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Under the Sign of Boole[1]

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Abstract: The note presents some personal thoughts on Professor S. Rudeanu's scientific and human personality.
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The main monographs and most articles published by Professor Sergiu Rudeanu refer in their title to the name of George Boole, the bold mathematician who tried and partially succeeded to unify four territories of the human intelligence: thought, logic, language and algebra. Thought is modeled by set-theoretic operations, logic refers to propositional logic, language means here the human language (mainly the natural one). What about algebra? Boole realized that the price to be paid in order to obtain an algebraic unification of thought, logic and language is to reduce algebra to its binary case; so, the attribute "Boolean" is almost equivalent to "binary".

The most difficult corner of the square thought-logic-language-algebra is "language". If set theory, propositional logic, and Boolean algebra are mathematical fields, human language is impregnated with empirical elements and all its mathematical models remain very controversial. For instance, the task to bridge the gap between linguistic and logical conjunction, between linguistic and logical disjunction still remains a component of a project of high complexity, concerning the mathematics of language (and, more generally, of life phenomena). This project includes also various types of non-classical logics, particularly, of various extensions of Boolean ideas. Rudeanu, in some joint works with Professor P. L. Hammer, introduced, in this respect, the pseudo-Boolean approach. His further important contributions, related to Lukasiewicz-Moisil algebras, show that Professor Rudeanu's fidelity to Boole is not incompatible with his capacity to transgress the Boolean mentality.

Moving now from Professor Rudeanu's scientific work to Professor Rudeanu's human personality, we may observe that he always knew when his behavior should be Boolean and when not. Balkan mentality is renowned as being rather fuzzy, non-Boolean and even anti-Boolean. It is not the case of Professor

[1] C. S. Calude and G. Ştefănescu (eds.). *Automata, Logic, and Computability. Special issue dedicated to Professor Sergiu Rudeanu Festschrift.*

Rudeanu. In his use of logic and language, in the every day life, and, especially, in the university life, Rudeanu follows strong requirements, applied to himself before to be applied to his colleagues and to his students. Those who don't understand him, those who cannot accommodate to his style, those many who are inclined to accept all kind of compromises, consider Professor Rudeanu as a stubborn person and try sometimes to avoid him. But those – and there are many – who have succeeded to penetrate into his philosophy of life, in his way of thinking and tried to understand them, realize the whole coherence of his behavior.

It is a real pleasure to talk with Rudeanu, to listen to his remarks concerning people, habits, culture, art, language, various concepts and theorems, everyday life, university life and scientific life. Each time he throws a fresh look around him, he detects some paradoxical aspects of various situations, including his own field of research and the relations with his students. As his partner in dialogue, I was impressed by his capacity to enjoy to contemplate the world, people, and mathematical life. He gets nervous only when he is obliged to spend his time with uninteresting things; otherwise, he is never bored with his job. On the contrary, he is always deeply involved in his work and has a feeling of lack of time. If he has to give a critical opinion on some mathematical work, you may have to wait some time, but you can be sure that this opinion is based on a very careful examination. Professor Sergiu Rudeanu is unique in many respects. This fact may give him sometimes a feeling of loneless. But I am sure that his friends and admirers are a lot. We need him so much!