COMPLEXITY IN INTERNATIONAL SECURITY

COMPLEXITY IN INTERNATIONAL SECURITY: A HOLISTIC SPATIAL APPROACH

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INVESTOR IN PEOPLE

To my beloved wife Lilia as the chief inspiration and security during this and previous book's writing.

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About the Author

Peter Simon Sapaty, Chief Research Scientist at the Ukrainian Academy of Sciences, has been researching networked systems for five decades. Outside of Ukraine, he has worked in former Czechoslovakia (now the Slovak Republic), Germany, the UK, Canada and Japan as a Group Leader, Alexander von Humboldt Researcher, and invited and Visiting Professor. He launched and chaired the SIG on Mobile Cooperative Technologies in Distributed Interactive Simulation project in the US, and he invented a distributed control technology that resulted in a European patent. Dr Sapaty has published several books and over 200 papers, and he has worked with several international scientific journals, including in the role of Editor-in-Chief.

Preface

The current book reflects our decades of dealing with large distributed networked systems, with the gained practical and theoretical experience allowing for their effective seeing, comprehending and impacting as a whole, from above rather than inside, with capabilities for the latter too. And this experience appeared to be close to the gestalt psychology and theory highlighting the unique quality of human (and may not only) brain to directly grasp the wholeness of different phenomena while treating parts, which may not be complete, in the context of this whole, rather than vice versa.

We have strengthened this holistic vision by a special, constantly evolving, distributed programming model and technology, operating not so inside system components but rather above and between them. This resulted in a possibility of extrapolating holistic qualities of a concentrated brain to dynamic distributed systems while providing their integral goal-driven management and behaviour in real-time and often ahead of it. The current, fifth, book on this paradigm and resultant networking technology is examining the application of the accumulated experience to analysis and management of national and international security problems, especially those caused by the world's growing human and environmental dynamics and unpredictability in the twenty-first century.

These security problems may be massive, distributed and spatial in nature, potentially appearing any time in any world points, simultaneously covering large territories, also involving different cultures, religions, traditions and legislation. They can be caused by complex patterns of international relations, may need continuous monitoring of world dynamics with numerous moving objects, whether technical or human, in terrestrial and celestial spaces. The existing security bodies, with often outdated world information collected in a centralized way, also capable of becoming dysfunctional, may even happen to represent part of the security problems rather than their solutions. We will be addressing many such security problems while offering exemplary solutions based on the spatial grasp technology (SGT) described in the current and previous books.

The growing world dynamics and international instability and insecurity inspired the urgent search for radically new models guaranteeing not only prosperity and safety but even survivability in rapidly changing environments, with the use of all available, scattered, casual, even not perfect resources, which should work together as one system. And, this is just in line with the ideology and methodology of SGT being developed for the last decades and in different countries. Another related example is the latest DARPA Mosaic Warfare concept, discussed as a special chapter in this book, which may have an important influence on global security too.

Peter Simon Sapaty

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