

# Gella, Aleksander

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[Being moved by Professor Zvorykine's opinion...]

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Artykuł umieszczony jest w kolekcji cyfrowej Bazhum, gromadzącej zawartość polskich czasopism humanistycznych i społecznych tworzonej przez Muzeum Historii Polski w ramach prac podejmowanych na rzecz zapewnienia otwartego, powszechnego i trwałego dostępu do polskiego dorobku naukowego i kulturalnego.

Artykuł został zdigitalizowany i opracowany do udostępnienia w internecie ze środków specjalnych MNiSW dzięki Wydziałowi Historycznemu Uniwersytetu Warszawskiego.

Tekst jest udostępniony do wykorzystania w ramach dozwolonego użytku.



may be considered to be the ultimate causal explanation of science as well as of the remaining aspects of civilization. Put briefly, and in Marxist language, we need to establish the base and the superstructure. But the empirical evidence which is relevant to history of science leaves open, thus far, what is the character of the base<sup>1</sup>.

We recognize then three stages in the social influencing of scientific ideas. First, there is the social origin of the problem which is attacked, perhaps a direct stimulus, perhaps indirect or even remote. This first stage includes the question of realization: social practice may be negative as well as positive. Society may isolate and crucially inhibit the development of science by failure to put scientific and technological achievements to use.

Second, the social sources of the techniques and concepts which are brought to bear upon the problem. Third, the philosophical principle of verification, which the given stage of culture provides to distinguish nonsense from meaningfulness and what is found to be false from what is found to be true or merely probable. At every stage of development, scientists work and think within the given environment. This is personal and biographical but it is also social. Only by personal and social self-criticism can scientists transcend the limitations of their socio-centric predicament, and indeed such transcending of the historically relative position of knowledge is a path toward greater objectivity.

The third stage of social influence upon scientific knowledge, the historical career of the conceptions of meaning and truth, deserves careful investigation by historians and sociologists as well as by philosophers. Indeed, the sociology of epistemology would be a fruitful meeting ground for research by philosophers of science and historians of science. Science has been constricted by epistemological requirements just as thoroughly as it has been distorted by social determination of ideas and impoverished by social determination of problems.

It is a fair hope that these questions are also of considerable practical interest. It may be possible to free our own times of some present bounds upon thought and human powers by cultivation of historical and psychological research in the sociology of science.

### A. Gella

Being moved by Professor Zvorykine's opinion on technological determinism, which is now often conceded by many Western thinkers, usually under the impression of present successes of cybernetics, I would

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<sup>1</sup> See, for example, the careful summary of the several factors which may be responsible for the scientific revolution of the XVIIth century in Western Europe in the third volume, section 19k, of Joseph Needham's *Science and Civilization in China*.

like to give some remarks on the relation of the social sciences to the exact sciences in the field of the history of science.

I would like to point out an important difference between the development of exact sciences and so-called social sciences. Natural and exact sciences are very much more independent from the burdens and features of the civilization and culture on which soil they grow, than social sciences. Conversely, social sciences are more responsive in relation to the social and political substratum. The progress of exact and natural sciences has an autogeneuous character. This difference seems to be very important for the history of science as a whole. Searching the development of exact sciences, we can investigate the sequences of their autogeneuous growth, point after point, without regard to its social environment.

We can give an interpretation of the development of mathematics or physics taking into account only their theories, hypotheses and errors. Even errors, as in this field errors are never repeated. I do not like to tell that the stories of social conditions in which exact sciences were developed are meaningless for the progress of these disciplines. I would like to emphasize only, that the main problems of their development are limited to the chain of sequences: hypothesis, theory, verification, falsification, and again, and so on. We can see social conditions of exact sciences only in very large frames. We can tell that one civilization creates better conditions for the development of exact sciences and another — worse, or that certain types of culture encourage the development of sciences in a definite direction.

On the contrary, the impact of social conditions on the growth and decline, on the character and direction of social sciences is huge and permanent. What does it mean that social sciences are responsive in relation to the social and political substratum? Social sciences are ruled and directed by the social, economical and above all political circumstances of their time. "Each age writes the history of the past anew with references to the conditions uppermost in its own time" — wrote a famous American historian F. J. Turner.

Similar is the situation in sociology and in economics. According to the changes in social structure, system of production, ideologic and political relations of the country, we can observe the changes in social sciences. The history of social sciences has a rich collection of examples to verify this statement. To be fair, I must mention that for the first time I have met this differentiation between "autogeneuous" and "responsive" sciences in an unpublished article of Professor Lewis Feuer from California University in Berkeley. Later I have developed and exemplified the thesis on the materials of two cases. First, in an article where I have tried to show how the American sociology is stimulated and limited by the pragmatic features of the American society; second — in a paper

on the history and social role of the Frederick J. Turner's *Frontier Hypothesis*, which interestingly fluctuated up and down during 70 years of its life.

One more example: in the last decades of the XIXth century L. Gumplowicz created his system of sociology. At the same time and under his strong influence worked Lester Frank Ward living in the U.S.A. Both authors were under strong influence of the same intellectual movement of the age — evolutionism. Despite of all, they created two deeply different systems. Gumplowicz's system was extremely pessimistic, Ward's system was extremely optimistic. But Gumplowicz spent his life in the Austro-Hungarian monarchy where many hopeless conflicts of ethnical groups dominated social and political life. Ward lived in the country of the largest perspectives of the social and economic advance.

Drawing conclusions from my examples, I would like to stress, that we cannot investigate the historical problems of exact sciences in the same way as those of social sciences. A historian of sciences working on the general problems of the history of sciences, has to remember about these two different characters of the development of scientific disciplines: more autogeneous in exact and natural sciences on the one hand, and more responsive in social sciences on the other.

En outre ont pris la parole mais n'ont pas envoyé leurs contributions:  
*M. Daumas, B. M. Kedrov, A. A. Zvorykine.*