



Chinese Cybersecurity and Defense

Edited by Daniel Ventre

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Chinese Cybersecurity and Defense

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Cyber Conflicts, Competing National Perspectives, ISTE, London and John Wiley & Sons, New York, May 2012, 330 pages.

Cyberwar and Information Warfare, ISTE, London and John Wiley & Sons, New York, July 2011, 448 pages.

Cyberattaque et Cyberdéfense, Paris, Editions Hermès Lavoisier, Collection “Cybercriminalité et Cyberconflits”, August 2011, 312 pages.

Cyberespace et acteurs du cyberconflit, Paris, Hermès Lavoisier, Collection “Cybercriminalité et Cyberconflits”, April 2011, 288 pages.

Cyberguerre et guerre de l'information. Stratégies, règles, enjeux, Paris, Hermès Lavoisier, Collection “Cybercriminalité et Cyberconflits”, September 2010, 318 pages.

Information Warfare, ISTE, London and John Wiley & Sons, New York, 2009, 298 pages.

La guerre de l'information, Paris, Hermès Lavoisier, Collection “Finance Gestion Management”, 2007.

Introduction

Regardless of the origins of cyberspace (those who designed it, the founding fathers of computing, of telecoms, of the Internet, the first to give financial backing to these projects, etc.), what is important to look at in today's world is the current configuration of cyberspace, and its possible future. Whilst a map of the under-sea cable networks shows the Internet as being rather US-centered, or at least organized around the triad of the USA, Europe and Asia, with the other regions of the world appearing to lie on the periphery, this centrality of infrastructures (root name servers, computation capacities, data flux, etc.), but also of investment, research, users, etc., is in the full throes of evolution. Technology and knowledge are now being disseminated throughout the world. Where it is impossible to install hardwired technologies quickly enough, mobile telephony is becoming an important means of access to the Internet. Poorer populations are beginning to gain access to a Web connection. Thus, modern technologies are able to make their effects felt even in territories where they are not as omnipresent as in the United States. The technology is becoming more widely available, and we can see that the barriers to development are not economic or technical, but often political: the development of cyberspace, and the form

that it takes, are subject to the will of the political authorities.

Whilst the United States still seem, at present, to be the dominant force in terms of the Internet and cyberspace, the more widely the technology propagates, the less the number of users is concentrated in the Western World. This evolution of cyberspace is contributing to the current shift of power (economic, political and strategic power) from America toward Asia. The report “The World in 2025”¹ affirms (and it is not alone in doing so) that “the centre of gravity of world production will move towards Asia [...] Before 2025 China could become the second world economic power”. This shift is not solely economic. It runs deeper, corresponding to the shifting of the very foundations of the power of modern nations: “*Before 2025 China could become the second world economic power [...] India and China could thus account for approximately 20% of the world’s R&D*”. The configuration of cyberspace is constantly changing as well. There is no truly stable balance. The same report highlights the effects this evolution will inevitably have: “*If the United States remain the first military power, the scientific and technological catching-up of some states, the new irregular war tactics and the increasing importance of cyber-attacks will weaken their freedom of action*”.

Although, evidently, the domination of cyberspace (particularly in economic, political and military terms) depends on more factors than simply the number of users in a state (there are other variables determining the power balance in cyberspace: political goals, industrial expertise, capital, knowledge, data, infrastructure, the capacity to impose a strategy on all three levels of cyberspace), the evolution of uses and populations of users represents a major phenomenon,

1 European Commission, *The World in 2025. Rising Asia and Socio-Ecological Transition*, Brussels, 2009, 28 pages, [http://ec.europa.eu/research/social-sciences/pdf/the-world-in-2025-report_en.pdf].

because it also reflects the changing desires, political, economic and ideological projects. This evolution reflects, or perhaps heralds, a gradual transfer of power from one center (the United States) to another (China). China is, without a doubt, the major player in this reconfiguration. The stakes are enormously high, because if, tomorrow, the 1.5 billion Chinese were all to have access to the Internet, the configuration of China's cyberspace itself and of the world as a whole, would be turned on its head. In cyberspace, Asia is becoming the most important resource in terms of users, consumers, citizens, but also (potentially at least) of creators, designers, although innovation in these domains appears, as yet, to be concentrated in Silicon Valley and in Israel (notably in the domain of cybersecurity). The center of innovation, in the field of ICTs, could, in time, be shifted from America, with its giants of industry and research, to Asia. Even at this stage, China has already developed its own solutions – alternatives to the tools employed in the West (Facebook, Twitter, operating systems, etc.), and its industrial players (e.g. Huawei and Lenovo) are in the process of dethroning the historical international market leaders. By exporting its technologies, and investing in the development of infrastructure in developing countries, China is also creating the conditions for future dependency on its technologies. No doubt China will also be able to invest wisely in technologies with a promising future – e.g. those which will feed into the up-and-coming “Internet of Things” – firstly because of its immense national market, but also because engineers, who are already digital natives, constitute a potential creative resource. In addition, a billion or more Chinese citizens in cyberspace also represent phenomenal quantities of data produced. It is a crucial focal point for authorities, companies and even states to be able to cope with these amounts of data. The capacities to innovate, invest and deploy one's technologies throughout the world constitute as many variables of importance for the power of modern states. Asia, and particularly China, intends to play the leading roles in these domains.

When thinking about the issues of cyberspace, its influence on the quality of international relations and on the evolution of the world, and looking at the importance of cyber strategies for national and international equilibria, China is naturally at the center of the debate. The questions are numerous: what are the variables affecting Chinese power? What is China's ambition – what role does it hope to play on the international stage? In what ways can its society and its political regime evolve? How does cyberspace fit in with these issues of both internal and international politics? What will be the consequences of the evolution of cyberspace and of its use, for Chinese society, for other countries in the region, and for the rest of the world? Are the proposals formulated and the initiatives taken by China in terms of governance of the Internet able to reshape the interconnection of the world such as it is imagined and defined by the West? The evolution of cyberspace, with the central role that China now plays and will continue to play for a long time to come, is now a matter of security and national defense. Cybersecurity and cyberdefense are political and strategic issues of prime importance. Practices, intentions and projects in this field have a direct influence on international relations. New actors, new forms of relations between states, new powers, conflicts and power distributions are taking shape throughout cyberspace.

The aim of this book is to analyze China's policies, strategies and practices in the area of cybersecurity and cyberdefense; and also to analyze the effect they have on the political and strategic choices made by other states. Contributions to this work have come from seven researchers, specializing in international relations and issues of cybersecurity. The individual chapters are drawn from a conference which took place in Paris, on 1 July 2013, organized by the *Chair of Cyberdefense and Cybersecurity* (Saint-Cyr / Sogeti / Thales).

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