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Aspects, Criteria, and Measurements of Stratification of Modern Societies in the Process of Intersocietal Selection

The stratification of societies in the modern world system of societies is essential; however, it is not developed substantially. Therefore, with the aim to elaborate a coherent system of aspects, criteria, and measurements of stratification of modern societies, the author applies theoretical decomposition of the aspects of intersocietal stratification into criteria, develops its measurements, and argues the relevance of interpreting them as stratifying ones. As a result, ten aspects and twenty-five criteria with the respective measurements of stratification are discriminated.

Keywords: society, world system of societies, aspects, criteria, and measurements, stratification of societies, intersocietal selection.

Despite the fact that human societiesⁱ possess common attributes – universals, modern societies have substantial inherent *differences*. The differences between societies (intersocietal differences) can constitute a mere differentiation. In that case, it is adequate to state that they are *different* and comparable only in terms “similar-different.” Yet modern societies, intensively interacting among themselves, have certain important properties, due to which the societies can be analyzed in terms “higher-lower” and, by specified criteria, located at least on an ordinal scale. Such *stratification* of societies (intersocietal stratification) is analogous to social stratificationⁱⁱ in a society. It can be defined as ranking of societies, performed either by the number of their components or by degrees of manifestation of their properties. For example, the identification of position of Ukrainian society in the system of intersocietal stratification will open a range of possibilities. In particular, the possibility to understand the global causes of the contemporary welfare conditions of the citizens of Ukraine better, to realistically evaluate the probable scenarios of interaction with other societies, and to develop the strategies to improve the stratification position of Ukraine in the world system of societies.

In social sciences, there are numerous instances of international comparative research, but only in isolated aspects. For example, Norberg (2005), Rosefielde (2002), Subbotin (2004) compare economic power; Brzezinski (1997), Martin, Metzger, and Pierre (2005), Rukavishnikov (2007) analyze military might and political weight; Deacon, Hulse, and Stubbs (1997) contrast social welfare. These partial solutions of the puzzle of the degree of intersocietal stratification are quite productive; however, they only reflect segments of the total intersocietal stratification. Societies located lower in one aspect (for example, by the degree of economic productivity) can be situated higher in another aspect (e.g., by the degree of social cohesion). Therefore, for a more precise comparison between societies, it is necessary to elaborate an integral conception of intersocietal stratification and conduct analysis of this stratification in a multidimensional space with a set of detailed criteria in each aspect.

Given the impossibility to comprehend the intersocietal stratification in all conceivable aspects within the framework of a single body of research, it is more reasonable to then focus on a significant complex of its aspects – on separate stratifications. In reality, all aspects are to some extent interconnected, but in theory, intersocietal stratifications may relate to two types of phenomena. First, these can be *societal functioning* (for instance, intersocietal stratification by the degree of integration of a society, by the legitimacy of political authority, or by conditions and the quality of life of its population). Second, they can be *relations between societies* – intersocietal relations (e.g., intersocietal stratification by the quantity of resources of certain societies, or by the inequality of political relations between them). From this perspective, for a society as a totality (though not necessarily for separate social groups within a society that might seek to join another

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society) the primary are the chances to succeed in the process of *intersocietal selection*ⁱⁱⁱ, which can result in reproduction, assimilation, or collapse.

Hereby, the aim of this research is to *elaborate the conceptual aspects, criteria, and measurements of stratification of modern societies in relation to intersocietal selection*. For this purpose, the following objectives have to be accomplished: the development of a system of conceptual aspects of stratification of societies, the decomposition of these aspects into separate criteria, and the identification of conceptual measurements of intersocietal stratification for each criterion.

From the standpoint of an interpretive sociological paradigm, intersocietal stratification can be understood only from the perspective of *the members a society themselves*. This is a promising research direction, which can be implemented as a public opinion survey concerning the principles of stratification of societies and the position of their society within this system. Nevertheless, for the inquiry of intersocietal stratification as a global phenomenon it is more relevant to apply the postpositivist approach, as it implies a study of intersocietal stratification using objective methods from the perspective of *scientists themselves*.

The achievement of the stated objectives is possible on a conceptual level through theoretical-deductive elaboration of qualitatively heterogeneous aspects, criteria, and measurements of stratification, and the consequent critical analysis of their relation either to differentiation or to stratification.

According to the systems approach, any system interacts with *external environment*, consists of components, and has an internal *structure*. In order to assess the chances of success in intersocietal selection, it is important to consider not only the positions of individual societies in intersocietal relations, but their internal resources as well, as they can secure an edge in these relations. Therefore, it is reasonable to examine the stratification of societies taking into account their interactions with external environment, properties of their components, and structural attributes. However, such division is too general for the purpose of development of specific criteria and dimensions. Thereby, it is relevant to explore the constitution of society and the composition of its external environment from the standpoint of ecological-evolutionary theory of Lenski. According to this theory, external environment consists of a biophysical external environment and a social external environment (Lenski, 2005, p. 12-13). In accordance with ecological-evolutionary approach, society is comprised of: population (which has genetic constants, genetic variables, and demographic variables); material products (among which the most important are capital goods used for production of other goods); culture, which consists of symbol systems (which are subdivided into spoken and written language) and information (the major components of which are ideology^{iv} and technology^v); social organization^{vi}, (which includes social positions, roles and statuses, social groups, classes and strata, institutional systems^{vii} (which consist of social institutions and combine all other components of society, the most essential of which are institutional systems of kinship, politics, religions, and education) (Lenski, Nolan, & Lenski, 1995, p. 26-51). Whereas in the process of intersocietal selection material products are a specific kind of resources, for a stronger theoretical consistency and convenience of conceptualization it is better to designate them as “material resources.” Social organization in the abovementioned sense is completely adequate to be denoted with a more widespread term of “social structure.” For the study of the institutional systems of society, it is important to take into consideration that they are the subsystems of society and should defined correspondingly. It is evident that other systems comprise society too, but at this stage of the research, it is sufficient to examine the principal subsystems. Taking into account the ecological-evolutionary approach to the analysis of the constitution of society, and implying that properties of each component – of external environment, constituents, or structure of society – can be factors of intersocietal stratification, it is logical to view the basis of stratification of modern societies in the aspects indicated below. They are: (1) the attributes of the *biophysical* external environment of society, (2) the attributes of the *social* external environment of society, (3) the

attributes of the *population* of society, (4) the attributes of the *material resources* of society, (5) the attributes of the *culture* of society, (6) the attributes of the *social structure* of society, (7) the attributes of the *kinship subsystem* of society, (8) the attributes of the *economy* of society, (9) the attributes of the *polity subsystem* of society, (10) the attributes of the *religion subsystem* of society, (11) the attributes of the *education subsystem* of society.

Historically the most fundamental external sources of influence on society were the attributes of its *biophysical external environment*. Modern macrosociologists Lenski, Olsen, and Diamond repeatedly mentioned the importance of ecological conditions for the advance or the collapse of societies. Among the most obvious and verified conducive attributes of biophysical external environment are the availability of water resources for the emergence of agriculture in the Nile valley and Mesopotamia (Lenski, 2005, p. 59). Apart from this, there are other important general ecologic-climatic conditions (soils, temperatures, rainfall etc.), as well as their dynamics (cycles of volcano eruptions, droughts, ice ages) that can influence certain territory. Given the modern level of technological development, the degree of availability of energy resources, necessary for functioning of modern industry, are more relevant variables (Heinberg, 2005, p. 1). The forms of interaction of societies with their environments are significant too. For instance, Diamond demonstrates a vivid example of how a total cut of forests on the Easter Island led to an ecological collapse, war, and the overthrow of elite together with the well-known stone statues (2005, p. 20). Hereby, with relation to biophysical external environment, societies can be stratified by the three criteria: (1.1) *ecological conditions*, (1.2) *natural resources*, and (1.3) *interaction with the biophysical external environment*. The measurements of stratification by the criterion of ecological conditions can be *the degree of favorability of conditions* of biophysical external environment for existence of society. As a measurement of stratification by natural resources, it is reasonable to consider *the degree of natural resources richness* of the biophysical external environment. As a measurement of stratification by the criterion of interaction with the environment, it is logical to select *the degree of favorability of interaction* with the biophysical external environment.

Similarly, the conditions of *the social external environment* are weakly dependent from society, but they are the potential basis for the stratification of societies. On one hand, hostile neighbors can become aggressive and pose an immediate threat for the very existence of a society, while on the other hand, friendly trade partners can be a source of its prosperity (Diamond, 2005, p. 14). Overall, it is advantageous to be located on the crossroads of trade routes, especially under conditions of transport and information communications, as it opens wide perspectives for a society: migrations, exchange of goods, and the acquisition of cultural information through diffusion (Lenski, 2005, p. 61). *Vice versa* – the existence of social and cultural barriers affects interactions with other societies, deprives from many benefits of cultural exchange, and decreases chances of a society for success in intersocietal selection over the long run. Anthropologist Harris explains current low levels of economic and political development of many Sub-Saharan African societies by the very existence of the desert as a natural barrier for technological exchange (1991, p. 9-10). Similarly to the interaction with the biophysical external environment, the forms, modes, and the intensity of interactions with the social external environment are crucial for a society to prosper. For on an empirical level, large-scale and effectively applied direct foreign investments can substantially increase the productivity of the economy of a given society. Conversely, trade embargo because of the violation of human rights can cause humanitarian catastrophe in a blocked society. Since the interactions with the social external environment are essentially the social relations between societies, it is accurate to name them “intersocietal relations”. For the reasons described above regarding the social external environment, it is possible to distinguish the following criteria of intersocietal stratification: (2.1) *external social conditions*, (2.2) *external cultural resources*, and (2.3) *intersocietal relations*. *The degree of favorability* of the social external environment for the existence of society can serve as a measurement of intersocietal stratification by external social conditions; *the degree of cultural resources richness* (material products and

information) of the social external environment is the measurement by external cultural resources; the *degree of favorability of relations* with the social external environment is the measurement by intersocietal relations.

The study of the population attributes of society as a basis for intersocietal stratification requires a review of the population's *genetic attributes*. Whereas genetic constants are identical for populations of all societies, it is logical to analyze only the differences in genetic variables. Pandemics demonstrate the significance of unequal distribution of genetic characteristics in populations of societies. According to Diamond, European societies conquered societies of both Americas not so much by technological edge, as because of germs, to which the subjugators were immune while the natives were not (1997, p. 111-112). On the other side, Europeans were threatened by dangerous tropical infectious disease as well. Thus, the spread of adaptively beneficial genetic attributes of the population of society is too ambiguous to be counted as a prerequisite for intersocietal stratification, as it is virtually unpredictable to define, which genetic characteristics will be adaptive in a given time and for which one of the interacting societies. This also contrasts with material resources, larger quantities of which are a definite advantage for a society. Nevertheless, *the demographic attributes* of population are an apparent aspect of stratification of societies. The importance of population size was noted by reputable macrosociologists, specifically, Lenski (2005), Olsen (1991), Sanderson (1999), Diamond (2005), and McNeill (1982). According to the assertion of Lenski, for preindustrial societies, a larger size of male population literally indicated a larger number of warriors, and the respective advantage in intersocietal selection (2005, p. 71). Besides, a larger population size is connected with wider possibilities for extraction of resources and the production of surplus, which can be used to increase the military supremacy, to strengthen the elite, or to invest in architectural masterpieces etc. However, while large population size can be an advantage (for herding, frontier agrarian, and industrializing societies), it can be a threat too – because of the deterioration of the quality of life, the disruption of ecological balance, and the risk of societal disorganization. A bright example of such threats is with the collapse of the Native American Anasazi society located in South West United States (Diamond, 2005, p. 21). Therefore, the composition of society would be a more accurate criterion of stratification of societies, as one considers gender, age, and other demographic distributions. Moreover, not only the current composition, but also the dynamics of population (the structure and the rate of population growth) are important for intersocietal selection. Hence, there are grounds to claim that the population attributes of a society contain one significant aspect of intersocietal selection – *the demographic attributes* of population of society. It is relevant to distinguish between (3.1) *the composition of population*, and (3.2) *the population composition dynamics*. *The degree of optimum of the composition* of population (balanced ratios can be used as a measurement for the stratification of societies. Moreover, *the degree of population reproduction optimality* (during Malthusian cycle a longer duration of cycle is better, while during demographic transition a shorter duration of transition is better) can be applied as a measurement for the stratification of societies.

An undoubtedly important aspect of intersocietal stratification is *the qualitative composition of material resources* of society. The more energy, raw materials, food, means of production, and surplus belong to a society, the higher are its chances to succeed in intersocietal selection. Even if one examines the power of military superiority, one would find that in case of a war an army must be provided with a sufficient quantity of food and its reliable supply, secured with clothing, means of communication and transportation. In general, military expenditures are quite costly; they consume a considerable amount of surplus. For instance, according to some scholars, the excessive expenses of USSR on its military-industrial complex were one of the decisive causes of disarray regarding its economy and the succeeding collapse: basically, the explanation is that USSR had military parity with USA but its economy, unlike USA economy, could not bear the enormous military spending (Sanderson, 1999, p. 251-252). Apart from food resources, critically important in the past, there is a significant inequality in other material objects and energy resources. An interim

conclusion is that material resources of society in general is a criterion of intersocietal stratification. The following criteria of intersocietal selection by material resources are the most significant for survival: (4.1) *food* resources, (4.2) *material objects*, and (4.3) *energy* resources. The corresponding measurements of stratification by these criteria are *quantities of food, material objects, and energy resources* respectively, calculated as absolute GNI values.

However, efficiency with regard to the usage of material resources is directly linked to corresponding technologies. Therefore, *the attributes of culture* of society are worth research attention too. Studying the causes of societal development, Lenski came to conclusion that in this respect the most influential factor are differences in *the operating subsistence technology* as the most widespread and applied knowledge about the methods of use of environmental resources and about the satisfaction of human needs and desires (2005, p. 84-87). Besides technologies, religion, ideology, and science are important causes, which may induce for the survival of society (for example, as they enhance the creation and adoption of innovations) (Lenski, 2005, p. 76). Overall, the more cultural information society has, the higher its probability of cultural (technological or ideological) edge. Thus, the attributes of culture of society are an important measurement of intersocietal stratification. If symbol systems are viewed independently from their social external environment, each intrasocietal symbol system (especially language) has a unique value. Yet, the availability and the prevalence literacy is a significant factor of sociocultural development. In contemporary world education, professional knowledge, and skills of the population are more valid counterparts, for they define the prevalence of efficient social properties of population of society. Moreover, the prevalence in the knowledge of the languages of the societies that are interaction partners (especially cultural hegemony) can be advantageous. Therefore, there are grounds to claim that with relation to the culture of society the following criteria of intersocietal stratification are relevant: (5.1) *symbol systems*, (5.2) *technologies*, and (5.3) *ideologies*. *The degree of prevalence of adaptive symbol systems* in society is reasonable to be considered as the measurement of intersocietal selection by symbol systems. *The degree of prevalence of efficient technologies* in society can be the measurement of intersocietal stratification by technologies. Finally, *the degree of prevalence of integrative ideology* in society can be the measurement of intersocietal stratification by ideologies.

The previous contemplations provide grounds to pose a hypothesis that *social stratification* plays a significant role in intersocietal selection. A more differentiated by division of labor society will probably be a more productive and thus a more successful society (higher differentiation proved to be an adaptive advantage in the process of sociocultural evolution). Alongside with the increase in social differentiation, there comes an inevitable increase in social stratification. Moreover, there is a demand for optimum, as long as a certain amount of inequality is necessary for the functioning of complex social systems, but an unreasonably high inequality is a source of tension between social strata and classes, all of which may endanger a society's integrity. Thereby, the crucial criteria of intersocietal selection by attributes of social structure are: (6.1) *social differentiation* and (6.2) *social stratification*. *The degree of social differentiation optimality* and *the degree social stratification optimality* are the respective logical measurements of intersocietal selection. The puzzle of optimization of social differentiation and social stratification is theoretically unsolved. In practice, it is solved *ad hoc* via self-organization process and by government policies, so it remains to be a topical social issue.

Among institutional systems, the least important with relation to intersocietal selection are the attributes of *kinship* subsystem. Leastwise, no articulate relevant statements have been found in the literature reviewed. Presumably, the kinship subsystem played an important role in hunting and gathering societies. However, it is not the case in modern societies, which are predominantly industrial, agrarian, or mixed agrarian-industrial ones.

If we take into account the importance of economy for functioning of society, highlighted, for example, by Olsen (1991) and Sanderson (1999), it is logical to assume that *the economic*

subsystem of society plays a significant role in the process of intersocietal selection. The main objectives of economy are production, exchange, and distribution of goods and services (to be concise, it is appropriate to unite the latter into one category of general systemic notion of distribution). Therefore, the criteria of stratification in this dimension are the following: (7.1) *the production* of goods and services and (7.2) *the distribution* of goods and services in society. *The amount and intensity of production*, as well as *the degree of effectiveness of distribution* of goods and services in society can be used as measurements of intersocietal stratification.

On the basis empirical data Lenski claimed that in the industrial era (which by ecological-evolutionary theory lasts by now) for the first time in history ideology became the second influential factor of difference between societies (it overweighed the influence of the biophysical external environment) (2005, p. 122). From the context it becomes clear that this cause is not so much ideology as a system of beliefs, but as a system of real political relations – polity. It is obvious that some governments can govern societies and solve societal issues more efficiently than others. On these grounds, it is adequate to consider society's *polity* as one of aspects of stratification of societies. Internal political struggle, lack of legitimacy, and problems with consensus about rules of functioning and certain policies in society can weaken a state and lead to collapse. Therefore, for the analysis of intersocietal stratification these aspects of functioning of polity should be taken into account. Considering the abovementioned rationale, the criteria of such stratification can be: (8.1) *the division of power*, (8.2) *the adoption of rules and decisions*, and (8.3) *the exercise of power* in society. *The efficiency* of mechanisms of *division of power*, *the efficiency of adoption of rules and decisions* concerning functioning of society as a whole, and *the efficiency* of exercise of *authority*, should be selected as the respective measurements of intersocietal selection.

Since each religion is an end in itself, at first glance it looks unlikely that *the religion* subsystem can cause intersocietal stratification. Yet, the high degree of social solidarity inherent in societies with dominance of one religion contrasts sharply with interconfessional conflicts in societies with several religions having numerous believers. Moreover, religion can consolidate and inspire population in case of external warfare. Therefore, it is relevant to view (9.1) *the religious homogeneity* and (9.2) *the religiosity* of population of society as the criteria of intersocietal stratification. The respective measurements of stratification can be *the degree of religious homogeneity* and *the degree of religiosity* of population of society.

Social capital may be a personal or a social resource, and this is true on societal level as well. From such perspective, *the education* subsystem is an important cause of the creation and reproduction of society. In addition to the educational level of population, it is necessary to consider the structure of education as a system of organizations: whether it is flexible and adequate to meet societal needs or not (that is, generally adaptive or not). Thereby, the important criteria of intersocietal stratification by education are: (10.1) *educational level* and (10.2) *educational system*. The respective measurements of intersocietal stratification can be *the educational level* of population of society and *the degree of efficiency of education* in society.

Thereby, as a result of the analysis of different aspects of intersocietal stratification, attributes of external environment, components, and structure of society it should be concluded that from the ecological-evolutionary perspective it is theoretically justified and substantially reasoned to discriminate ten aspects and twenty-five criteria of intersocietal stratification. For each criterion a corresponding measurement of stratification was developed. Such multidimensional system of stratification does not reflect all possible aspects of such stratification, but decently represents the principal criteria of intersocietal stratification in relation to intersocietal selection. The least clarified but hypothetically important connections between the illuminated aspects and criteria are worth further research inquiry. In addition, the objectives of future mathematical modeling require the elaboration of more specific indicators of stratification of societies. The measurements of intersocietal selection on the intersection of the defined measurements are the least analyzed and the most perspective for successive research.

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Notes

ⁱ *Society* is defined here as a self-governed social system consisting of humans, means of subsistence of humans and all relations among them. *Self-governed social system* is conceptualized as a social system, which is arranged by information influences of a governing subsystem. The existence of a state serves as the indicator of self-government of a social system. *State* is defined as a governing subsystem of society performing normative regulation of society as a totality.

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- ⁱⁱ Makeyev views *social stratification* as a result of social division of elements of social structure into strata. He defines it as a “hierarchal vertical allocation of members of society according to the degree of possession and dispossession of certain goods” (1998, p. 606).
- ⁱⁱⁱ From a macrosociological viewpoint intersocietal selection can be defined as “the process of selection, whereby some societies survive, while others become extinct” (Lenski, Nolan, & Lenski, 1995, p. 461).
- ^{iv} Ideology is defined here as the “cultural information used to interpret human experience and order societal life” (Lenski, Nolan, & Lenski, 1995, p. 460). According to such wide definition, ideology includes societal beliefs, norms, and values.
- ^v Technology, in turn, is defined as the “cultural information about the ways in which the material resources of the environment may be used to satisfy human needs and desires” (Lenski, Nolan, & Lenski, 1995, p. 464).
- ^{vi} In ecological-evolutionary theory, social organization is identified as the “network of relationships among the members of a society or group” (Lenski, Nolan, & Lenski, 1995, p. 463). In fact, herein social organization is understood as social structure in a narrow sense – exclusively as a system of relations, without beliefs, norms, and values, which are attributed to culture instead.
- ^{vii} The distinction between institutions and institutional systems is a productive solution, as it provides a possibility to examine, for example, political system as a whole, and, if necessary, analyze its constituents (political institutions). In this theory institutional systems are considered as the systems of interconnected institutions, while social institutions – as the systems of social relationships and cultural elements that develop in a society in response to some set of basic and persistent needs (Lenski, Nolan, & Lenski, 1995, p. 461).