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Preface

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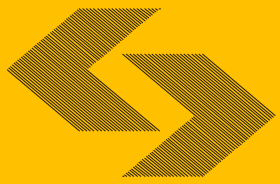

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Decision making is about selecting an alternative from a set of alternatives. In the current stream of research, in the field of conscious (as opposed to subconscious or automatic) decision making, one can trace two dominant currents. The first one is concerned with attempts to understand and describe how people make decisions. The second, taking as a paradigm that decision are made *somehow*, is concerned with proposing various formal tools to manage the complexity of the decision making process and, specifically, to assist the decision maker in the task of selecting an alternative. The collection of papers presented in this issue of *Control & Cybernetics* belongs, with no exception, to the latter current. Moreover, all of them address multiple criteria problems.

When proposing a formal tool to support decision making, the key issue is how to capture decisional environment into a formal model. There is no general consensus on how this should be done. A fundamental split among research community results from the question whether formal models should be built with data and/or rules assumed to be precise or imprecise. A consequence of this is a further split into a *crisp* approach and a *fuzzy* (or *rough*) approach. As they develop, those two approaches had a tendency to diverge but after reaching a point of maturity this tendency seemed to revert. It has been observed then in various publications that both approaches are more than often complementary and not mutually exclusive. Depending on the decisional environment context, one approach can dominate over another but no general dominance rule seems to hold. The collection of papers contained in this issue represents both approaches and, as we believe, is a modest attempt to sustain their re-convergence.

This collection of papers is a selective harvest of works on multiple criteria decision making presented at the BOS'2002 conference held in September 2002 in Warsaw. From all nine papers, papers by S. Chanas and D. Kuchta (paper No. 1), J. Kacprzyk and S. Zadrożny (paper No. 5), E. Szmidt and J. Kacprzyk (paper No. 9), represent the fuzzy approach, whereas papers by I. Kaliszewski (paper No. 4), A.B. Malinowska (paper No. 6), W. Ogryczak (paper No. 7), represent the crisp approach. Papers by K. Dembczyński, S. Greco and R. Słowiński (paper No. 2), S. Greco, B. Prędki and R. Słowiński (paper No. 3), R. Słowiński, S. Greco and B. Matarazzo (paper No. 8), document what can be regarded as convergence of these two approaches—they propose how to solve problems with crisp data using rough sets based rules.

Though this issue of *Control & Cybernetics* falls short, and in fact never been intended, to give a representative glimpse on multiple criteria decision making research in Poland around 2002, a representative flavour of activities in this area is conveyed.

Warsaw, January 2003 Ignacy Kaliszewski, Guest Editor