Biopolitics in Russia: History and Prospects for the Future

1. Introduction

*Biopolitics*, a field of research employing biological concepts, data, and methods in political science, took shape in the West (originally in the USA) in the 60s and 70s. To a considerable extent, this development can be regarded as a "response" to a conceptual crisis in political science within the United States as some political scientists expressed their concern about the insufficient attention given to human nature and, more generally, inadequate conceptual foundations of political science (see Degler, 1991). For example, this concern was voiced in a Presidential Address to the American Political Science Association by John Wahlke (1979), who reproached his discipline with "pre-behavioralism" despite its professed focus on a science of behavior.

It was also in response to a crisis that biopolitics took root in Russia (and some other countries in Eastern Europe). But in these countries it was not just a conceptual crisis. It was a profound political, social, and economic crisis, associated with a general collapse of the pre-existent social system. Many millions of people have had to go through hard times. Prices skyrocketed, and unemployment soared. Many certainties of Soviet life (e. g., free education and medical care), formerly taken for granted, did not exist any longer. Ethnic strife intensified and resulted in fratricidal conflict (e. g. in Moldavia) and the collapse of the U.S.S.R. and Stalin's empire (first Afganistan, the Baltic countries and Eastern Europe, later the disintegration of the the C.I.S. and Chechnya). The economic system became increasingly dependent on *mafia* structures. In this situation, Russian scholars, politicians, and people at large tried to use any available idea (no matter from what field of science) in an attempt to get an insight into the extremely complex political situation and to find a way to improve it. "In short, Russia and Eastern Europe are industrialized societies characterized by intense social conflicts and the absence of *conceptual maps* (emphasis added—authors) or intellectual doctrines with which to understand them" (Masters, 1993, p.244).

Biopolitics concentrates on the biological dimension of the human being as "political animal" (*Homo politicus*) and emphasizes the common behavioral trends in humans and other forms of life. Obviously, this subfield of political science is expected to gain in social importance whenever the political situation favors *biosocially* determined human behaviors, as distinguished from those that are *psychocultural,* to use the term suggested by P. Meyer (1987). Such a situation is likely to arise in a period characterized by the collapse of a formerly dominant value system. In this case, normally suppressed or culturally controlled biosocial behavioral trends may become more manifest than usual. Many people in Russia were concerned about uncontrollable outbursts of "bestial" aggressivity, occurring during ethnoconflicts or clashes between different mafia "clans". Another interesting example is provided by presidential (and other politically important) elections in post-communist Russia, which are evidently dominated by "gut feelings". Although political campaigns in all modern societies are heavily influenced by non-verbal communication and primate dominance-submission relationships (cf. Masters, 1989), these effects may seem especially pronounced where institutions and partisan attachments are new and weak. Under such circumstances, evolutionary biology and its socially important ramifications such as biopolitics acquire additional weight, and its concepts can provide the theoretical foundations for a new social "cognitive map".

Biopolitics is also of special interest for Russians because their political life has another significant "biological component", which was the focus of the seminal paper by L. Caldwell (1964). In Russia, the environment has not yet been adequately protected against industrial pollution and destruction. One important issue is the overpopulation stress ("the effects of noise and of crowding on human population", according to Caldwell, 1964), and much public concern is also caused by the abortion issue as well as by other bioehical and bio-medical problems. Hence in many areas of public policy, biopolitics offers necessary substantive information as well as a more generalized "cognitive map" for understanding human nature and politics.

2. Historical

The history of biopolitics on the Russian soil has been short but eventful. It began in the August of 1987, when the 8th International Conference on Logic, Methodology, and Philosophy of Science was held in Russia (partly in Moscow and partly in the Pacific harbor town of Nakhodka). A relatively young scholar in the field of philosophy of science, Dr. Anatoly T. Zub, presented a talk on "Biopolitics—Methodology of Social Biologism in Political Science". Thie presentation, subsequently published by the organizers of the conference, was the first extensive Russian review article on biopolitics1, with references to the works by L. Caldwell, A. Somit, T. Wiegele, R. Masters, S. Peterson, C. Barner-Barry, P. Corning, G. Schubert, J. Schubert, J. Wahlke, J. Laponce, H. Flohr, W. Tonnesmann, and other prominent scholars. In this paper, A. Zub demonstrated his profound knowledge and expertise in the field of biopolitics, which he had been studying since the early 80s. Nevertheless, because scholars at this time had to pay tribute to the still powerful Marxist-Leninist theory, biopolitics was described as a product of bourgeouis thinking in this paper by him.

About a year later, Dr. Alexander Oleskin from the Biology Dept. of Moscow State University (MSU), inspired by the work by A. Zub he had just browsed through, established a seminar on *Biopolitics* with the help of his colleagues. Originally entitled "Seminar on Bioethics, Biopolitics, and Biotechnology", this seminar is still in operation at the Biology Department of MSU. Once a fortnight, the Seminar brings together a mixed collective composed of professional biologists (E. R. Kartashova, I. V. Botvinko, T. A. Kirovskaya, and others) including mammal ethologists (N. L. Nesterova) , political scientists such as O. V. Borisova (a postgraduate student at the Political Sociology Dept.2 of MSU), philosophers (E.N. Shul'ga) as well as, in some cases, invited politicians and public activists. The Seminar has been repeatedly attended by the Dean of the Biology Dept. of MSU, Prof. Mikhail V. Gusev. Dr. A. Zub gave a talk on biopolitics at one of the Seminar meetings. Some of these meetings took place in the presence of foreign guests, such as Prof. G. Teuchert-Noodt, a neurologist from Bielefeld (Germany) and Mr. J. Briggs, a senior staff member of the *Coca-Cola* Company (USA).

In 1989, A. Zub produced a comprehensive paper dealing with biopolitics and sociobiology, which appeared in the collection of articles entitled *Western Theoretical Sociology in the 80s* (published by the Institute for Information in Social Sciences, USSR Academy of Sciences). Zub also suggested a biopolitical research project for his postgraduate student N. Sidyakina. In 1990, she completed her Ph. D. dissertation, largely focusing on the works by R. Masters, P. Corning, and the German astronomer and biopolitician E. Jantsch. P. Corning's attention was attracted by Sidyakina's brief contribution to the materials of an international conference, and he sent her a letter. Shortly thereafter, Prof. Roger D. Masters began to correspond with Dr. A. Zub.

In 1990, N. Sidyakina and A. Oleskin gave talks on biopolitics at the Annual All-Russian Fyodorov Conference (Moscow) dealing with gerontology, life span prolongation, and bioethical issues. In 1991, the year of the failed hard-liners' coup and the collapse of the Communist regime, a group including Prof. M. V. Gusev and Prof. V. D. Samuilov (Director of the Biotechnology Center) from the Biology Dept of MSU, as well as Prof. M. Manakov made two consecutive visits to Athens (Greece), where they met with a charming lady, Dr. Agni Vlavianos-Arvanitis. She was the President of the Greece-based *Biopolitics International Organisation (B.I.O.)* focusing on the ethical, cultural, legal, environmental, and technological aspects of biopolitics. The second visit (in May, 1991) had an unpleasant surprise in store for the Russian guests, who arrived by boat at the Piraeus Harbor. The Greek frontier guards considered their "shipman's passports" as invalid, and Profs. M. V. Gusev and V. D. Samuilov spent three days and nights in the transit lounge under arrest, having only 250 drachmas (= USD 1.25) with them. On the fourth day, the hapless visitors were released with the personal help of A. Vlavianos-Arvanitis. They were rewarded for their trouble by the very friendly, almost affectionate, treatment they received at the B.I.O. conference. Prof. Samuilov burst into tears on the day of their return to Russia (on another occasion, Mrs. Vlavianos-Arvanitis also shed some tears—this happened when she received a letter from Prof. Samuilov).

A long-term contract was concluded between MSU and B.I.O. On the basis of this contract, A. Oleskin was sent to Greece for 4.5 months. This project resulted in producing the book (by A. Vlavianos-Arvanitis and him) entitled *Biopolitics - The Bio-Environment. Bio-Syllabus*, published in English (1992) and Russian (1993). Dr. A. Vlavianos-Arvanitis made a number of visits to Russia, and she gave several talks at MSU, the Institute of Philosophy (Russain Academy of Sciences), and other research centers. In December, 1991, a Hellenic-Russian Symposium on *Bio-Diplomacy* took place in Athens, with participation of Mr. Valery Grishin, one of President Yeltsin's aides. In 1994, B.I.O. organized an international festival commemorating Academician A. Sakharov (the Soviet physicist and political dissident) in combination with a biopolitics conference.

Starting in 1991, the *Gruter Institute for Law and Behavioral Research* began to explore the interactions between biology, politics, and law in the post-communist region, with special attention to Russia. Established a decade earlier by Dr. Margaret Gruter to bring together the work of scholars in the life sciences, social sciences, and law, the *Gruter Institute* invited several leading Russians, including Dr. Kemer Norkin, Director General of the Mayor's Office of the City of Moscow, to a conference on "The Infrastructure and Superstructure of the European Market: Implications for the Next Two Decades" (St. Moritz, Switzerland, August 26-28, 1991). Based on discussions at this meeting, the Gruter Institute organized a conference "From a Centrally-Planned Government System to a Rule-of-Law Democracy" at the Siemens Stiftung, Munchen, Germany (May 18-19, 1992), followed by a fact-finding trip to Moscow by members of its Steering Committee (May 20-24, 1992). These deliberations in turn led to a major conference at the Brookings Institution in Washington DC on "The Rule of Law, Human Nature, and the New Russia" with the participation of Russian guests who included Cief Justice Lebedev of the Russian Supreme Court and Dr. Norkin of the Mayor's Office (for proceedings, see Danilenko and Smith, 1993; Masters, 1993). Participants from Russia and other post-comunist countries attended subsequent conferences of the Gruter Institute, such as the international symposium on "Migration from the Perspective of Law and Behavioral Research" at the Freie Universitat Berlin (April 16-29, 1995) at which Dr. Norkin presented a paper on migration in Russia and the former USSR.

In 1992, A. Zub published a detailed study concentrating on the ethological and sociobiological dimensions of biopolitics, under the title "Power as Reflected in the Biopolitical Mirror" (with I. L'vov as co-author). The following year, Vitaly Egorov of the Department of Psychiatry organized an international conference at the University of Crimea at Sebastopol. In addition to scholars from the West were participants from a number of universities from the former Soviet Union. In 1993, R. Masters published his paper on "Evolutionary Biology and the New Russia".

In the same year, Oleskin wrote a paper on a somewhat paradoxical subject, the interactions between biopolitics and microbiology, published in the Russian journal *Microbiology* (a revised and updated version of this paper appeared in English in *The Journal of Basic Microbiology*). In 1994, Oleskin published a series of 3 papers on biopolitics in the Russian journal *Moscow University Proceedings (Biology Series)*, and in 1995, a generalizing article on this subject, entitled "Biopolitcs and its Applicability to Social Technologies" in *The Problems of Philosophy* (Moscow).

As far as the gradual dissemination of biopolitical ideas in Russia is concerned, special tribute is to be payed to the Institute of Philosophy, Russian Academy of Sciences. The Head of one of its subdivisions, the Laboratory for Philosophy of Biology and Ecology, Prof. Igor K. Liseev, received Dr. Vlavainos-Arvanitis during her visits to Russia. The Institute produced a fundamental monograph entitled *Philosophy of Nature: the Coevolution Strategy* (by R. S. Karpinskaya, I. K. Liseev, and A. P. Ogurtsov), which gave sufficient attention to biopolitics and related subjects.

Since 1986, the Dean of the Biology Dept of MSU Prof. Gusev was a member of the international *Commission for Biological Education (CBE)* under the auspices of the *International Union of Biological Sciences (IUBS)*. The CBE goals were to eradicate bio-iiliteracy, to promote a biological educational system for non-biologists, and to cope with various "biopolicy" issues. At the conferences of this organization, M. Gusev gave a number of talks on biopolitics. Under his influence, the former Chairman of CBE, Prof. Gerhard Schaefer (Hamburg, Germany) also developed an interest in biopolitics, and mentioned this term in a number of his recent publications. Prof. Gusev supported Dr. Oleskin in establishing a new subdivision, the *Educational & Research Sector for Biopolitics and Biosociology* (short title *Sector for Biosocial Problems*) at the Biology Dept of MSU. This Sector was officially set up in January, 1995. The staff members of the Sector and the associated scientists and scholars have been dealing with both parts of the word *bio-politics*. They have been doing biological research (on the role of chemical tramsmitters in the social behavior of living organisms), engaging in politics-related activities, such as the *Hirama Project*, and writing a *Biopolitics & Bio-Humanities Thesaurus*.This contribution can be considered a preliminary publication in terms of the Thesaurus-related project supported by the Russian Humanities Research Foundation (grant # 96-04089).

In 1995, Dr. Zub defended a Doctor of Science dissertation at MSU on the *Philosophic and Methodological Foundations of Biopolitics*. Dr. Oleskin gave talks on this subject at conferences organized by the *International Center for Economics and Ecology* in 1994 (Tubingen, Germany) and in 1995 (Miscolc, Hungary). Biopolitical matters were also discussed by him at an international *German Limnological Society* conference (Berlin, 1995). His presentation was also included into a broadcast by one of the Moscow radio stations. As it happened, the Deputy Administration Chief of the Moscow City Council Mrs. Olga A. Bektabegova heard this broadcast while driving to her office. She set up a creative lab, *Future of Russia,* under the aegis of the City Council. Biopolitics was incorporated into the research and development projects carried out by this lab, which generally concerned itself with long-term urban planning and optimizing social and political structures in Moscow.

Two talks on biopolitics-related matters (by Prof. Franz Wuketitz from Vienna, Austria, and Oleskin) were given at a Synergetics Conference in Moscow in January 1996. A travel grant from the *American Council of Teachers of Russian (ACTR)* enabled Dr. Oleskin to spend six months at Dartmouth College, working under Prof. R. Masters on biopolitics and to establish contacts with M. Gruter from the Gruter Institute for Law and Behavioral Research and with Professors Albert Somit, Steven Peterson, James Schubert, Peter Corning, Peter Meyer, and others during the ESS/IPSA/APLS Meeting in Alfred (July 22-27, 1996). One of the goals of Dr. Oleskin's visit was to intensify the cooperation between Russian and American biopoliticians (and scholars in related fields).

Following is a brief description of selected biopolitical problems which are currently being actively researched in Russia.

3. Biopolitics and Social Technologies. The Network Group (Hirama) Project

*Social technologies* are interpreted here as including all kinds of techniques aimed at (1) ameliorating interpersonal and intergroup relations in various social settings (families, worker collectives, research teams, artistic creative groups, parliamentary commissions, etc.) and (2) improving the organizational patterns of human social structures per se. With the aid of other scientific approaches (based on game theory, decision-making theory, small group sociology, management theory, etc.), biopolitics can be expected to make its contribution to a number of Russian social and economic problems. Biopolitics-related social techniques should help the country accumulate its "social capital" (Nichols, 1996), i. e. establish dependable relationships between the incumbents of various social roles (bank clerks, clients, sales assistants, production managers, etc.), based on the rule of democratic law.

The project discussed below has been developed by the Sector for Biosocial Problems at MSU and by the Creative Lab at the City Council of Moscow. This project envisages establishing a system of social networks, whose organizational patterns are in conformity with the recent data and concepts of evolutionary biology. The variant of network structures promoted in Russia by biopoliticians has been termed "the *hirama* model", since these small-scale networks resemble the Middle East hiramas established about 2,000 years ago3. There is, nevertheless, also a modern interpretation of the word *hirama* (*High-Intensity Research and Management Association*). The hirama-type networks promote non-hierarchical (horizontal) relationships among people. This principle is in conformity with

* the data on primate social structures, suggesting that they do not always represent "close-knit" rigid hierarchies, can easily disintegrate in response to environmental changes, and often coexist with horizontal relations based on friendly bonds (e. g., among young vervets, McGuire, 1982). Ape groups are characterized by prevailing loose, impermanent friendly relationships (food sharing, greeting, grooming, and game behaviors), despite the presence of dominant individuals ("silver-back" males in gorilla groups).
* the widely accepted concepts on primitive human societies, which are envisioned as relatively small groups (up to 50—100 people) engaged in gathering, scavenging, and/or hunting. Conventionally described as "hunter-gatherers," these were cooperation-promoting, low-density networks which give an individual a chance to migrate and to stay isolated (see, e. g., Maryanski and Turner, 1992).
* ethological data suggesting the involvement of the following factors in behavioral coordination: (1) *hierarchy* and imitation of the leader's behavior by most individuals in the biosocial system, a widespread biosocial pattern occurring in primates (McGuire, 1982), social insects (Zakharov, 1991), and presumably even microorganisms (Oleskin, 1993, 1994c). However, it does not represent the only option; (2) *local interactions* among neighbors which stimulate and imitate each other's behavior (Holzman, 1984)—the practice colloquially known as "keeping up with joneses", such interactions are involved in nest construction by ants (Zakharov, 1991), collective hunting by lions (Stander, 1992), and the movements of "anonymous flocks" (Lorenz, 1966) such as leaderless fish shoals; (3) *diffuse behavior-stimulating agents* permeating the biosocial system (chemical agents, physical fields). For instance, olfaction is an ancient and evolutionarily conservative communication channel operating even in human face-to-face groups.
* historical data on horizontal network structures successfully tested in various historical epochs and countries. These structures can be exemplified by Swiss *Gemeinden* (originally "non-hierarchical, undivided ... valley communities", Steinberg, 1976, p.11), modern Israeli *kibbutzim*, American communes such as "Twin Oaks" (with communal ownership and communal satisfaction of the members' needs), cooperatives in the US and West Europe (e. g., "Mondragon" in Spain), as well as Russian "informal groups", which flourished under Gorbachov's regime.
* finally, with the fact that these networks are spontaneously generated by humans. For example, as new scholarly disciplines emerge in universities,we see them everywhere complementing the existing Departments (themselves networks of individuals who cooperate and compete in complex ways). At the other end of the social scale, we find gangs emerging in otherwise anomic ghetto environments. Hence, from the highest to the lowest social strata, we see informal social networks as essential components of more complex institutional or social behavior (cf. Peterson, 1991; J. Schubert, 1991).

What is the structure of a modernized hirama-type network like? It is a creative group of 10 to 20 people. It deals with an interdisciplinary task/problem such as *Small-Quantity Generators of Environmental Pollution* or *Culture as a Self-Organizing Evolutionary System.* The problem (task) is subdivided into several subproblems. However, despite subdividing the problem into subproblems, the group is not subdivided into parts. The group members work, in parallel, on several (ideally on all) subproblems. The subproblems, therefore, should overlap and provide for a broad interdisciplinary vision of the group's focus.

Roles or functions in this network structure as not fixed or defined, as with the "offices" in a Weberian bureaucracy. Often only one person, the *subproblem leader*, is explicitly attached to a particular subproblem (see Fig. 1). This person collects ideas on this subproblem, generated by other group members. A hirama-type network group has also a *psychological leader.* The individual in this functional role estimates the contributions of all members to the intellectual "money-box" of the network group. The psychological leader, however, does not overemphasize this controller function. This role is rather that of a helper, providing advice, support, and psychological help that is often sought by other group members. Like a "socio-emotional leader" in any task-oriented groups, this individual "can reinforce or reward people on a personal level, take care of the emotional well-being of the group, and behave in ways designed to reduce tension and provide orientation for the group" (Burgoon et al. 1974: p. 146).

A network of this kind typically also includes an *"external affairs" leader*. This individual with this role is responsible for organizing the activities outside the group itself, propagandizing hirama-promoted ideas, establishing contacts with other network groups and organizations, and shaping the pastime and leisure activities, thus contributing to the development of informal loyal relationships among group members. Both the psychology and external affairs functions entail personalizing and harmonizing the relations among members. Modernized hirama-type networks usually make alterations in the group's organizational pattern. For instance, additional leader roles are introduced:

Figure 1. Hirama networking pattern. This is a "momentary close-up" picture, since this structure is dynamic, and creative subunits included in it are constantly in the process of formation & disintegration (fission-fusion structures, resembling the hunter-gatherer society pattern, see Maryansky and Turner, 1992). Designations: S, subproblem leaders; G - just group members; O - an outsider collaborating with the group on one of the subproblems. Thin-line circles are temporary creative subunits or discussion groups. These relationships all correspond to the "task-fullfillment plane" shown in the picture. The psychology and "external affairs" leader (P and E, respectively), are beyond this plane. Types of relations: → partial (task-limited) leadership; ↔ horizontal networking; no symbol between two individuals, standing by and watching.

* a *commercial leader*, responsible for searching for sponsors and grant opportunities and for marketing and other profit-making activities;
* an *organizational leader* who is particularly important while a hirama-like group is organizing its work and legalizing its status;
* a *spiritual leader* (a "guru"). It is evident from the above historical examples that the operation of community-type structures depends on unitary spiritual values, often implying collective attempts at "attaining certain ideals" (Kanter, 1972: p.2). This conceptual basis is personified by the "guru" image.

The group members strive to attain the goals formulated by the "guru" (King Hiram was probably the first of such "gurus"). Importantly, this "spiritual guidance" by the "guru" should be prevented from transforming into an authoritarian dictatorship, which would be quite incompatible with the decentralized non-hierarchical character of a hirama-like group. For this reason, "hiramists" typically prefer a legendary "guru" (like Wilhelm Tell in Switzerland), a long-deceased person whose ideas are contained in his/her works, or, finally someone sufficiently far away from the group's location (the Moscow University hirama dealing with biopolitics has recently suggested an American biopolitician as the "spiritual leader").

Hirama-type structures, despite all modifications, retain some general structural similarity to a primitive hunter-gatherer band. Some essential social functions in a hunter-gatherer group have their equivalents in a hirama. For instance, the "headman" described by Maryansky and Turner (1992) corresponds to the "external affairs" leader in a network group, the shaman resembles the "psychology leader", and the influential people, who are especially skillful in doing certain jobs, are clearly related to creative "subproblem leaders".

Hiramas and similar groups can be useful in a number of different ways in post-communist countries. As internally dynamic and flexible, informal relationships-enhancing collectivities, they can effectively operate in an unstable, unpredictable, turbulent, and ruthless social environment. In contrast, more formalized and more hierarchical groups can only perform well under stable socio-political conditions (Scott, 1981). The following list deals with "a representative sample" of potential applications of hirama-like groups in present-day Russia:

1. *Interdisciplinary Scientific Research*. For instance, an analysis of the effects of environmental pollution on human social behavior cannot be carried out by any traditional-style specialized "Scientific Research Institute," insofar as this analytic research calls for joint efforts of chemists, biologists, neuropsychologists, and scholars in various fields of social sciences and humanities. A modernized network group seems to be an attractive option in this situation. The transition to a market society in Russia (and other similar post-communist countries) necessitates creating special job positions dealing with grant applications, financial accounting, and other tedious "paperwork". The commercial leader position in a modernized network group is perfectly adapted for this sort of work. However, according to the hirama principles (and common sense as well), the commercial leader should only coordinate this work, done by the whole network group with its creative "subproblem leaders".
2. *Small Management-Oriented Group* can be structured as a hirama (a kibbutz is also an option successfully tested by history). Apart from the commercial leader, who becomes a "star of the first magnitude" under these circumstances, the organizational leader can also be expected to be extremely useful. This individual will be responsible for all the legal procedures involved, from promoting the official establishment of the management group to filing commercial lawsuits, a very frequent practice in an "uncivilized" market environment. In such fields as computer software, such networking groups have often proved far more effective than larger, bureaucratized firms.
3. *Small-Size Political Decision-Making or Problem-Resolving Organization*. The creativity-oriented laboratory "Russia's Future," set up under the aegis of the City Council of Moscow, is a good real-life example of an operative network composed of 12 hirama-like structures. In the United States over the last generation, "think tanks" like the Rand Corporation or Hudson Institute have repeatedly illustrated the advantages of such networks in policy planning.
4. *Family*. Particularly an extended, polynuclear family (e. g. resulting from a previous divorce with subsequent reconciliation, achieved in the interest of the children) can be restructured as a network group. Everybody will feel like a partial leader, and viewing someone as a family "psychology leader" will undoubtedly help overcome the tensions characteristic of such post-divorce families (or ex-families).
5. *Staffs, Cabinets, and Committees within Command-and-Control Bureaucracies.* Even within traditional, hierarchically organized bureaucracies, much of the crucial work is conducted in committees and staff networks that are organized in a loose fashion that does not correspond to formal tables of organization and morms of authority. Most obvious in "inter-ministerial" coordinating committees established to meet temporary crises, the hirama is also approximated in some standing committees. High level officials in business and government typically have staffs and aides that are often organized in loose networks, particularly under leaders like the American Presidents Franklin D. Roosevelt or John F. Kennedy who resist bureaucratic rigidity. Even at the apex of a modern industrial state, the Council of Ministers advising the head of government may be supplemented by an informal "kitchen cabinet".

Despite these applications of these small-scale structures, post-communist society cannot be restructured from below unless these isolated networks are linked to produce "molecular" networks.hiramas should use horizontal, non-coercive contacts between them. The establishment of a truly horizontal "molecular" network is facilitated by the social leaders who fulfill "external affairs" function. It is in their competence to conduct negotiations between network groups, thereby establishing creative unions, hiramiades. The resulting unions may be very loose, temporary task-oriented organizations (with the main decision-making power resting with the individual network groups). An example of such relationships might be the interlocking memberships on the Boards of Directors of large American industrial, commercial, and banking firms (Levine, 1984). A relatively rigid second-order structure (practically tested by the Moscow City Council) may be expedient under conditions favoring long-term cooperation among a number of hirama-like groups, with each group specializing in a specific part of the overall task. Despite this specialization, each network group deals with a sufficiently broad field of interdisciplinary research, and the tasks of individual network groups overlap. The resulting network can be called a"second-order" network group if the individual groups join together according to the hirama pattern. In this case, each of the modernized hirama functions (subproblem, psychology, "external affairs", organizational, and commercial leaders) corresponds to a specific network group, which, in keeping with its organizational principles, breaks down its subproblem into "sub-subproblems". Thus, one of the groups deals with the external affairs of the whole collective, and this task is further subdivided inside it.

Interestingly, the leader hiramas can be supplemented by a number of non-specialized groups, equivalents of members with no leadership duties in a first-order hirama. These "free lancers" can alternately generate ideas on different subjects, temporarily forming unions with some specialized network groups.

There is, in principle, no reason why the above pattern cannot be further applied, in order to form third-order, fourth-order, etc. networks. The resulting structures will represent horizontal, non-hierarchical and non-bureaucratic networks. They would revive, on a new basis, Kropotkin's idea of establishing networks composed of an endless variety of groups and federations of all sizes and ranks (Kropotkin, 1918). These structures can acquire a considerable weight and deal with political problems and decisions.

4. Biopolitics as Part of the Cognitive Map for Navigating in Post-Communist Society

Post-communist countries differ in their historical experiences. In some of them (the former Czechoslovakia, in part the Baltic States), socialism made a relatively short-time presence, and the preceding capitalist-society traditions and values have not been completely obliterated. In others, the impact of communist ideas was stronger, more long-lasting, and/or superimposed upon a tradition favoring a centralized power-system (Russia and other CIS countries). Despite these differences, all post-communist countries have experienced (or are experiencing) a period of ideological chaos, characterized by the collapse of the previously powerful unifying ideas and by often uncritical perception of ideas coming from the developed capitalist countries. Under these circumstances, one of the major tasks to be fulfilled by the fledgling civil society is to develop a system of socio-political and ethical principles & values. This value system is essential for the development of coherent networks, since in its absence disagreements and conflicts between hiramas or their analogs appear inevitable. The overarching cognitive map, to be used for navigation in post-communist societies, should primarily pursue the following important objectives:

* filling up the post-Communist ideological vacuum;
* supporting the people by providing them with the most basic ethical, cultural, and political ideas and values;
* denouncing dangerous, impermissible ideas, views, and activities;
* promoting national and political self-identification;
* reconvincing the people that their life is not in vain, that they really can hope to attain a better future;
* criticizing the political course and the behavior of the government and the whole state machinery.

The discussion of all possible variants of such "cognitive maps" is beyond the scope of this paper. Instead, we will deal with a concrete map based on *biopolitics*. As pointed out in the beginning of this paper, it deals with human political behavior as influenced by biosocial factors, and also seeks to conceptualize relations between the human species and its natural environment. A large number of books and papers by prominent scholars have been recently published on this subject (see, e. g. Caldwell, 1964; Somit, 1968, 1972; Somit and Slagter, 1983; Somit and Peterson, 1992; Corning, 1983, 1987; Flohr and Tsnnesmann, 1983; Flohr, 1986; Masters, 1983, 1989, 1991; Schubert, 1983, 1986; Schubert and Masters, 1994; Anderson, 1987; Zub, 1987, 1995; Gruter, 1991; Vlavianos-Arvanitis, 1985, 1991; Vlavianos-Arvanitis and Oleskin, 1992; Gusev, 1991, 1994; Gusev et al., 1991; for a review, see Oleskin, 1994a).

Two dimensions of biopolitics are of interest in this connection. *First*, it concentrates on the biologically influenced aspects of human behavior and needs, thus contributing to our understanding of ethnic conflicts, cooperation and other loyal social behavioral patterns. *Second*, it aims to establish mutually acceptable relations between humankind and the biological environment. In this context, biopolitics can be construed as introducing into political science and practical politics the whole ensemble of biological knowledge concerning *Homo sapiens* and the living organisms around us.

Biopolitics can form part of a new *post-communist overarching cognitive map*, since it can perform a number of important important functions in society:

* the function of a borderline bio-social science based on biological data and also taking into account sociological and political-science research on human behavior. In this scientific role, biopolitics can help design optimized models of human relations and social organization—starting from the grass-roots level (the above "hirama scenario" being one of the examples);
* the mission of a new value system distinguished by its "soft", not-repressive and non-restrictive, character, based upon a most natural idea regarding man as intrinsic part of planetary life (bios). Considering human beings from an evolutionary perspective would help avoid both the Charibda of nationalism and the Scylla of losing national identity. Biopolitics supports the earlier ideas of "environmentalists" and "ecologists" on "Unity In Diversity" concerning both living nature and human society;
* evolutionary biology, a conceptual cornerstone of biopolitics, has a number of potential attractions for all those involved in re-constructing post-communist society (Masters 1993). It emphasizes change rather than constancy, thus encouraging important social changes. It also enhances the importance of individual initiative & enterprise as evolutionary force in general and catalyst of miracle-oriented economic and political developments, in particular. Modern evolutionary theory emphasizes cooperation and mutual support, and these types of interpersonal and intergroup ("inter-hirama) relations are essential for overcoming the post-communist crisis without waiting for the governments to take action;
* in animal societies, there is no clear boundary between family and society, private and public. These facts can be used to promote personal, not dehumanizing, approach in politics, again starting from below.

Human beings represent multi-dimensional systems, and biology can provide knowledge only in some of these dimensions. The biopolitical "overarching map" has a large number of "white zones", to be dealt with by scholars in respective fields of social sciences & humanities. But the very heuristical limitations of biology as basis for social knowledge are a potential asset of biopolitics, since they provide for its social and cultural flexibility.

In a special work (Vlavianos-Arvanitis and Oleskin, 1992: pp.65—68), we demonstrated that biopolitics is compatible with all major world religions, unless they take an over-fundamentalist attitude. With a more tolerant attitude, each religion can find, in its own doctrine, ideas enhancing the importance of biology. For example, regarding environmental protection, the Muslims believe that "whoever plants a tree and diligently looks after it until it matures and bears fruit is rewarded" (quoted according to Vlavianos-Arvanitis and Oleskin, 1992: p.67). In countries with a multi-religious population (like Russia, Bulgaria, or China), biopolitics can help ease the religious tensions. It also has a special appeal in terms of bios-related mythology characteristic of Ancient human society, which deified animals and plants as spirit-endowed beings, as well as life as planetary spirit.

In summary, the politically relevant dimensions of modern biology can be recommended as an "intellectual paradigm for understanding human society". Particularly in the Eastern European geopolitical zone, they conform to such traditional features as collectivism, mutual aid, spirituality, and hope for a better future. Importantly, biopolitics represents an open paradigm, since it provides incentives for fruitful cooperation involving natural and social sciences and humanities.

5. Bio-Policy Issues in Russia

The role of *biopolitics* as an important component part of the post-communist "overarching cognitive map" is further enhanced by the fact that it can be used not only in social technologies and in a quasi-ideological role. Evolutionary biology has recently developed important ramifications applicable to a variety of social problems and issues. Among them, the following problems & issues seem to be of paramount importance for Russia:

* *Environmental Protection*. This dimension of biopolitics has been long one of the foci of the activities of various action groups, both formal and informal. Under Gorbachev, many of such groups, starting their activities as "environmentalists", gradually switched over to more political agendas. It is pertinent that in the Baltic countries, which still formed part of the Soviet Union in the late 80s, national liberating movements often employed ecological and "green" slogans. Generally speaking, struggle against environmental destruction provides a very attractive ideological basis for the development of network-like groups including the type discussed above (in this case, such a network group is biopolitical in terms of both its structure and specific goals). Despite all the activities of environmentalists, however, environmental deterioration still remains a burning question in contemporary Russia. This is in part due to the economic chaos and a low standard of living (for a majority of people), so that protecting the *bio-environment* (as termed by A. Vlavianos-Arvanitis) is sometimes considered a luxury, in view of the more vital concerns. Importantly, biopolitics provides a broader conceptual basis for environmental protection than, e. g. the "green" or purely "environmental" movements. Since it includes the behavioral and neurophysiological dimensions, it encourages scholars and scientists to consider the relationships between environmental factors and human behavior and the performance of the nervous system. In this vein of research, R. Masters has recently investigated the correlations between heavy metal (Pb, Mn) pollution, alcoholism, and violent criminality in the US. A similar study would be even more interesting in Russia, which is notable for its heterogeneity in terms of both pollution (there are great differences between polluted and ecologically clean regions, or, for that matter, even between "dirty" and "clean" districts of Moscow) and criminality rates. A. Vlavianos-Arvanitis (e. g., 1985, 1991) considers the whole package of problems in more philosophic (almost mystical) terms. She describes the totality of all living organisms on Earth as a single *body of bios*, and she compares destroying the Amazon rainforests to damaging the "lungs" of this planetary quasi-organism.
* *Education*. The above discussion on environmental protection provides *per se* a sufficiently important reason for introducing a biological curriculum into the educational system for non-biologists and thereby attempting to eradicate bio-illiteracy (Gusev 1991; 1994; Vlavianos-Arvanitis 1985; 1991). An additional reason is that biological (and specifically biopolitical) knowledge seems to be mandatory for lawyers, political decision-makers, public activists, medical doctors, and reprentatives of a large number of other professions in their everyday activities. The international Commission for Biological Education (CBE) currently pays considerable attention to Russia, which is in part due to the fact that CBE includes an active Russian member;
* *Legislation*. The development and enforcement of a reliable legal framework, with respect to environmental concerns and other issues of bio-policy (e. g., abortion, euthanasia, organ transplantation, patenting genetically engineered organisms, etc.) still represents a seroius challenge for Russia, despite the considerable recent progress in this field. Bearing in mind the relationship between the environmental and behavioral issues of biopolitics, special attention should be given to the following questions: "What species-specific behaviors are most relevant to environmental law?... What are the implications of these behaviors for laws dealing with environmental preservation?" (Gruter, 1991, p.123);
* *Technology*. Using living cells and their components for the purpose of producing drugs, food additives, etc. has become an important industrial strategy in Russia. An active role in these developments has been played by the Biotechnology Center of MSU, which for a long time was headed by Prof. V. D. Samuilov. Another active catalyst of these biotechnological developments was Prof. Manakov from the Fine Chemical Technology Institute (Moscow, Russian Academy of Sciences). The Biotechnology Center published, in the late 80s, a series of 8 guide-books covering genetic and cell engineering, enzyme technology, cell cultivation in vitro, protein production, and other dimensions of modern biotechnology. Inportantly, biotechnological and environmental problems often overlap. On the one hand, biotechnological developments can help protect the environment. For example, industrially cultivating and then using under field conditions the natural enemies of weeds and harmful insects (e. g., the bacterium *Bacillus thuringiensis* can be used to fight insect pests) is an ecologically clean alternative to employing pesticides. On the other hand, biotechnology can itself produce ecologically dangerous substances. For instance, large-scale industrial production of bacterial protein in the Russian town of Kirishy resulted in releasing huge amounts of this protein (as an aerosol) into the atmosphere. This kind of air pollution caused an upsurge of "green" protesters' activity—almost to the point of an organized rebellion.
* *Energy*. With the help of unicellular organisms, one can produce renewable fuel (ethanol, bio-gas, hydrogen) as an environment-friendly and economical alternative to oil, gas, coal, or uranium. Curiously enough, some of these bio-fuels can be produced only by mixed cultures of microorganisms. For example, no single microorganism species can convert industrial or municipal waste to methane-containing biogas; this requires a concerted action of at least 3-4 microbial species, each carrying out one of the many reaction steps. The cooperation-based microbial association required for this task is characterized by complex biosocial interactions and can itself be described in quasi-biopolitical terms (Oleskin, 1993).
* *Urban Planing*, a part of *bio-architecture* (Eibl-Eibesfeldt und Hass, 1985; Vlavianos-Arvanitis and Oleskin, 1992). This is a research direction aiming to use biological patterns (e. g., a honey comb, a spider's web, a bio-membrane structure) in architecture. It also emphasizes the idea that an architect should pay sufficient attention to ethologically based human behavioral trends. In a primate group or in primitive human society, there was virtually no distinction between social and family life, public and private activities. Bearing in mind these evolutionary considerations, the idea of a creative mix was put forward in bio-architecture. This idea envisages mixing, within a small area, educational facilities, industrial enterprises (on condition that they are prevented from polluting the environment), recreational facilities, as well as apartment houses. Moreover, architectural innovations may promote the people's feeling of self-identification with a specific local community (e. g., by installing sports facilities and constructing leisure game club rooms on the roofs of houses), bring the people closer to nature (by cultivating ivy plants climbing up the house walls), and provide necessary premises for partial economic self-sustainability of such a community. This can be achieved, for instance, by cultivating vegetables on house roofs and balconies. The color palette used in the interior of a house is also of considerable importance. Since our evolutionary ancestors spent most of their time in forests or on savannas, the green color still carries a special, subconsciously perceived message, comforting and reassuring us, and also stimulating the operation of the eye and the visual cortex. Bio-architecture is one of the foci of the activities of the Creative Lab Future of Russia under the Moscow City Council.
* *State Politics*. The process of social self-structuring, discussed above in the example of the network group model, can be facilitated by establishing a horizontal network structure (e. g., a hirama or an association of hiramas) inside the state machine itself. There are different strategies for attaining this goal. Either the state can be persuaded to set up a new hirama-type structure dealing with an overarching socio-political doctrine, or one of the pre-existing network structures can pressurize the state, by winning popular support, into incorporating it into its apparatus. This network group could then make good use of all state-supported facilities, such as mass media and publishing houses, in order to propagandize its doctrine. Importantly, in contrast to the Soviet-epoch "ideological commissions" of the Communist Party, this network group inside the state must not be able to coerce or oppress the people. This organization must not persecute dissidents, who should feel free to express and defend their views (unless they come into conflict with laws). It should try to convince the people of its views by organizing public discussions and debates.

A final point concerns the impact of the state's political course on the development of biopolitics in Russia. A moderate middle course, based on a compromise between the reformers and the moderate conservatives, the central and regional political systems, the churches and the state, etc., is most likely to create optimal conditions for positive socio-economic developments in general (Yergin and Gustafson, 1993). Such a well-balanced political course would also contribute to the growth of network structures, clear the hurdles on the way of biopolitics as a cognitive map, stimulate a scientifically-based discussion of all biology-related social issues, as well as help create the necessary legal framework for their solution.

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Notes

1. Biopolitics-related subjects (particularly sociobiology) had been extensively discussed in Soviet papers (for instance, by R. S. Karpinskaya) before 1987. The word "biopolitics" was briefly mentioned in a paper by Karimsky published before 1987.
2. 2 The staff members of this department are familiar with biopolitics, which was briefly described in one of the articles of the Political Science Dictionary published by them in 1994.
3. 3 According to the legend, King Hiram employed a number of architects and construction workers to construct a new temple. The workers were classified by him into "novices", "helpers", and "masters", but this subdivision was neither profession-based, nor strictly hierarchical. They all had similar (as we would say, "overlapping") jobs, and the only reliable distinctive criterion was the specific secret password each of the worker types had. This password system, introduced by King Hiram, finally cost him his life, according to the legend. Three "helpers" decided to extort the "master" password from him without success. Then the three men inflicted severe injuries on him with their measuring tools (they struck him with a ruler, then with a compass, and finally with an iron triangle). The king died, and was glorified as a martyr by mystical thinkers, including masons.

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