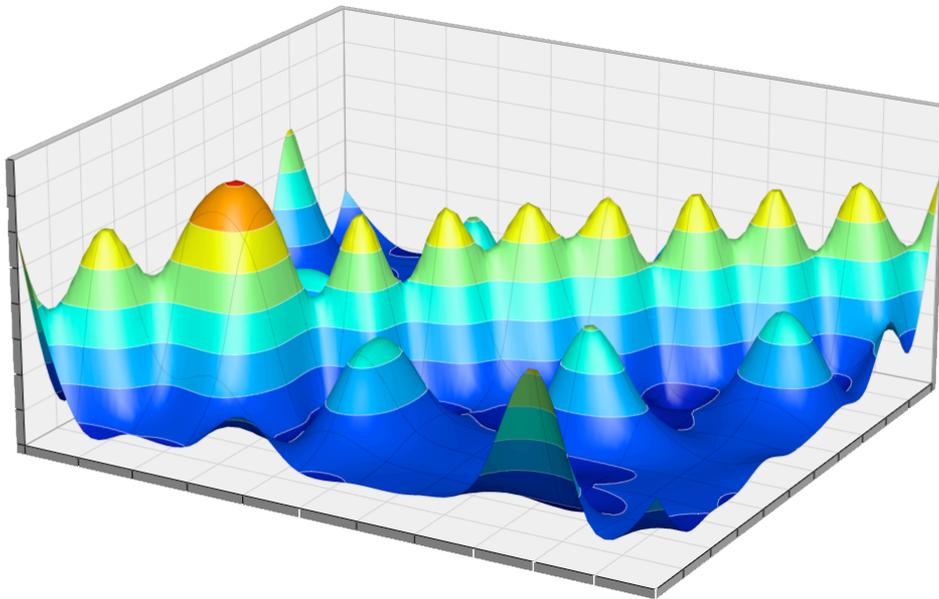


GLOBE EXPERT

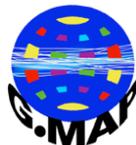
**AN OBJECTIFYING INTERFACE BETWEEN
HARD SCIENCE AND SOCIAL SCIENCE**



**TO RECONSIDER
THE STUDY OF INTERNATIONAL RELATIONS**

Renaud Barbat and Alexandre Dagiste

Researchers at GMAP





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Since the end of the Cold war and the collapse of the USSR, many phenomena have to be taken into account. First is the multiplication of players of various kinds, sometimes referred as “transnational” because they are not restricted by States’ boundaries - non-governmental organisations, financial players, international organisations as well as criminal players such as “mafias”, etc. Second, interrelations between these different types of protagonists keep on growing and, as such, these relations become more and more complex, thus harder to model and comprehend. The third phenomenon lays in the intertwining of different fields together - economics, social, politics, environmental, finance, etc - intertwining that reinforces the notion of globalisation. With the artificial intelligent technology Globe Expert, the latter concept implies the necessity to tackle political events and major mutations of the 21st century in a global way, mixing both local and regional scales analyses and also economic, social and political ones. In so doing, Globe Expert uses transversality and multidisciplinary as tools of a global approach, represented by concepts such as fuzzy logic, entropy, or neuronal/behavioural models, all coming from mathematics, biology and many more fields.

A GLOBAL AND SYSTEMIC VIEW OF INFORMATION

Globe Expert offers a wide range of forward looking functionalities that help to comprehend information in an innovative way, meaning in a systemic vision and no more a fragmented one. The first type of functionalities handled by Globe Expert is about news analysis. By mapping characteristics of the information available on the Web thanks to various tools, Globe Expert enables to distance oneself from this information. This instantaneous step back liberates from usual constraints - apparent overwhelming information, use of only western or national media, or media with the same political obedience - and supplies with a broader, more objective and global spectrum of analysis. The step is taken: one is no longer subjected to information, but one controls it.

As Globe Expert references data collected among 2000 international sources, people wishing to take a fresh look at the news can find whatever they want thanks to these functionalities. Latest results show that the association between human knowledge in international relations and a massive objectifying analysis produced by a sophisticated and

performing computer device is consistently successful. The GMAP think tank thus launched its first studies around the “Biosphere and Society” theme, focused on “contentious factors of the energy transition” and the “financialization of vital resources”. Therefore, they try to implement the “*new way to look at the facts*” that Teilhard de Chardin advocated during his trip to South Africa in 1951 for the Wenner-Gren Foundation.

Furthermore, Globe Expert turns out to be especially attractive for scholars working on information itself: its casting, circulation, life expectancy, and cohabitation with other signals... Nowadays, information sources - more individualised, with the Internet 2.0 - and media - phones, tablets, etc - are soaring. Information as a research subject is doubtlessly going to increase in the coming years to understand the last behaviours regarding it.

THE APPLICABILITY OF MATHEMATICAL MODELS IN INTERNATIONAL RELATIONS

The second type of functionalities, grouped under the “Synthesis and Prospective” theme, give a better account of relations - of proximity, influence or domination - between the different players and ask in a broader perspective the question of the place for tools and concepts coming from hard science in a social science study. Indeed, the “Prospective” functionality turns out to be really innovative. The user easily defines the behaviour of the information by setting up parameters according to what he thinks to be more realistic. This setting is carried out around five variables: one for the time - choose the time horizon of the projection - and the other four concern the attitude of the information.

By giving pieces of information « human » behaviours, transcribed in mathematical terms, Globe Expert manages to simulate possible futures. Let’s underline here the fact that the objective of such a prospective approach is not to define what will be, but rather what can be, in highlighting possible general explanatory trends that can provide a better understanding of phenomena.

In practical terms, after the user picks up precise criteria in the beginning of the process, Globe Expert then gets a result that comes from the simulation of the previously defined behaviours. As a consequence, hard science is included at two different levels in this process of simulating attitudes. The first level stands in the use of recognized mathematical knowledge to express different types of human behaviours: biological or neuronal. The second level concerns the computer programming that enables Globe Expert to associate this mathematical information with the selected options. This basis in hard science confers Globe Expert a maximal accuracy and objectivity.

General and partial theories in economics can be expressed in mathematical formulas. Sociology succeeded too, on a smaller scale, to integrate hard science, especially in having recourse to statistics. Here international relations can contemplate a reactivation of the 1960s behaviouralist ambition that enunciated the opportunity to use computer science in their field while this science was just at its dawn. Their approach was praiseworthy and

simple: “ *They suggest to replace the classical ‘intuitive’ assertions [...] by rigorous and systematic concepts and reasoning, and promote formalisation and quantification that both are made easier by the invention of the computer*” (BATTISTELLA D., *Théories des relations internationales*, France, Sciences Po Les presses, 2nd edition, 2006, 588 pages, p.92).

Globe Expert, in a completely different technological context, makes the most of these opportunities and introduces more scientism and a more objectifying approach in social science and political science. Although a purely positivist formalisation of a theory in such fields is hardly possible because of the nature itself of these research subjects, the use of computer science, of which developments are crucial nowadays, would help to go into the knowledge in greater depth and also redefine and rethink the traditional frames of observation and of learning this knowledge.

By now, what are the available tools that help to comprehend, understand and explain the major changes of the 21st century? How can multidisciplinary and transversality get an acknowledged status in the international relations topics? These latter concepts ask the question of the applicability of hard science modelling in social science as a whole and especially in international relations. The question of applicability - meaning our ability to understand concepts and patterns coming from various fields and transpose and use them in our own research studies - is indeed decisive in every approach aiming at being multidisciplinary and transverse. “*The multiplicity of endeavour aiming, thanks to various tools, at trying to understand the nature and signification of the world’s transformations - and what it could be in ten or twenty years - is in many ways corollary to the conscience we have: a limited understanding (...) of the issues to deal with (...). More often than not, we don’t have the tools enabling us to understand [the complexity of the world]. A change in paradigm has become compulsory*” (Report of the Centre for Applied Studies in International relations, November 2005, by Jean F. FREYMOND, « *La Genève internationale de demain - Priorités dans un monde qui change* », 40 pages, p.14).

René Thom’s work on his catastrophe theory and Benoît Mandelbrot’s research on fractal geometry show that the questions of multidisciplinary and transversality are not new, but they have always raised the problem of applicability of such mathematical modelling in the field of international relations. At this point, Globe Expert can be considered as the interface that was missing until now between these disciplines, since it enables to easily apply, and in an intuitive way, concepts coming from hard science in fields related to society. Of course, technological advances in modelling phenomena and in drawing “prospective” about the major contemporary issues put questions to the relation between human and machine. On the one hand, will humans be able to accept and comprehend this fresh look upon society? On the other hand, if we assume that “*individuals are the players of a history of which the course is uncertain*”, will the machine, as an artificial intelligence, be able to model the complexity of human phenomena and behaviours? Eventually, the point is not in knowing whether science and technology improve or not, but rather in knowing if humans are able of comprehending this scientific advances and what they can get from it.