Chapter 2
Scientific Intelligence, Decision Making, and Cyber-Security

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ABSTRACT

Because of the huge amount of data and information in the decision-making and strategic choices processes, basing decisions on information directly collected from the sources is not conceivable. A decision-making analyst becomes a fundamental pillar in both the corporate field and the institutional world. This role is becoming increasingly complex and specialized, critical within the cycle of the intelligence analysis, for the relationships that bind it to the other stakeholders, and for the methodological and technological tools that support it. The purpose of this chapter is to explore the milestones of the intelligence analysis deriving from a close collaboration between social sciences, cognitive science, computer engineering, and ICT in order to respond to the different needs in the field of risk management, safety, investigations, and applied intelligence.
INTRODUCTION

The Context

Governments as well as business organizations constantly make decisions under conditions of uncertainty. In the realm of security and foreign policy this poses a strong challenge. In order to increase the efficiency of policy-making, governments usually create dedicated entities for these tasks. These could be in-house research departments, automatic data collection systems or traditional intelligence agencies.

The States with advanced Intelligence organizations can be assumed to be more influential than states that lack this resource. Sometimes conflicts throughout history have been fuelled or even instigated by misconceptions and faulty evidence. That shows how much this resource can be crucial to guarantee a global sureness and stability (Fägersten, 2015).

In the actual globalized world, the safety finds its place in the natural/engineering sciences and medicine. The similar concept, security, is a key concept for social scientists (see figure 1): it refers to the prevention of intentional threats that may harm human beings, their possessions or ‘acquired values’.

Most of the States of the world have placed the need to adapt the instruments for the protection of their global security, both internally and internationally, using ever more consistently, given the nature of the threat, incisive information research modality, necessary to guide choices and prevent risks.

Security efforts are targeted at different levels (Berg & Boss, 2014):

- **National security** at the level of states
- **Human security** at a sub-state level of individuals (Hampson, 2008)
- **Societal security** at a sub-state level of groups (Buzan et a. (1998)
- **World security** at the supra-state level of regions or even the entire globe (Booth, 2007)

The meaning of the national security concept varies according to the individual states and the changing of historical contexts.

This concept maintains its stability over time in countries of consolidated democratic tradition, with strong social cohesion, characterized by an intense sense of belonging of citizens to the institutions, to draw characteristics and boundaries. On the opposite, there are those situations in which conflicts emerge between legitimate powers, vulnerability, as well as historical conditions of separation between citizens and the political establishment.
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