographiquement homogènes, où les rapports de l'homme avec son milieu sont définis de manière constante dans toute leur étendue et se traduisent sur le terrain par un paysage régional caractéristique.

Cependant, ces exemples prouvent qu'il existe dans la plupart des pays sous-développés des embryons de polarisation, à des stades plus ou moins avancés. Le malheur veut que ces stades embryonnaires ne soient pas nécessairement axés sur des noyaux de polarisation valables.

⁹ Sedar Senghor et collaborateurs, Sénégal „an 2” par lui-même, n° spécial de Développement et Civilisations.

L'exemple égyptien en est la démonstration. Il existe donc, hérité de l'histoire, un maillage urbain, bon ou mauvais, et en tout cas à reconsidérer dans la conjoncture actuelle. Une autre caractéristique, dégagée de l'analyse des exemples africains est la fragilité des établissements côtiers qui se sont artificiellement créé un arrière-pays. La réorientation des régions de l'hinterland lors de l'accession à l'autonomie en est la conséquence. Ce processus n'est évidemment pas valable pour l'Amérique du sud où les stades évolutifs sont plus avancés. Mais en Amérique comme ailleurs, subsiste cette coexistence des régions homogènes avec les régions rayonnantes¹⁰ et la zone d'influence des secondes est encore très réduite. On peut même se demander si le futur maillage urbain, des régions sous-développées, qui sera vraisemblablement basé sur une réorganisation foncière et technique de l'agriculture, ne s'écartera pas considérablement de l'actuel dispositif hérité de l'économie de traite. L'exemple des essais tentés au Sénégal est caractéristique de cette réorientation de la politique sociale et économique vers les régions de l'hinterland.

III. APPLICATION DE CES ENSEIGNEMENTS À UNE RÉGIONALISATION ÉCONOMIQUE DE L'AFRIQUE CENTRALE

1. APPLICATION DES MÉTHODES DE RÉGIONALISATION AU MILIEU CENTRE-AFRICAIN (CONGO-LÉOPOLDVILLE)¹¹

(a) Comme le dit J. Denis, le maillage urbain en Afrique centrale est né d'un problème de transports. Léopoldville, Brazzaville, Stanleyville sont des points de rupture de charge. Elisabethville était la ville minière la plus proche, à l'époque de la création du B.C.K., de la Rhodésie par où s'acheminait le charbon de Wankie, dont l'importance dans le fret est considérable.

(b) L'importance de ces métropoles était en relation directe avec la mise en valeur de l'hinterland: ainsi Brazzaville et Léopoldville se sont développées en fonction de leur trafic fluvial. Actuellement le processus semble avoir dégénéré, l'activité économique ne justifiant plus l'abondance de la population urbaine; on assiste donc au gonflement artificiel du tertiaire et au développement du parasitisme sous toutes ses formes, comme dans les autres pays sous-développés.

(c) Comme le Brésil, l'Afrique centrale pâtit à la fois d'une natalité exagérément forte et paradoxalement d'un manque de population; de plus, la répartition de celle-ci est dans certains cas inadéquate; ainsi le Katanga industriel est forcé de recruter sa main d'oeuvre à des centaines de kilomètres de distance.

(d) La répartition ethnique pèse fortement sur les politiques et les économies régionales; elle aboutit à un fractionnement de la nation congolaise en petites unités inviables dans le cadre d'une économie moderne.

¹⁰ Voir J. A. Sporck, Essai de définition et de classification des régions en géographie, in *Acta Geographica*, juin 61, n° 38, pp. 22—27.

¹¹ Voir J. Denis (SJ), Le phénomène urbain en Afrique Centrale ARSOM, *cl. des sc. mor. et pol.*, mém. in 8°, T. 19, fasc. 1, 407 p.

(e) Enfin, la mobilité de la population centre-africaine est grande: non seulement elle se traduit par des mouvements migratoires vers les villes à court, moyen et long terme; mais l'hinterland lui-même connaît un remaniement perpétuel de son dispositif de peuplement par glissement des ethnies, migrations saisonnières vers des terroirs favorisés (plantations ou endroits de cueillette, rivières ou lacs poissonneux) itinérance agricole, formation de nouveaux villages par l'anciens travailleurs urbains de retour en milieu rural ou par sécession de parties entières de villages à la suite de discordes intestines.

Compte tenu de ces données, des difficultés supplémentaires s'ajoutent en Afrique centrale aux obstacles à la régionalisation économique. Cependant, la maillage urbain y est moins arbitrairement tourné vers l'extérieur que dans la plupart des anciennes colonies et, le réseau de voies de communication lui confère une certaine cohérence. C'est donc, dans la plupart des cas, vers une réorientation des structures et des fonctions urbains, en égard aux possibilités et aux besoins de l'hinterland qu'il faut s'engager: ainsi des noyaux urbains tel que Luluabourg, Stanleyville, Coquilhatville etc. pourraient jouer le rôle de centres régionaux importants. Il semble cependant, que la position de certains centres tels qu'Elisabethville ne soit pas aussi favorable à ce rôle de capitale régionale.

2. PRINCIPES DE RECHERCHE EN MATIÈRE DE RÉGIONALISATION ÉCONOMIQUE POUR L'AFRIQUE CENTRALE

Les recherches en régionalisation économique devraient, à notre avis, se décomposer en 2 séries d'enquêtes distinctes mais complémentaires.

(a) En milieu rural.

1° Délimitation des régions homogènes par les méthodes classiques de la géographie régionale.

2° Délimitation des zones de peuplement important (le facteur investissement-travail étant de toute première importance en milieu sous-développé).

3° Délimitation des groupes ethniques, dynamiques et importants: avec l'aide de l'ethnologie et en s'aidant de la géographie électorale.

4° Analyse des mouvements migratoires régionaux, y compris l'itinérance agricole au sein de terroirs claniques restreints et inter-régionaux.

La comparaison de ces 4 documents permettra d'apercevoir quels sont les pivots fixes du peuplement, zones de stabilité ethnique, d'économie régionale équilibrée. Ces points au terroirs favorisés serviront à l'établissement d'un maillage rural permettant par une hiérarchisation bien choisie de stabiliser la population autour des centres attractifs ruraux.

(b) A partir du réseau urbain actuel

1° Analyse de la structure et des fonctions des villes dans le but de connaître leurs relations avec leur hinterland; en distinguant nettement le secteur d'activités modernes du secteur d'activités traditionnelles, les structures modernes des structures traditionnelles.

2° Détermination de la zone d'influence des villes par:

— l'analyse de mouvements migratoires,

— l'analyse de la zone d'action de certains services: radio, journaux, origine des bières vendues en milieu rural, limite des zones pourvues de l'électricité domestique, etc.

— l'établissement de la carte du réseau des communications avec l'hinterland en tenant compte de sa valeur réelle (état des routes, revêtement ou non etc..)

— l'analyse de l'origine, de la nature et du volume des produits transistant par la ville afin de déterminer la proportion et le sens de ses échanges avec l'hinterland et de fixer son rayonnement commercial.

3° Détermination du surpeuplement urbain en rapportant le nombre des personnes régulièrement salariées à la population totale.

4° Cette enquête devra se compléter de l'étude de la hiérarchie du réseau administratif; on comparera les limites de la sphère d'influence économique à celle de la juridiction administrative.

5° Enfin, une enquête fouillée sur l'équipement urbain permettra de juger si la ville est à même de répondre aux besoins régionaux. Ceux-ci auront été déterminés par les enquêtes en milieu rural.

Cette deuxième série d'enquêtes en milieu urbain est plus proche du schéma proposé par M. Juillard; dans le détail, cependant, bien des adaptations seront nécessaires.

La comparaison des deux séries d'enquêtes permettra de voir, dans quelle mesure la ville s'intère à sa région ou est un leg de l'histoire coloniale; dans le second cas, son rôle comme centre d'échanges avec l'étranger doit être maintenu; mais il serait dangereux de lui confier des investissements qui pourraient être utilement consacrés à développer des métropoles régionales.

La superposition des deux enquêtes permettra de choisir et de hiérarchiser les centres secondaires ou les centres-relais par un double mouvement de convergence à partir de village rural et du centre urbain.

PRACTICAL APPLICATION OF THE WORK ON ECONOMIC REGIONALIZATION IN THE USSR

PETR M. ALAMPIEV

In the socialist countries the problem of economic regionalization is first of all a problem of a territorial organization of national economy. The fact that the means of production are public property permits to exert a planned influence on the formation and development of economic regions. A socialist state has all the necessary resources and material means at its disposal to develop any branch of industry in any region and in such proportions that are necessary for a normal process of socialist reproduction within the region itself and within the whole country, due consideration being given to the needs of the other socialist countries.

Each economic region is a separate link in the economy of the country. A system of economic regions constitutes the territorial structure of its national economy. The functions performed by each region in the economic organism of a socialist country are quantitatively and qualitatively determined and are rationally controlled by the plan of national economy, which has always both branch and territorial aspect. The planning of socialist economy by economic regions permits to coordinate all the elements of the economy in the territory of a region.

Socialist economic regionalization, i.e. a scientifically justified division of the country into territorial units in accordance with the actual and planned perspective territorial structure of the national economy is closely linked with the practice of economic planning and management of the national economy. It can even be said that the essence of socialist economic regionalization consists in taking advantage of the results of economic-geographical research when directing national economy. If it were not to serve such practical goals, economic regionalization would be of no avail.

This proves that in the socialist countries economic regionalization is fundamentally different from that which has been discussed in many papers as being practised in the capitalist countries.

Economic geography in the capitalist countries has no opportunity of taking an active part in the processes of formation and development of economic regions, which are regulated by a spontaneous process of economic development directed by the laws of capitalist economics,

first of all by the law of surplus value. Despite a considerable advertizing, attempts to establish certain regularity in the development of integral economic regions in a number of countries, have produced so far rather modest results. In the capitalist countries economic regionalization inevitably acquires an abstract character and is limited to a registration of actually existing patterns.

There are, however, different kinds of registration. If it is not based on truly scientific principles including the Marxist theory of economic development, economic geography cannot but study events of secondary importance only, and pay attention to insignificant details, substituting a superficial representation of certain striking events and aspects of reality to a thorough study of actually existing conditions and processes.

Having no permanent contacts with people who are actually directing economic life in a given region, contacts that are necessary to stimulate and enliven scientific research, economic geographers have no chance to write scientific papers that would give a thorough and profoundly thought out account of the problems they attempt to present. For this reason in the capitalist countries research into economic regionalization does not play any substantial role in economic life. The best the economic geographers can do is to solve some minor local problems.

It results from the above that methodological studies there are not aimed at demonstrating the fundamental processes of economic development and the specific features of production methods, determining the basic traits in the formation of economic regions and the specific characteristics of each region, but that they deal with some particular ways and methods, concentrating on details of research, hardly being of any practical use for the entire state. Sometimes this results in splitting integral economic-geographical processes into separate ones artificially divided from each other.

To give an example, mention should be made of a theory, popular in economic geographical literature, about dividing economic regions into "homogeneous" and "nodal". This division is pretended to become the point of departure for a future analysis.

However, this division is absolutely formal. It is deprived of any economic content and, consequently, it does not give any idea about the fundamental factor that determines the essence of the given economic event, or about the laws governing its development. Of course, "homogeneity" and "nodality" of a region are features outwardly characterizing the structure of regions. But both these features are to a certain extent characteristic of any region in different relations. Can they be taken as a basis in a study of the regions? Is it possible to analyze the systems of economic regions putting aside industrial relations, including the social division of labour?

It should be pointed out that in a formal analysis of "homogeneous" regions the concept "economic region" is substituted by the concept "areal distribution of a certain event or feature". Naturally when conducting research on the problems of economic regionalization it may be necessary to outline the areal distribution of definite features on a map. This is a widely used and valuable method of economic and geographical research. But this is a different question. This is not the problem, that is to be solved in economic regionalization by scientists and administrative workers in the socialist countries when they work

out a national economic plan from a territorial aspect. It is impossible to determine the composition and boundaries of integral economic regions as actual links in the national economy of the country basing oneself on purely formal assumptions.

For this reason it may be said that when solving the problem of economic regionalization, as it is understood in the socialist countries, the formal method of approaching to the regions from the point of view of their "nodality" or "homogeneity" is of no avail, or, at the best, it may serve some petty purposes. If technical methods of research are to be raised to the level of fundamental principle applied in the determination of regions — and thus be placed beyond the limits of their real applicability, they become an abstraction having little to do with the really scientific research on economic regions.

While in the capitalist countries a large-scale practical use of economic-geographical researches on integral economic regionalization remains an unattainable dream and there actually are only fragments of a real economic regionalization there, in the conditions of a socialist system economic regionalization has for the first time been given a firm basis and has become an active agent in the organization of national economy. However, in the non-socialist countries that have recently freed themselves from colonialism and are on their way to independence and economic development, in these countries where the state sector plays an important role, economic regionalization has become a constructive element, an important problem to be solved by the state.

Among the socialist countries, work on economic regionalization has been developed on the largest scale in the Soviet Union. Here during more than forty years a rich experience has been accumulated of the results of scientific research on regionalization. Enormous expenses, the presence of big territorial industrial complexes of a most varied structure, essential differences in specialization and conditions for the development of national economy in different parts of the country called for a special attention being given to the problems of economic regionalization on the part of the science and the state.

Practical utilization of the results of economic-geographical studies on economic regionalization has begun when first steps had been made in the development of Soviet economic regionalization. One can even say that it has been born from the practical needs of the Soviet state. It was not a coincidence that the first work on regionalization carried out in the years 1920—1922, proceeded under the auspices of state organizations: Commission on the Electrification of Russia (*GOELRO*), State Planning Commission (*Gosplan*), Commission of the Central All-Russian Executive Committee.

Practical and theoretical results of work of these organizations have been widely popularized in Soviet literature. Further stages of Soviet economic regionalization and its practical use have also been dealt with in books and articles. As an example, my own book could be quoted, the "Economic regionalization in the USSR", parts 1 and 2. For this reason in the present report I shall give a brief characteristic of the application of scientific work on regionalization in the USSR during the recent years, beginning with 1957.

Since 1957, work has developed in the USSR aimed at an improvement in the entire system of planning and managing the national

economy in its territorial aspect. This was connected with the beginning of a period of advanced construction of communism in the USSR. An impetuous growth of productive forces, more complex economic ties within the country and between its separate regions, the widening and deepening of democratic centralism in the field of national economy, all this called for a rearrangement of the management of industry, building and agriculture. Big changes had to be made in the composition of organs planning and managing the national economy. At the same time it became necessary to introduce considerable changes in the network of economic regions of all ranks, as the old pattern became obsolete and did not correspond to new demands. It also became necessary to change the administrative-territorial division because in the socialist countries the system of administrative division is an instrument in managing the national economy.

To what extent were all these administrative measures connected with the economic-geographical research on regionalization?

In the USSR the economic regionalization and administrative-territorial division are based on scientific economic-geographical researches. Economic geographers are engaged in a systematic scientific work of studying the distribution of industry, the characteristic of present economic regions, the territorial division of labour, intra-regional and interregional economic ties.

In the process of these researches, the actually existing territorial economic units are determined, as well as the directions of their development.

In their researches, the Soviet economic geographers have to deal with a historically formed system of economic regions harmoniously functioning within a planned organization of national economy. As a result of the development of productive forces, geographical shifts in the location of industry, the creation of new economic ties — it has become necessary to change the content and boundaries of economic regions. Sometimes these are substantial changes. But usually the point is not so much of creating a new system of economic regions, but of improving something that had existed before. In other words, there is succession in Soviet economic regionalization despite the changes in the actual regions. To make necessary improvements in the regional pattern, to determine which elements in this pattern have become obsolete or are no more motivated — this is the first and foremost task of economic geographers.

However, during the periods of major shifts in the national economy of the country (and the recent years are exactly a period of that kind) such local improvements become insufficient and a necessity arises of introducing large-scale changes in regionalization. Thus proposals are to be elaborated concerning the change of the entire network of economic regions. Usually the authors of such projects are economic geographers, but not only employees of scientific-research geographical institutes and higher schools, but also people working in economic institutes, planning organs, etc.

These projects are a valuable scientific material constituting a starting point for official regionalization. The latter means the establishing of a pattern of regions of different level by the state and the determining of the organization of planning and of managing the

national economy in each type of a region. This is the necessary condition to consider economic regionalization as fully introduced into practice.

The experience of the USSR and of some other socialist countries has shown that usually there is quite a number of variants in the projects of regional patterns. This is the result of extremely complex territorial economic ties and also of the fact that the continuous organic tissue of ties stretching on the whole vast territory of the Soviet Union can hardly be separated by strict linear boundaries. Any project of economic regionalization, no matter how thoroughly worked out, would inevitable overlook some region-forming factors. or on the other hand, over-emphasize the region forming significance of others.

The final decision and choice of a certain variant belongs to the state organs, which establish by a law the number, composition and boundaries of economic regions, on the basis of the current economic tasks facing the country and consideration being given to the development prospects of the national economy of the entire country, and of its parts.

Economic regionalization in the socialist countries usually is the result of the combined efforts of scientists and civil servants engaged in the planning and management of the national economy, state leaders having also their say in this matter. The share made by practical workers is most important, but this does not have any adverse effect on the scientific level of the researches on regionalization. Practical workers of this profile are often prominent specialists in their line. By its character their practical work approaches scientific researches. It is characteristic that among such workers in the USSR there are many professional economic geographers.

During the last 6—7 years essential changes have been made in the USSR on all the three main levels of economic regionalization, namely in the large, administrative and local economic regions. Let us make a brief review of the results of this work and the participation of economic geographers.

1. LARGE ECONOMIC REGIONS

The division of the USSR into large economic regions of general economic regionalization has always attracted and continues to attract economic geographers as a matter of primary importance. Large economic regions, as the main territorial subdivisions of the country national economy, have been most thoroughly described in the Soviet economic-geographical literature. The methods of economic regionalization have also been discussed from the point of view of the general economic regionalization.

Beginning with 1956, the State Planning Commission of the USSR and its scientific-research Economic Institute have started work on general economic regionalization. Economic geographers from other scientific-research institutes and organizations, from universities and higher schools, planning and statistical organs, etc. have been invited to cooperate. After heated discussions in the USSR State Planning

Commission and a discussion in mass geographic and economic organizations, after consultations with local Soviet authorities and planning institutions, a draft pattern of large economic regions has been worked out, and it was approved with certain amendments by the Soviet government in April 1961. According to this pattern, the Soviet Union has been divided into 17 large economic regions plus two allied republics — Byelorussia and Moldavia — which have not been included into any region.

In 1963, a certain amendment was made in this scheme following the changes of the boundaries of industrial economic regions.

A large economic region has an average population of 10 to 15 mln and by its economic potential equals some European countries.

In the large economic regions planning commissions have been organized resting under the jurisdiction of the USSR State Planning Commission.

At the present time the Council for the Study of Productive Forces at the USSR State Planning Commission with the help of numerous central and local scientific research and designing institutes, are engaged in the work on formulating the fundamental trends in the development of national economy of each large region for quite a long period. By the way, the Council has many economic geographers among its members, for whom the close links between the science of regions and practical work in planning are an ordinary thing.

2. ECONOMIC ADMINISTRATIVE REGIONS

On the second level in economic regionalization of the USSR are administrative-economic units being the counter-part of a province, as well as national state units — autonomous republics and smaller allied republics. The system of these units — administrative and national — is rather similar and includes different categories of regions from a constitutional point of view. Their common feature is a combination of economic and administrative unity.

Despite an impetuous development of national economy and big changes in the distribution of industry, the economic-administrative regions in the USSR are rather stable. At the present time there are 163 administrative-territorial and national-political units in the USSR, including areas, provinces, autonomous areas, national districts, autonomous republics, small allied republic. Out of this number, 47 units (areas included into provinces and small allied republics, national districts, autonomous areas, autonomous republics included into the Georgian and Azerbaidzhan SSR) cannot be considered as independent economic regions of this rank. They are rather subregions of corresponding republics, provinces, areas, to which they belong. Thus, there are at present 116 economic-administrative regions in the USSR, corresponding to the full meaning of the term.

A comparative stability of this network is indicated by the fact that 92 of them, i.e. about 4/6 of the total number were set up before 1940, and 30 (26% of the total number) have existed since 1919—1930. During the fifties only 4 units have been organized, during the 60-ties — only 3 (provinces in the Kazakh SSR).

The long existence of these regions as administrative-territorial or national-political units has had a tremendous influence upon their economic consolidation. In a planned economy the influence administrative and national boundaries exert on the formation of economic regions is very great.

In 1957—1962, the administration of industry and building was introduced at the end of the economic-administrative regions. At present the economic-administrative regions only supervise agriculture, while industry is managed by larger economic regions, the number of which is 47 (in 1962 — 100). Out of these 47 regions, 17 coincide with the economic-administrative regions, the remaining 30 are composed of 2—3 and more economic-administrative regions united industrially by one Council of Regional Economy.

But even in these "multi-areal" economic regions, provincial and areal organizations take an active part in the industrial life. The ties between the organs of Soviet authorities in the areas and provinces, on the one hand, and industrial management and agricultural authorities, on the other hand, have been reflected by the setting up of separate areal and provincial councils for industry and agriculture in 70 areas and 5 provinces. In this way the industrial principle in the structure of local organs of Soviet authority has been expressed by the division of such organs into two independent councils.

Economic-administrative regions attracted considerably less attention of economic geographers than large economic regions. As a rule, the economic-geographical literature has been limited to a characterization and descriptions of economic-administrative regions, the analysis of their specialization and a complex development of their economy; sometimes certain suggestions have been made concerning the improvement of the boundaries of separate regions.

Theoretical problems of economic-administrative regionalization have begun to be dealt with in literature since 1957, in connection with the reorganization of the administration of industry and building. In this reorganization the work of the sector of economic regionalization at the scientific-research Economic Institute of the State Planning Commission of the USSR has proved to be of great assistance.

3. LOCAL ECONOMIC REGIONS

The lowest level — the local administrative-economic regionalization has been mostly developed in republics, provinces and areas, where local economic geographers have investigated these problems from the point of view of their republics, provinces and areas.

In 1963, there was a reorganization of local regions in the USSR, when economic regionalization was combined with a reform of the administrative-territorial division, both being based on production principles. In 1962, there were 3421 "rural" regions in the USSR. After the reorganization their number was reduced to 1833, while industrial (122) and agricultural (1711) regions have been distinguished, by the predominant line of national economy thus diminishing the number of "rural" regions nearly by half. This has been obtained by merging

collective farms and raising their economy to a higher level, by the development of motor road transport and agricultural progress in the USSR in general.

Drafts of a new local regionalization have been compiled locally, as this work demanded a very good knowledge of local conditions for both industry and agriculture. In this work participated also local economic geographers familiar with their province and specializing in the methods of detailed economic regionalization.

As an example, the local economic regionalization of Voronezh area could be given. Doctor of geographical sciences G. T. Grishin has been working at Voronezh State University. He published many papers on the methods of detailed economic regionalization and had the experience of a detailed regionalization of Voronezh area. These papers were published long before 1963. When the reorganization of the local economic regions was taking place, the Voronezh organization invited Dr. G. T. Grishin to participate in this work. The pattern he had suggested on the basis of his many years experience has been adopted with minor amendments. This is an example of practical utilization by state organs of economic-geographical studies on detailed regionalization.

Summing up, a conclusion should be drawn that the studies on economic regionalization carried out in the Soviet Union by economic geographers are of great practical value for the planning and territorial organization of the national economy. The Soviet state in carrying out an economic regionalization on different levels widely uses the studies of economic geographers, particularly in the field of general economic regionalization. On the other hand, the experience got by the state in the field of planned territorial organization of the national economy, exerts a strong influence on the formation of theoretical ideas of economic geographers in the domain of economic regionalization.

Institute of the World
Socialist System,
Moscow

APPLICATION DE LA REGIONALISATION ÉCONOMIQUE À LA MODIFICATION DE L'ORGANISATION ADMINISTRATIVE EN TCHÈCHOSLOVAQUIE 1960

MIROSLAV STRIDA

Dans un pays socialiste les applications de la régionalisation économique à l'organisation administrative doivent s'approcher de plus en plus des applications à l'aménagement régional de l'ensemble du territoire. On a exigé de la nouvelle organisation territoriale d'améliorer l'activité économique et organisatrice des appareils directeurs des régions, c'est-à-dire des comités nationaux (národní výbory), qui administrent ou coordonnent une grande partie de l'économie dans leur domaine. Ainsi on vit apparaître la nécessité pressante d'attribuer des unités territoriales constituant chacune un tout économique et géographique plus convenable à la gestion des comités nationaux. Pour cette raison les régions économiques sont devenues la base de la nouvelle organisation territoriale. Les mesures prises pour accélérer le développement des différents régions, conformément à leur conditions naturelles et économiques les plus avantageuses, doivent contribuer à une répartition plus complexe de l'économie et à une égalisation du niveau de vie dans toutes les parties du pays.

Les anciens travaux géographiques ont été examinés au point de vue de leur intérêt pour le partage régional. Dans la préparation de la nouvelle organisation des régions administratives et des districts on a pris en considération les principes de la division de Václav Dědina (1929), de Jaromir Korčák (1934) et la contribution de Miroslav Blazek sur la base de l'économie socialiste.

Les études de l'Institut Géographique de l'Académie des Sciences effectuées au cours des années de 1955 à 1959 et portant sur la caractéristique des régions économiques, fournissent une documentation importante.

La république a été divisée en 7 grandes régions économiques. (La Bohême de l'Ouest, du Centre et de l'Est, la Moravie du Sud et du Nord y compris la Silésie, la Slovaquie de l'Ouest et de l'Est (plus la capitale qui est une unité séparée) — en tout 8 régions économiques. En principe, elles, étaient uniformes par l'étendue de leur territoire, leur peuplement et leur économie, à part de trois exceptions au-dessus, de la moyenne

région de la Bohême Centrale plus peuplée et plus étendue au point de vue de l'administration, la région de la Slovaquie de l'Ouest (également plus peuplée et plus étendue) et la région de la Bohême de l'Ouest (plus étendue). Pour des raisons pratiques de gestion et d'administration, ces trois régions ont été divisées dans le nouveau projet de structure régionale en deux parties. Il est tout naturel que ces nouveaux partages aient demandé certains aménagements dans les zones limitrophes des régions citées et avoisinantes. Mais les différences ne sont pas remarquables.

En formant les districts dans la nouvelle organisation territoriale de la Tchécoslovaquie on a déjà moins respecté les points de vue économiques et géographiques de la structure nodale, Néanmoins, même ici, le choix des centres était d'une grande importance géographique. Conformément aux principes de la répartition des investissements et des moyens de production dans l'économie socialiste, la fonction du centre régional convient le mieux à une ville située le plus favorablement au point de vue de la géographie économique: centre industriel le plus important de la région, à forte concentration de population et d'accès facile par divers moyens de transports. Pour le choix du centre du district, la situation au milieu du district ne peut pas seulement être décisive. C'est plutôt le rôle de la ville comme centre-noyau qui l'emporte sur la base de la considération des activités productives et des activités de relation. Ainsi a-t-on choisi Blansko, Kutná Hora, Bréclav, Nove Zámky, Trebisov, bien que ces villes soient situées aux confins de leurs districts.) Dans certains cas (Žiar n. H., Příbaun, Humenné, Ždár n. S., Česká Lípa) on n'a pas hésité à faire confiance en l'avenir, en choisissant des centres avantageusement situés et promis à un rapide développement.

Enfin, le territoire de la république a été divisé en 10 grandes régions administratives nouvelles, plus une unité indépendante comprenant la capitale de Prague, et en 108 districts.

Les organes directeurs des districts, qui ont été dotés d'une compétence un peu plus large que les anciens organes régionaux, ont été placés dans 103 villes choisies à cet effet. La division économique, c'est-à-dire le partage du territoire de l'Etat en régions économiques conformes à des conceptions théorétiques et aux besoins de la planification et de l'administration est par définition une tâche géographique, mais naturellement non seulement géographique. Outre l'application des anciens travaux et des travaux géographiques de l'Académie, certains géographes ont eu la possibilité de prendre part aux discussions politiques relatives à la réforme territoriale, quoique à notre avis dans une mesure limitée et insuffisante. Mais les résultats du partage montrent cependant que le rôle de la géographie dans la détermination des projets de la nouvelle organisation territoriale des régions et des districts de la Tchécoslovaquie (délimitation et choix des chefs-lieux) en 1960 a été plus important que jamais dans le passé.

Institute de Géographie
Académie des Sciences
Praha

DISCUSSION OF THE THIRD DAY OF THE MEETING
September 12, 1963

HANS BOESCH

1. It is not astonishing that there seems to be a certain amount of confusion or divergency of opinion. Everywhere when man enters as a significant factor, certain differences in reaction which defy simple cause and effect relationship (as in the sciences in the strict sense) have to be taken into account. This has become evident at several instances during the course of our discussions, and it touches upon such fundamental philosophical problems as, e.g. determinism.

2. However, beyond these basic differences of thought, there are others that result from the fact, that all of us have followed our studies independently, reaching frequently quite different conclusions. In all these cases the result of this meeting will be, that we take home new ideas against which we check our own findings. The basic division proposed by Prof. Harris into uniform and organizational regions was supported with further arguments.

3. It was, as a matter of technical classification, pointed out that "production and services" is not quite correct, because services are to be counted as "tertiary production". The need to include consumption in the study of regionalization was stressed; production, transportation etc. and consumption form the total field of economic geography. In the case of industrial geography, consumption deserves even first consideration.

LESZEK KOSINSKI

The Institute of Geography of the Polish Academy of Sciences has made some studies of spheres of influence in selected small towns. In fact, this research has helped in the understanding of certain characteristics of nodal microregions in this country. As far as the method was concerned, the data were collected both in the hinterland area (questionnaires sent to local teachers) and in the centres during field investigations.

The conclusions of these studies are:

1. Microregions can better be defined when taking into account service connections than productive ties, since in most cases the

productive connections of plants reach far beyond the local area and the occurrence of such establishments as sugar refineries, food processing plants, etc., are rather exceptional in the small county towns of our country.

I refer here to what was emphasized by Professor Alampiev, that service characteristics are not adequate measures for defining regions. I should suggest that different types of criteria can and should be used when studying different ranks of regions and certainly it is difficult to study the productive connections as a measure of microregions. On the other hand, certain social measures can very well reflect the economic and, strictly speaking, production phenomena.

Last, but not least, it is also a matter of definition since, for example, commuting or delivery of agricultural products can be considered as productive connections and consequently the study of fairs could, in fact, be the study of productive relations.

2. Economic microregions very often differ from local administrative units. This is a rather important statement in a country with a centralized planned economy. When we started our studies the generally accepted theory was that the administrative division does, or at least should, take care of economic regionalization.

3. The network of settlements has a great influence on the pattern of the nodal microregions.

I should like to add a few words on the application of our studies. Their results were immediately handed over to the local planning authorities which could then use them as a basis for discussing changes in the network of settlements and the pattern of local service centres. We could only prepare a limited number of studies. But the method was made available to all interested institutions and individuals and, in fact, many of them conducted similar studies of their own. Thus an additional application of studies made by geographers can be as a pilot study in the methodological sense.

ROMAN T. GAJDA

Basic to the development of the idea of economic regions is a methodical consideration as to whether the economic regions have an objective existence. Many geographers and economists feel that geographers tend to assume not that the regions are there but that they have to be created. On the other hand, economists generally believe that regions are there and have only to be discovered by an analyst. The view of Soviet geographers is quite different from both these approaches. I have the feeling that the idea of non-existence of economic regions is losing its impact in modern geography. Nowadays the view of many geographers in Canada and the United States is rather in agreement with that of the economists. In any case I should be very glad to have some clarification on this subject.

The second problem raised during the discussion is that of terminology. Here, there are many terms for the same thing which are used in various meanings. However, one of the most important terms — "regionalization" — needs some clarification first of all. This term is frequently used by geographers but, it seems to me, is unsatisfactory even though the majority who use it assume the existence of regions.

Perhaps the delimitation of regions or the "defining" of regions much better expresses the feeling of both geographers and economists with regard to regional divisions and regional analysis. Such basic problems should be clarified by our Commission.

Connected with this is the problem of economic regions versus geographic regions. It seems to me that from our discussion during the conference one can conclude that, broadly, speaking, economic and geographical regions are the same. In fact, it would be very hard to find a difference in the definition of these two types of regions. The only difference, as far as I can see, is the availability of the economic data necessary to establish economic regions. But geographical regions ought also to be established on the basis of some statistics to be compiled by the geographer.

If so, where is the difference? I hope that our Commission will also clarify this matter.

The task of finding an objective method in economic regionalization is enormous. We have a great variety of economic regions, depending on the purpose and the criteria used. Thanks to Dr. Harris's work we can now be oriented in this subject. Because of the tremendous diversification in the methods used in economic regionalization I should like to suggest that our work, among others, be concentrated on the methods suitable for delimiting economic regions for various purposes, to serve many users and, secondly, that it consider the methods suitable for special purposes.

In considering such groupings or procedures we should, however, not pay attention to uniform or homogeneous regions. Such regions, strictly speaking, do not exist and I am in complete agreement with Dr. Harris.

Any region for economic geography must be a unit which will have a relatively uniform reaction to a given economic stimulus. In general, two different and apparently contradictory principles or criteria might be adopted to arrive at the desired unit. Perhaps the most obvious is homogeneity. This is a similarity in all the physical and human factors within the unit, differing as much as possible from the adjacent units. Functional relationships, however, or the existence within an area of a number of dissimilar but significant and internally complementary factors become much more important in a highly organised society.

These two criteria are not necessarily contradictory if broadly interpreted and, in fact, a combination of the two is necessary, for example, in such a country as Canada. Complete homogeneity is unworkable, theoretically undesirable, and in fact unobtainable except in reference to a large homogeneous region with a simple primary economy such as the northern regions in Canada. Furthermore, homogeneity clashes with another requirement of a meaningful unit, that of size, particularly as one of the main purposes of regions is to reduce areas that are large and difficult to handle to manageable dimensions.

We have to realize that the arrangement of the basic units, which may not be too homogeneous in themselves, into regions which must be connected wholes does not allow too many choices when the surrounding units may likewise not be too homogeneous.

Large urban centres always introduce heterogeneity. Their influence extends far beyond the basic unit economically and culturally they

are actually regional centres. There are many other drawbacks connected with the so-called homogeneous regions. Insistence on homogeneity, even in the average sense, for each basic unit might break up many significant organic functional units which would be much better left intact. Relationships in fact represent a far more effective cement than homogeneity in specialized activities.

In order to develop economic regions for general use we should think in terms of broad factors and ignore the simple, easy dependence on a single dominant factor such as physiography, a particular economic factor or specialized types of relationships.

The practical region for general use requires much study and should be a mixture of all the factors of homogeneity and relationships with due regard to the political, cultural and historical backgrounds. It seems to me that the work in this direction, and accordingly the establishment of significant criteria, would be an important one and would clarify our practical needs and assist us in our work.

ETIENNE JUILLARD

Je voudrais dire tout simplement deux choses: la première c'est que j'ai été heureux de voir, que ce problème de division administrative semblait être un domaine intéressant nos collègues et j'ai constaté avec plaisir, que du côté des pays socialistes l'importance de ces divisions administratives semblait être plus grande encore, que du côté des pays capitalistes. Je souhaite par conséquent, que selon les vœux du prof. Blažek, nous puissions mener une enquête complète sur ce qui existe dans tous les pays comme hiérarchie de divisions administratives, comme dimensions, comme population moyenne à l'intérieur de cette hiérarchie de divisions, de façon à arriver à une comparaison intéressante.

Je voudrais faire une seconde remarque, qui se rapporte à ce qu'on dit les Prof. Boesch, le Prof. Dziewoński, le Prof. Berezowski, le Prof. Chatterjee et le Prof. Alampiew. Il s'agit de terminologie. Je crois que cette espèce d'opposition, que l'on a faite entre les deux types de régions: région homogène et région nodale, ou, autrement dit, région uniforme et région d'organisation, je crois que cette opposition n'est tout à fait fondamentale. Je pense qu'il s'est dégagé des interventions récentes d'aujourd'hui qu'il y avait une troisième notion et qu'on pourrait dire, qu'il y a des faits de répartition; ce sont des zones homogènes; des faits d'organisation; ce sont les zones d'influences autour d'un certain centre; et que la région serait la combinaison de ces éléments de répartition et d'organisation; et que ce qu'on pourrait appeler région économique, ou peut être région tout court. Ce serait le niveau dont parlait le prof. Berezowski, ce niveau de la vraie région où la complexité des relations in ternes et maximum. Le principe d'unité de cette région se réglerait au centre, le métropole régionale, qui engloberait une série, un ensemble de zones, d'aires uniformes, elle serait hétérogène, mais cohérente et dans ce cas on pourrait peut-être réserver le nom de région à cette sorte de combinaison, cette sorte de complexe situé à un certain niveau de la hiérarchie des espaces; soit région tout court, soit, si l'on veut, région économique, mais étant entendu que cette notion de région englobe à la fois des faits de répartition et des faits d'organisation. C'est une suggestion que je fais dans la discussion de terminologie.

MIROSLAV STRIDA

In Czech geographic terminology, the word "region" ("oblast" in Czech) has a general meaning, being used sometimes to denote a part of the earth, sometimes of a continent or a country, etc., and it can be defined from various points of view. The "economic region" in our meaning of the expression, corresponds perhaps to Harris's "human region", and thus contains not only the factors of production and consumption but also the territorial relations of the population and the settlements. I believe that the use of the expression in other socialist countries is similar.

From the point of view of method, it is possible to agree only with the basic aspects of dividing economic regions into two groups: (1) homogeneous taxonomic regions ("uniform regions") and (2) complex focus regions ("regions of organisation"). In fact, the methods of defining economic regions used by various authors contain a number of elements of functionality, zonality, centrality, structure, specialization and complexity which appear in both groups of regions.

In countries with planned economies, we are interested mainly in the complex regions and the methods of research and definition of them required in planning the economy, building, and settling the population in regions. For these purposes, the study of geography and geographical regions can be the most useful.

CHRISTO MARINOV

Il est incontestable que l'éclaircissement théorique des problèmes fondamentaux nous permettra de créer une base solide pour l'application des méthodes mathématiques et économiques modernes. Nous sommes déjà tous fermement persuadés que les questions méthodiques doivent occuper une place centrale dans l'activité de la commission. A notre avis, ce qui est très important dans tous les rapports, c'est que l'on a déjà essayé de suivre et d'exposer les tendances principales et les opinions des spécialistes dans ce domaine. Nous devons connaître à fond ces tendances et ces opinions, si nous voulons apprécier leurs qualités et montrer leurs côtés faibles.

En premier lieu je voudrais m'arrêter aux moments qui nous rapprochent ainsi qu'à ceux qui nous séparent, ainsi qu'aux moments traitant des conceptions théorétiques concernant la division en régions économiques. J'estime que nous sommes liés tous par la conception exposée dans le rapport considérant la région économique comme un phénomène de la réalité économique objective. Ce qui veut dire que la région économique est une donnée objective, formée par l'action des lois économiques objectives, indépendamment de notre volonté et de notre désir. Tout cela prouve que nous devons chercher les méthodes scientifiques les plus efficaces pour trouver cette région. Nous ne devons point la former au moyen d'une spéculation intellectuelle. Si nous acceptons que la région économique est un phénomène intellectuel nous ne serons pas du même avis à ce sujet. Il est tout à fait naturel que les régions économiques conçues comme produit de la pensée ne peuvent pas exister réellement et dans ce cas nous manquerons le but de nos recherches, alors nous n'avons pas à chercher des méthodes pour les construire.

Nous ne pouvons pas renoncer à la nécessité de la création des systèmes régionaux séparés. Cependant, ces systèmes doivent être observés comme un reflet de la réalité objective. Parallèlement il est nécessaire de déterminer, d'un effort commun, l'essentiel de la région économique. Si nous l'admettons comme un complexe territorial de production ou comme un ensemble d'unités uniformes de production d'une branche économique déterminée, la classification respective en dépendra beaucoup. A notre avis, dans les rapports, ainsi que dans la littérature des pays occidentaux, on surestime généralement les signes déterminatifs: *homogénéité, uniformité*. Tout ceci à son tour limite sensiblement le contenu de la région économique, dont il résulte une grande dispersion des unités territoriales. Ch. Colby et Marschner, par exemple, ont déterminé aux Etats-Unis 235 régions économiques. La pratique moderne d'application des méthodes électroniques et mathématiques d'analyse et de modelage démontre cependant qu'ils ne donnent de résultats appréciables que dans le cadre d'un petit nombre de régions. L'étude des rapports interrégionaux aux Etats-Unis s'effectue moyennant des modèles interrégionaux dans le cadre de 3 régions. L'Union Soviétique n'est divisée qu'en 17 vastes régions, tandis que pour la France on a constaté que les 22 régions et les départements sont trop nombreux et les limites trop étroites pour ce but.

La question de la classification et de la hiérarchie des régions économiques est très importante. Il faut y travailler encore longtemps. Les études effectuées jusqu'à présent ne sont pas de nature de nous contenter. La classification connue (uniformité, homogénéité structurale et nodale, organisation) ne représente qu'un cas particulier de la classification générale. Elle n'est fondée que sur une spécialisation étroite des parties territoriales de l'économie d'un pays déterminé et sur des signes extérieurs. Naturellement, nous ne pouvons pas nous contenter de cet état de chose parce que:

1. Dans la réalité économique il existe une interdépendance complexe entre les différentes branches et les différentes entreprises de l'économie nationale. Il en résulte des conjoctions territoriales économiques complexes.

2. Il en résulte que les territoires d'uniformes régions s'interposent et s'entremêlent de manière qu'il ne reste plus de „pures“ régions uniformes.

3. Il ne faut pas oublier que la région économique ne représente pas seulement un ensemble de branches économiques. C'est un organisme économique complexe, dont les éléments (les branches) soumis à leur influence réciproque, changent de contenu et de contours spatiaux. Pour cette raison précisément nous considérons qu'au fond des régions économiques complexes se trouvent les branches de l'économie nationale. Le développement complexe et la localisation des forces productives sont indissolublement liés à la formation des branches territoriales productives, économiquement effectives.

4. L'interdépendance des entreprises, les procédés technologiques communs et la complexité des régions en formation mènent à une complication de la spécialisation et des fonctions. Chaque unité territoriale a une certaine fonction à remplir. C'est du formalisme par conséquent, que de parler de régions fonctionnelles. En outre, indépendamment de son étendue, chaque région a sa structure à elle, donc ce serait une

erreur que de nommer certains groupes de régions „régions structurales“. Il est évident que si l'on s'appuie sur le principe de la réalité économique des différents pays, dans les économies desquels sont développées les branches fondamentales, leur division en régions économiques, c'est-à-dire leur conjonction territoriale et leur organisation doivent être étroitement liées entre elles. Aussi la classification fondamentale des régions économiques doit comprendre les deux groupes suivants: (a) des régions à plusieurs branches, (b) des régions à une seule branche.

A l'intérieur de ces deux groupes en dépendance du degré de leur développement et de leur conjonction il y aurait une autre hiérarchie (dans le groupe des régions à une seule branche, par exemple, on pourrait parler de „régions uniformes“ et dans le groupe des régions à plusieurs branches de „régions nodales“ etc.). Enfin, pour assurer une utilité appréciable dans les travaux de notre commission, nous croyons nécessaire de recourir à l'application de l'expérimentation des traitements méthodiques. De cette façon nous pourrions prouver leur valeur et leur vitalité pratiques.

MICHEL PHILIPPONNEAU

J'ai été particulièrement frappé de ce qu'a dit notre Président le Prof. Leszczycki dans son exposé introductif sur un projet de cartographie, d'une carte générale du monde, des régions économiques.

Je pense que ce serait évidemment très difficile, dans l'état actuel de nos travaux, si l'on se base sur certaines expériences comme celles des pays du Marché Commun où nous avons essayé de distinguer les types de régions.

Le Prof. Leszczycki nous a donné d'abord un excellent argument. Si nous ne le faisons pas nous-mêmes, ce sont les économistes de l'Association de Science Régionale qui feront ce travail. Il serait regrettable que les géographes ne s'occupent pas de ce problème. Mais il y a un deuxième argument sur lequel nous devons réfléchir, argument qui me paraît fondamental, c'est que si nous décidons d'établir cette carte du monde, nous serons obligés préalablement de nous mettre d'accord sur la définition de ces régions économiques, de telle sorte que dans chaque pays nous puissions effectivement distinguer des régions présentant au moins des analogies, que nous puissions comparer les régions économiques des pays de l'Europe Occidentale à celles d'autres continents, à celles des pays d'économie socialiste. Par conséquent, si nous décidons de procéder à l'établissement de cette carte, la première chose à faire consistera à nous mettre d'accord approximativement sur le découpage régional. Nous avons essayé de le faire pour les pays d'Europe Occidentale, pour les pays du Marché Commun. Il y a eu plusieurs tentatives: on a fait par exemple des cartes des régions agricoles en se basant sur la notion de région homogène. On a réussi à faire des cartes de régions agricoles ayant approximativement la même importance au point de vue étendue et production économique.

Mais le résultat n'a pas été excellent parce que ces régions agricoles homogènes ne coïncidaient pas avec des régions que j'appellerais régions de programme, de planification. Il est apparu peu rationnel de classer des phénomènes agricoles sans tenir compte de l'action réelle, des entreprises, des organisations professionnelles, du gouvernement. Par conséquent, je crois qu'un des premiers points à souligner c'est qu'en

procédant à ce découpage par régions, il faudra tenir compte du découpage administratif. Il est peut-être plus facile dans les pays d'économie socialiste de modifier les limites administratives. Dans les pays d'Europe Occidentale, nous devons faire très attention à ce pensent les population.

Il serait beaucoup plus difficile de revenir sur ces divisions administratives. D'ailleurs ces divisions administratives, parce qu'elles existent depuis très longtemps, ont exercé une certaine influence sur l'organisation régionale. Par exemple le découpage administratif en départements, dans le cas de la France, a déterminé un certain rayonnement de la ville-préfecture, et on peut dire que ces villes-préfectures jouent un rôle d'organisateur de petites régions nodales correspondant aux départements. Par conséquent, je crois que, au mois dans certains pays, nous devrions tenir compte du découpage administratif existant. Nous aurions intérêt également à tenir compte du découpage correspondant aux programmes d'aménagements régionaux.

J'ai été frappé justement par ce que disait mon collègue Strida sur la coïncidence entre les régions économiques, les régions de planification et les régions administratives. Je crois qu'il serait souhaitable d'arriver à quelque chose d'analogue un peu partout. Il y aura bien sûr des difficultés. Prenons le cas des Etats-Unis: Il n'y a pas forcément coïncidence entre les cadres administratifs, entre les limites d'Etat et les régions d'aménagement qui sont basées par exemple sur la notion de bassin fluvial. Cependant, on pourrait essayer de faire coïncider la région de programme, d'aménagement, et la région administrative.

Ainsi nous pourrions essayer d'indiquer qu'en gross une région économique devrait avoir entre tant et tant de km², entre tant et tant d'habitants. Elle pourrait comprendre des zones homogènes, mais ces zones homogènes seraient autant que possible animées par des villes-centres, et par conséquent on aurait aussi, avec un centre d'animation une région nodale. Une telle région devrait respecter autant que possible des limites administratives, et surtout elle devrait représenter une région d'aménagement où une future région d'aménagement dans les pays qui n'ont pas encore commencé à appliquer une politique régionale.

Ainsi chaque pays pourrait, à partir de ce schéma qui serait encore vague, essayer le découpage des diverses régions. A cette occasion, nous pourrions dresser une typologie des régions. Je pense que nous pourrions ainsi réaliser une carte du monde qui serait effectivement extrêmement utile parce qu'elle nous permettrait de classer les problèmes économiques en fonction de l'aménagement futur.

La Commission de régionalisation économique aurait alors rendu à tous les pays un très grand service pratique.

MARIA DOBROWOLSKA

I would like to discuss the problem of economic regionalization from the point of view of a planned economy, and in particular: (1) the necessity of coordinating the functional elements and processes of an economic region and its relations with other regions, (2) the value of studies on typical functional structures.

1. The basic difficulties in economic regionalization are connected with the fact that the term "region" is attributed not only to an existing economic-geographical unit (e.g. to a coal region) but also, for analytical

purposes, to areas having an arbitrarily chosen complex of elements (e.g. to an area of certain investments, of land-use, of traffic or even of complex economic processes not strictly belonging to any definite space). It would be more convenient to reserve the term "economic region" for functional integrated regions connected with their geographical environment and formed under the influence of economic laws.

It is a question for discussion whether the term "economic region" should be used to designate "partial" and "uniform" regions which are more likely the product of intellectual analysis and an important instrument of recognition of regional structures. It would seem that the term "zone" or "sphere" is much more suitable when the full economic correlations and functions of these structures are not taken into consideration. We can speak of uniform economic regions only when such homogeneous uniform regions have their own centres of organization. The term "structural" region cannot be accepted in place of "nodal" region, because each nodal region also has its own individual structure. But not every "zone" has its own functional centre since for the most part it is subordinated to some general economic centre.

A specific pattern (agricultural, industrial etc.) in an area resulting from economic activity, such as can be observed from an airplane — i.e. a pure landscape pattern, however connected and adapted to the geographical conditions — should be regarded only as a physiographic aspect of an existing regional structure.

An analysis intended to classify regions on a functional basis shows that uniform economic regions which fulfil only one function do not appear in reality. Each economic region is for the most part an area having various functions, not only productive (i.e. agricultural, industrial etc.), but also trade, transport and other services (e.g. touristic, socio-cultural, administrative or strategic). All these elements and processes, related to geographical conditions and correlated over an area, contribute to the specific structure of a given region under the influence of economic laws. This dialectic correlation of all economic and social processes included in the geographical conditions is the essential characteristic of any regional structure and may serve as the basis for the delimitation of regions.

The coordination of all economic functions and of individual processes, and the decisions on their limits, time and sphere of acting are duties of the administrative authorities and demand an accurate knowledge of the regional structure.

(a) The first task depends on recognition of the chief, dominant function of a region, to which all other functions should be subordinated. The measure used is either the amount of production, the income level or the percentage of employment. The separation of general and local functions should be considered.

(b) The second question depends on establishing whether and in what way the productive, transport and service elements are able to fulfil their functions.

(c) The third task consists in stating in what way all these functional processes are interrelated and whether they are the result of planned spatial organization or the product of spontaneously acting forces. The analysis of the scope of all space relations leads to the delimitation of the extent of a region.

Such a scientific analysis could serve as a basis for arranging an area as an integral functional region (comp. The Gosplan or the Plan of the Economic Development of Yoshini-Kunano or The Tennessee Valley Authority Programme).

2. Theoretically, a specific pattern of transport and of service elements should suit each type of productive regional structure. In fact, however, such a complex regional feature of an economic region — i.e. such a typical model having all its elements and processes adapted to their functions as coordinated with the geographical environment — is very rarely found.

The present-day rhythm of socio-economic changes, characteristic for rapid technical progress, the discovery and application of new sources of energy and new resources and also the changes in the social order render different elements uncoordinated. Thus in our scientific analysis we must take into consideration the trends of evolution, which may change the contemporary functions and influence the whole regional structure (e.g. many new industrial regions in the USSR, the shaping of new centres in Poland as well as in other socialist and capitalist countries, the shifting of the oil-industrial regions of the USA from the East to the South, and so on).

The functional economic region is not a stable category. The instability of regional structures is connected with the development of production forces as well as with changes in the social order. In the course of history the same territory fulfils various productive, transport and service functions, not only as result of technical development but also as a result of government policy or of local social factors.

Thus the investigation of the stage of economic evolution of a region, as well as of its functional elements (e.g. the agricultural structural pattern, sometimes inherited from bygone periods of historical evolution) presents an important task to economic geography. The aim of such an analysis is to achieve a full typological classification of regions in which the regional structures characteristic for certain geographical environments and for certain particular historical periods will be determined.

ANGEL BASSOLS BATALLA

1. In the two years since the Utrecht meeting, a group directed by me at the School of Economics of the National University of Mexico has collaborated in many ways with the Commission. We have sent reports on "Methods of Economic Regionalization in Mexico" to Dr. Harris, on "Practical Applications" to Dr. Juillard, and have distributed a "Bibliography on Regionalization", and a "Bibliography of Atlases", etc., in our own country. Besides this we have devoted ourselves to developing further research on the regionalization of Mexico, in order to present a new map of economic zones and regions of the country at the next 20th International Geographical Congress in London. So far, we have studied Mexican and foreign works and experiences in regionalization, have translated many articles into Spanish, written articles and held conferences on this subject in Mexico. (Among the articles are "La planeación regional en México" and "La integración regional de México", copies of which papers I now present to the President of the Commission).

In our work we try to combine the study of natural conditions, statistics, maps and other material, with wide travel in almost all regions of Mexico, in order to observe in the field all important phenomena that can help us to draw a map of economic zones and regions. We are applying the most useful methods to Mexican reality, in order to obtain a modern and interesting map, which should help future planning. We try to elaborate principles for economic regionalization in the underdeveloped countries of Latin America, because the historical, social, demographic and natural conditions are very different from those of the industrialized countries.

The map of economic regions of Mexico will include some 100 regions; we have already marked out 46 in the South, Southeast and Centre of the country (40 of these regions are predominantly agricultural, with livestock or forestry, 5 are industrialized to the highest degree and 1 is a mining area).

2. It is very difficult to separate homogeneous and nodal regions; economic regions are unions of the nodal and the homogeneous. For that reason, we cannot divide the study of economic regions into two parts, but must work on them as a combination of natural, economic and social conditions that create a special kind of structure in production, distribution of population, specialization of certain branches, and so on. It would be very interesting to have a broad discussion as to what are the most useful and correct methods of regionalization, among those included in the report of Professor Harris.

3. On practical applications of economic regionalization, we can add to Professor Juillard's report that in Mexico regional administrative divisions were created on the basis of ancient indigeneous regions, of natural conditions (great mountain ranges as the most important) and of political considerations, historical background and so on.

Many statistical data are given in Mexico on the basis of "economic zones" that are artificially created and need to be replaced by new ones.

Besides this, there is irrigation only in some parts of the country; but we also have in Mexico seven "Comisiones" to develop backward regions of the Republic like the Balsas, Grijalva and other river basins, or to further improve the more advanced ones like Valle de Mexico, Fuerte, Lerma-Santiago. These are complex regional development plans, similar to those in the Badajoz area of Spain, the Cauca River in Colombia, and others.

4. Finally, we hope that the Commission will continue its work, so that we may have a clearer understanding of the several points raised in Dr. Leszczycki's paper on "Tasks of Economic Regionalization", primarily the practical tasks, taxonomy and hierarchy of economic regions. We think that the Commission can elaborate the essential principles for preparing a map of the "economic regions of the world" in the next few years, even if not all participants accept the same principles as to the methods and tasks of regionalization. The map of Mexico will be ready in 1964.

EDWARD ULLMAN

I should like to make a brief remark about practical applications and the role of the geographers. Like Prof. Juillard and Prof. Alampiev I too have been engaged in practical applications. Prof. Juillard,

in his thoughtful paper, indicates that in America and England the geographers have played the greatest role in practical applications. I am delighted that he thinks so, but for America perhaps he has too rosy a view. I have often wished we were as influential as geographers in some other countries! Perhaps we all consider the grass greener on the other side of the fence.

As for Prof. Alampiev's thoughtful paper I feel that he paints too black a picture in theorizing that in non-socialist countries it is impossible to do good scientific work in applied regional problems, because the means of effectuation as well as the proper outlook are lacking. It is true that we wish better means for effectuation were available. However I suspect that action or influence of the scholar anywhere results from two factors:

1. For any plan or action many conflicting views need to be reconciled and objective studies made. This requires negotiation among bureaucrats of various agencies in any society as well as with business men in capitalist countries. In any case the problem of coordination, persuasion, argument is needed anywhere.

2. Particularly persuasive often is a good piece of research — sound conclusions pertinent to the problem backed up by objective evidence. Such studies, well made, provide an opportunity for the scholar — the geographer — to make a contribution. It, therefore, behoves us to improve the quality of our work.

A conference such as this provides an opportunity for exchanging views, using the comparative method (particularly applicable to geography) and improving the quality of our work.

I might conclude by saying that there is one other closed region, in addition to the African primitive village cited by Prof. Boesch. The other complete region by definition is the whole world as one unit. Our exchange of ideas across boundaries illustrates the working of such an "intellectual region". I hope its unity will continue to increase.

HANS BOBEK

Coming back to what I said the other day about the usefulness of a canon of optimum-criteria for economic regionalization I should like to mention that there are two poles around which the economic life seems to be centered, thus forming various interconnectional systems which, each in its way, contribute to regional integration and may be given priority in delimitating economic regions:

1. The people — with their need for consumption goods and for services of manifold description. A considerable part of such needs and desires is being met through the channels of the distributory network of the central place hierarchy, thus forming interconnectional systems of nodal character. There are still other needs, however, which cannot be met in this way, for instance the recreational needs and affiliated desires which gain momentum from year to year. They also create interconnection systems (very fluid in parts but in others quite stable). Of a different character they are, linking overcrowded areas with suitable recreation grounds in easy reach.

2. The second pole is the production of goods. With progressing specialization and diversification of production the interdependence of

the plants and productive units is ever growing. The necessity to draw raw and auxiliary materials, semimanufactured and other goods, machinery etc. but also labour for the manufacturing process, on the one hand, to dispose of the products, on the other, creates a great variety of interconnectional systems which again have quite different characters. There is a long range between the exploitation of natural resources and the final finishing of consumer goods. Agriculture, animal husbandry, forestry, fishery have other interconnectional systems and they vary according to location and type.

The web of interconnectional systems, centered around production, is extremely complex and varied, fluid, partly parochial and partly far-reaching. All these interconnectional systems are linking, and integrating, structural areas of various kinds, of mixed or uniform character. For mere descriptive purposes we may delimitate economic regions in various ways: according to structural features or /and according to the different types of interconnectional (organisational) systems. For practical purposes, that is planning, be it partial or overall, through private bodies, semi-official boards or governmental agencies, also all relevant features and relations should be taken into account. However, specific interests or tasks, general outlook as well as available means of effectuation will cause specific groups of facts or relations to be emphasized at the cost of others. It is well known that in the USSR, as in other communist countries, where the main emphasis is placed on production, economic regions have been established to suit best production, especially production of the heavy industry type. As well in these countries, where the state is all-important in economic planning, administrative divisions are liable to be adapted to planned economy needs. In the non-communist countries, on the other hand, a tendency can be recognized to place more importance on services and therefore to emphasize nodal regions. Administrative divisions tend to be less affected by economic planning as this is by no means an exclusive matter of administration.

SUMMING OF THE DISCUSSION

KAZIMIERZ DZIEWOŃSKI

To sum up a discussion of such width and variety is a very difficult task, indeed! I shall limit my efforts to a few points only — those on which clarification seems necessary, certain common agreement was achieved and proposals for further action were made.

1. Terminology and basic concepts. Several participants proposed some limitation on the use of the term "region". During the preparation of our report this idea was seriously discussed but we found it impossible to accept. The term is one of common English usage. The Oxford Dictionary gives as a synonym another term: "area", i.e. it describes any part of a space! We cannot develop our particular terminology in opposition to the language in common use — this would only lead to very serious misunderstandings. In other words we have to recognize that even in the geographical sciences several concepts are included under the same term. Three of them are of some importance in our work: First, the term is used to describe certain divisions established or to be established in a formal way by and for the use of the human community. Then, it is a name given to any division of area which is to serve as a basis and a means (a tool) in our analysis. Finally, in our study of reality dealing with problems of a space, we call "regions" those of its parts which we recognize as "subspaces".

In the first case we usually have several systems of regions — political, general administrative, organizational for economic purposes, planning and others. In the second, the number of systems may be almost infinite as this depends only on us. In the last case there can be only one regional system since the reality is unique — here the differences in its description and definition are introduced solely by the imperfections of our knowledge and are, therefore, questions of opinion.

We should not omit from our study any of these three concepts. Although they are not identical or parallel they are correlated, influencing and influenced one by another. To keep their differences clearly in mind we should perhaps call them by different names. Completely new terms are difficult to introduce into general use; thus composite ones seem more appropriate. I should suggest that the terms: "admini-

strative regions", "formal regions" and "economic regions" fit our purposes.

The first term, a general one, may vary in application (e.g. political regions, general administrative regions, economic administrative regions, planning or planned regions as well as Gosplan economic regions). The second may be developed in various ways defined by the criteria used for its delimitation (e.g. the terms "nodal" or "organizational regions", "uniform regions" as generally used seem to be quite appropriate). The third term will demand further division only when the theory of its growth is formulated so that its typology established on a historical and geographical basis is included.

2. Uniform and organizational (or nodal) regions. As has already been observed, these are formal regions. Taken as terms they seem to be correctly constructed — the criteria used in their delimitation are indicated in the terms themselves. But in my opinion some additional thinking about their characteristics is still necessary. Do they cover all cases? Are there no other formal regions? Are they mutually exclusive or are some regions both uniform and organizational? Such terms as uniform and nonuniform would be exclusive and cover all cases but with such terms as uniform and organizational this is not obvious, perhaps even not true. These are matters for further study. However, a few words in defence of such concepts and terms as well as a study of them are necessary here. Formal regions are a tool of area (spatial) analysis. The American term "the regional method" gives us a fair description of their purpose — an analysis by division of a space into parts. Critical appreciation of the methods, of the way they influence the results of a given research — these are very important to the complete success of the research. We should always remember that in an analysis we study various relations but their final picture will always be somewhat deformed and limited by the data used and by the way in which they have been gathered and grouped together. On the critical realization of these limitations depends a proper understanding of the results obtained.

3. Economic and administrative regions. In the discussion a very large place was taken by the regions established for certain practical purposes which I have proposed to call by the general term "administrative regions". They possess great importance for social and economic life and their establishment or revision is, in most cases, the main practical reason for research into economic regionalization. The position was taken that they are the proper subject of our studies, the existence of economic regions being questionable. A sentence was even used which ran more or less as follows: "economic regions should be planned for, but they do not exist in reality". As a regional planner of almost thirty years of experience may I point out that planning without a full and detailed knowledge of present reality and an understanding of the trends in its changes is nothing else but wishful thinking. Research into the nature of reality, of the economic space as created by the existence and activities of human society is a condition for the planning itself. This is why, for me, the regional structure and economic regions as special cases of this structure are the primary problems of economic regionalization; the establishment and the delimitation of administrative regions being but a secondary undertaking of an applied science. We have to

remember that planning is essentially a political art, though an art using scientific methods and based on scientific research.

(4) The methods of regional research to be used in the reform of administrative divisions. With the development of planning, particularly in new states which have recently won their national independence and which, as a result of their recent history as colonies, are not satisfactorily developed there exists a strong tendency to adjust administrative boundaries to their present and emerging economic structure. In this field the work of our Commission may be particularly useful. For that purpose, however, we should gather and evolve on a comparative basis all methods and criteria applied by various countries in the recent reform of general administrative divisions and their structure. Some attention should also be paid to the various kinds of research leading up to and used in such a reform. This is certainly a very promising road to be followed by our Commission in the future.

(5) Comparative studies of administrative divisions. For the last purpose as well as from the point of view of pure research, a proposal put before us by Prof. Blazek and supported by Prof. Juillard should be accepted. In fact, in the report of Prof. Juillard we already possess some materials for such an analysis. To obtain better material an international inquiry should be organized. I am happy to inform you that Professors Blazek and Juillard have promised to prepare a questionnaire which later will be circulated among you. At one of our next meetings we may discuss the results which I am sure will be of great interest.

(6) Possibilities of preparation of a map of world standard economic regions. Another proposal, by Prof. Leszczycycki — to study the possibility of preparing a map of world standard economic regions to be used both for general information and in education, deserves to be taken into account. Some ground has already been broken by the Atlas of World Economic Development prepared by Professors Ginsburg and Berry in the Department of Geography of the University of Chicago. But the general aims and criteria of such a map still require further thought and clarification. For this reason, although I am for the acceptance of this suggestion, I am rather careful in its wording. The problem needs some further discussion.

(7) Bibliography of studies on economic regionalization. Dr. Schneider raised the problem of the bibliography and of the extension of the universal Decimal Classification to cover the whole field of economic regionalization. Professor Berry has prepared for our Commission a very fine annotated bibliography of the more important studies for the USA. In a group composed of Professors Alampiev and Berry, Drs. Schneider, Wróbel and myself, we discussed and formulated some proposals for further work in this direction.

We agreed that selective annotated bibliographies should be prepared and published separately for the more important countries and languages or the world, beginning with English, French, German and Russian. An additional volume for smaller nations should be prepared in one of the international languages. Moreover, the work should be organized on the current bibliography starting with the publications of 1963. The bibliography should be in the form of cards and be compiled by several centres (for instance, by the Department of Geography of

the University of Chicago for both Americas, by the Institut für Landeskunde in Bad Godesberg for West European countries, by the Institute of Geography of the Soviet Academy of Sciences for the socialist countries) and circulated among the interested institutions and persons.

More detailed proposals for discussion will be circulated soon by the Secretariate of the Commission.

*

But to return to more general problems. In the development of any science two different stages repeatedly appear: one in which the science takes over entirely new domains and the next when the knowledge gained is consolidated and systematically ordered. In the first intuition dominated over rigorous reasoning, in the second logical thinking, which goes step by step to final conclusions, plays a much greater role. In fact, the greatest achievements have often been obtained starting from some very muddled concepts. This, for instance, happened in the 17th and 18th centuries in mathematics and physics. If a student were to use the concepts of Newton today he would fail his examinations. But without them the wonderful march of science in that period would not have taken place. But in the 19th and 20th centuries attention was turned toward rigorous presentation of the results achieved and by putting their house in order mathematicians and physicists laid the groundwork for new, still more magnificent achievements. A similar thing is now happening in geography. The great achievements of our forerunners have now to be presented and developed in more precise concepts and terms. It is time to look back and revise our geographical language.

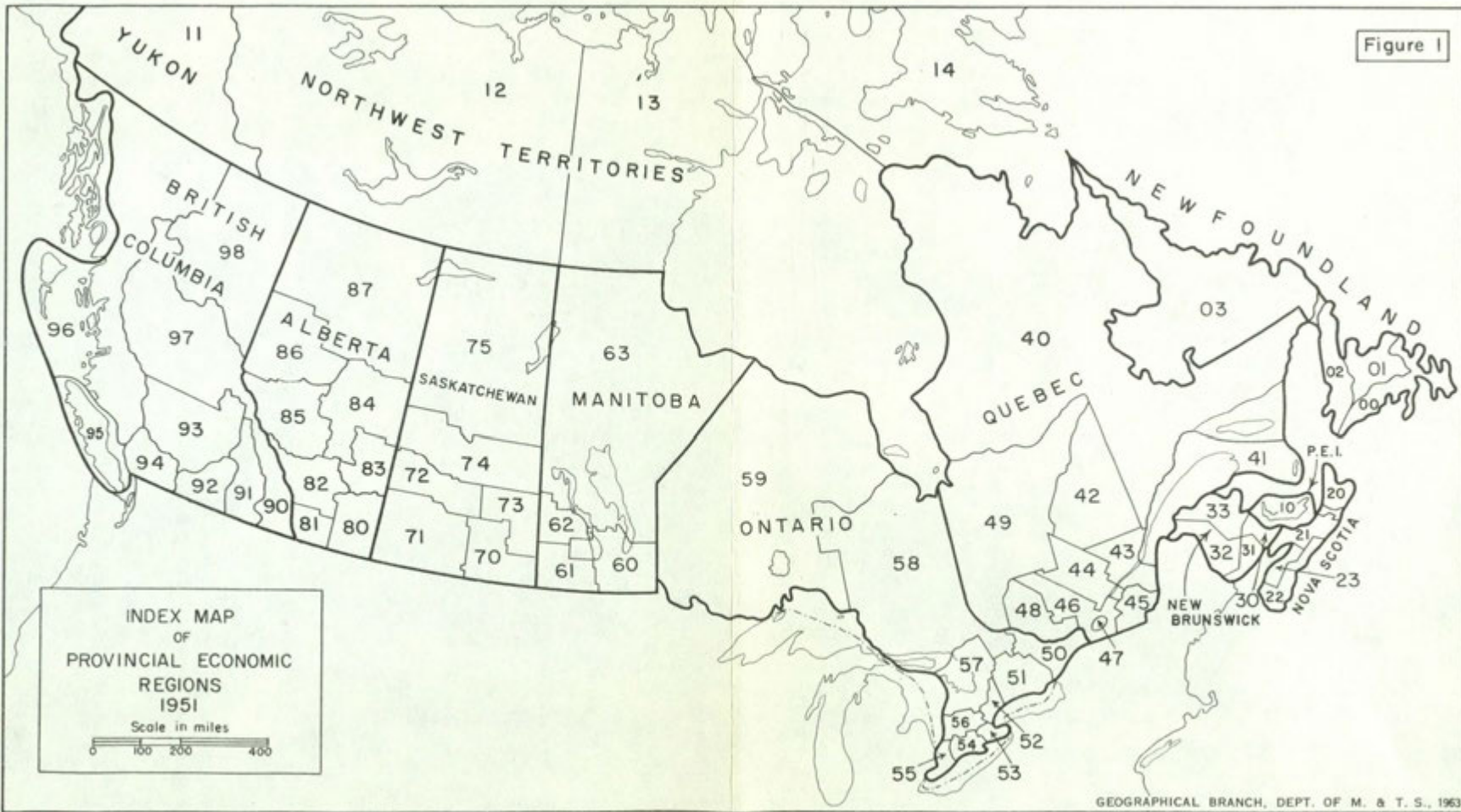
The existence of differences of opinion and theories is the condition for health and progress in science but we should be able to state them — I will even use the expression: to translate them — into one language. If our Commission manages to do so in the field of economic regionalization it will fulfill its tasks and its work will be well remembered in the history of geography.

Errata

<i>Page</i>	<i>Para.</i>	<i>Line</i>	<i>For</i>	<i>Read</i>
8	3	4	Jędruszko	Jędraszko
113	3	2	a regional-economic	an economic
113	4	5	taught	taught
129	1	6	Humboldtyear	Humboldt year
145	8	14	in	is
151	4	2	resarch	research

Geographia Polonica 4. Methods of Economic Regionalization

Figure 1



GEOGRAPHICAL BRANCH, DEPT. OF M. & T. S., 1963

Figure 2

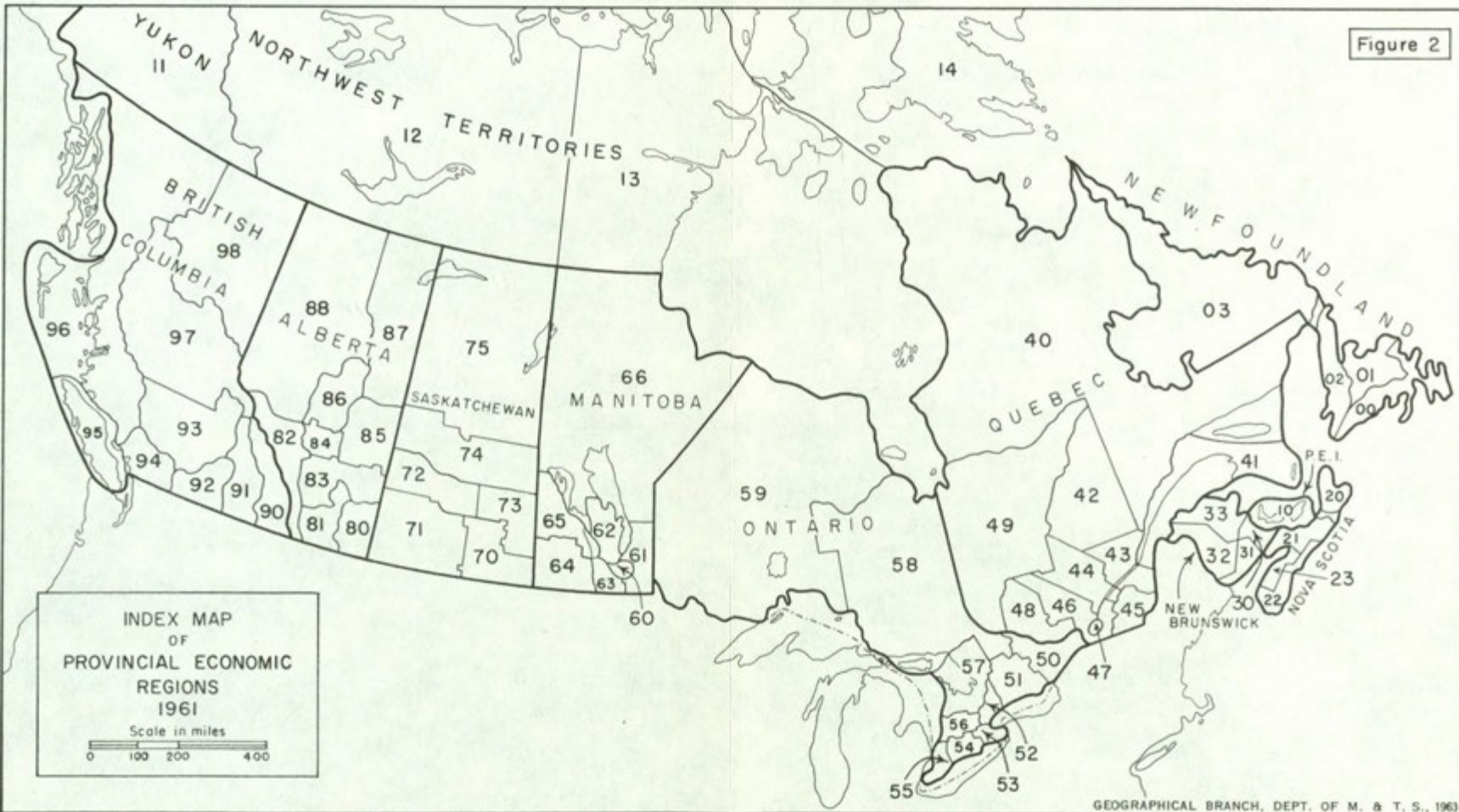
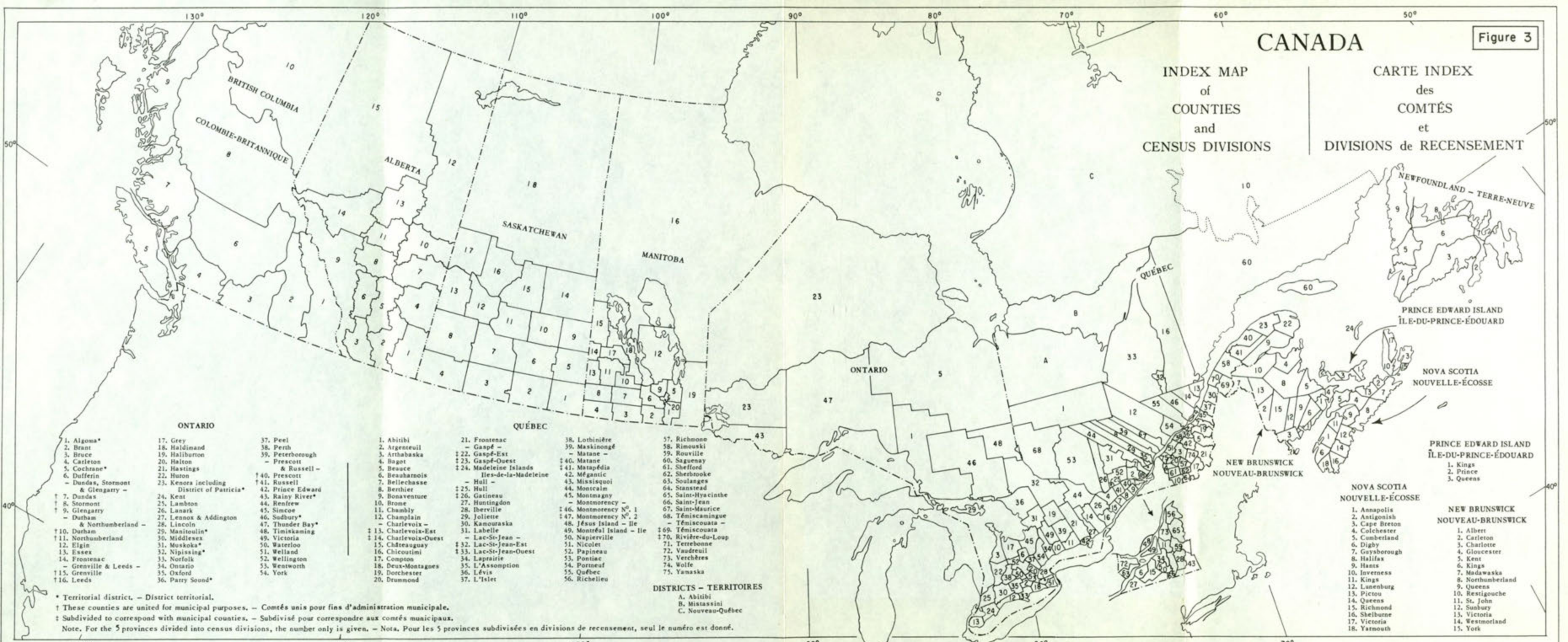


Figure 3

CANADA

INDEX MAP
of
COUNTIES
and
CENSUS DIVISIONS

CARTE INDEX
des
COMTÉS
et
DIVISIONS de RECENSEMENT



ONTARIO

- 1. Algona*
- 2. Brant
- 3. Bruce
- 4. Carleton
- 5. Cochrane*
- 6. Dufferin
- 7. Dundas, Stormont & Glengarry -
- 8. Dundas
- 9. Stormont
- 10. Glengarry
- 11. Durham & Northumberland -
- 12. Durham
- 13. Northumberland
- 14. Elgin
- 15. Essex
- 16. Frontenac
- 17. Ontario
- 18. Grenville & Leeds -
- 19. Grenville
- 20. Leeds

- 21. Grey
- 22. Haldimand
- 23. Haliburton
- 24. Halton
- 25. Hastings
- 26. Huron
- 27. Kenora including District of Patricia*
- 28. Kent
- 29. Lambton
- 30. Lanark
- 31. Lennox & Addington
- 32. Lincoln
- 33. Manitoulin*
- 34. Middlesex
- 35. Muskoka*
- 36. Nipissing*
- 37. Norfolk
- 38. Ontario
- 39. Oxford
- 40. Parry Sound*

- 41. Peel
- 42. Perth
- 43. Peterborough
- 44. Prescott
- 45. Russell
- 46. Prescott
- 47. Prince Edward
- 48. Rainy River*
- 49. Bellefleur
- 50. Berthier
- 51. Bonaventure
- 52. Brome
- 53. Chambly
- 54. Iberville
- 55. Champlain
- 56. Charlevoix -
- 57. Charlevoix - Est
- 58. Charlevoix - Ouest
- 59. Châteauguay
- 60. Lac-St-Jean -
- 61. Lac-St-Jean - Est
- 62. Lac-St-Jean - Ouest
- 63. Napierville
- 64. Nicolet
- 65. Papineau
- 66. Pontiac
- 67. Deux-Montagnes
- 68. L'Assomption
- 69. Dorchester
- 70. Drummond

- 71. Frontenac - Gaspé -
- 72. Gaspé - Est
- 73. Gaspé - Ouest
- 74. Madeleine Islands - Iles-de-la-Madeleine -
- 75. Hull -
- 76. Gatineau
- 77. Huntingdon
- 78. Joliette
- 79. Kamouraska
- 80. Labelle
- 81. Lac-St-Jean -
- 82. Lac-St-Jean - Est
- 83. Lac-St-Jean - Ouest
- 84. L'Assomption
- 85. Lévis
- 86. L'Islet

- 87. Lotbinière
- 88. Maskinongé
- 89. Matane -
- 90. Matane -
- 91. Matapédia
- 92. Mégantic
- 93. Missisquoi
- 94. Montcalm
- 95. Montmagny -
- 96. Montmorency -
- 97. Montmorency N°. 1
- 98. Montmorency N°. 2
- 99. Jésus Island - Ile
- 100. Montréal Island - Ile
- 101. Napierville
- 102. Nicolet
- 103. Papineau
- 104. Pontiac
- 105. Portneuf
- 106. Québec
- 107. Richelieu

- 108. Richmond
- 109. Rimouski
- 110. Rouville
- 111. Saguenay
- 112. Shefford
- 113. Sherbrooke
- 114. Soulanges
- 115. Stanstead
- 116. Saint-Hyacinthe
- 117. Saint-Jean
- 118. Saint-Maurice
- 119. Témiscamingue -
- 120. Témiscouata -
- 121. Rivière-du-Loup
- 122. Terrebonne
- 123. Vaudreuil
- 124. Verchères
- 125. Wolfe
- 126. Yamaska

DISTRICTS - TERRITOIRES

- A. Abitibi
- B. Mistassini
- C. Nouveau-Québec

* Territorial district. - District territorial.
 † These counties are united for municipal purposes. - Comtés unis pour fins d'administration municipale.
 ‡ Subdivided to correspond with municipal counties. - Subdivisé pour correspondre aux comtés municipaux.
 Note. For the 5 provinces divided into census divisions, the number only is given. - Nota. Pour les 5 provinces subdivisées en divisions de recensement, seul le numéro est donné.

NOVA SCOTIA NOUVELLE-ÉCOSSE

- 1. Annapolis
- 2. Antigonish
- 3. Cape Breton
- 4. Colchester
- 5. Cumberland
- 6. Digby
- 7. Guysborough
- 8. Halifax
- 9. Hants
- 10. Inverness
- 11. Kings
- 12. Lunenburg
- 13. Pictou
- 14. Queens
- 15. Richmond
- 16. Shelburne
- 17. Victoria
- 18. Yarmouth

NEW BRUNSWICK NOUVEAU-BRUNSWICK

- 1. Albert
- 2. Carleton
- 3. Charlotte
- 4. Gloucester
- 5. Kent
- 6. Kings
- 7. Madawaska
- 8. Northumberland
- 9. Queens
- 10. Restigouche
- 11. St. John
- 12. Sunbury
- 13. Victoria
- 14. Westmorland
- 15. York

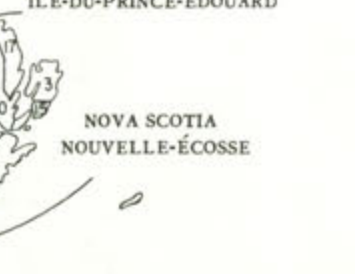
PRINCE EDWARD ISLAND ÎLE-DU-PRINCE-ÉDOUARD

- 1. Kings
- 2. Prince
- 3. Queens

NEWFOUNDLAND - TERRE-NEUVE



PRINCE EDWARD ISLAND ÎLE-DU-PRINCE-ÉDOUARD



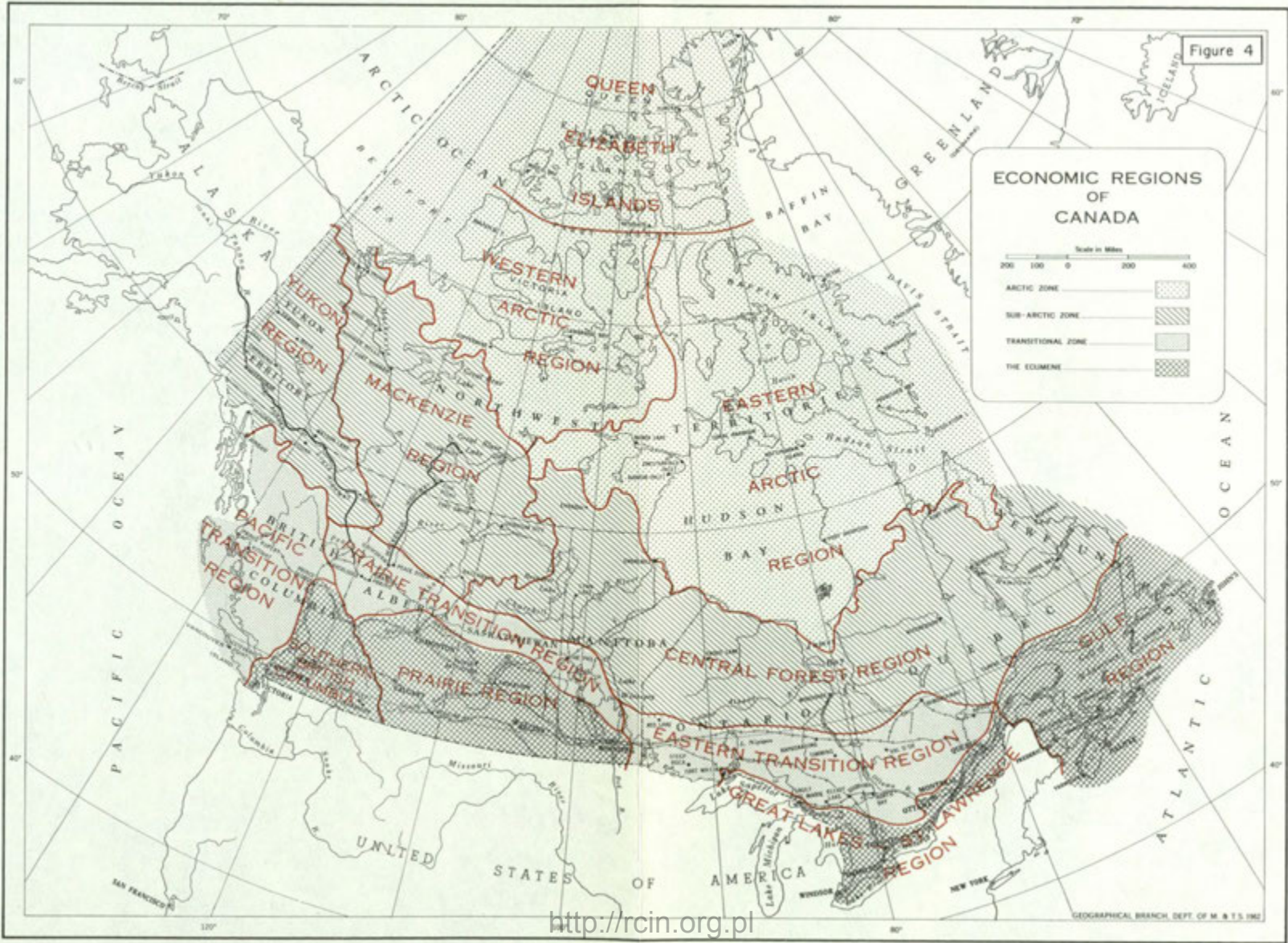
NOVA SCOTIA NOUVELLE-ÉCOSSE

- 1. Kings
- 2. Prince
- 3. Queens

NEW BRUNSWICK NOUVEAU-BRUNSWICK

- 1. Albert
- 2. Carleton
- 3. Charlotte
- 4. Gloucester
- 5. Kent
- 6. Kings
- 7. Madawaska
- 8. Northumberland
- 9. Queens
- 10. Restigouche
- 11. St. John
- 12. Sunbury
- 13. Victoria
- 14. Westmorland
- 15. York

Figure 4



Contents of first volumes of
GEOGRAPHIA POLONICA

VOL. 1

11 papers devoted to the present status of geography in Poland and 3 papers giving the results of research. List of Polish geographers, geographical institutions and geographical periodicals. 262 pp., 20 Figures.

VOL. 2

34 papers prepared by Polish geographers for the XXth International Geographical Congress in London, July 1964. They represent various fields in geography and are dealing mainly with geographical problems of Poland, c. 280 pp., c. 100 Figures.

VOL. 3

Problems of Applied Geography II. Proceedings of the Second Anglo-Polish Seminar at Keele — Great Britain, September 9—20, 1962. Co-edited by the Institute of British Geographers (co-editor of the volume Professor Stanley H. Beaver). 21 papers by British and Polish geographers, c. 275 pp., 69 Figures.

VOL. 4

Methods of Economic Regionalization. Materials of the Second General Meeting of the Commission on Methods of Economic Regionalization, International Geographical Union, Jabłonna-Poland, September 9—14, 1963. Editor of the volume Professor Kazimierz Dziewoński and Assoc. Professor Andrzej Wróbel. Reports, communications and discussion.

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