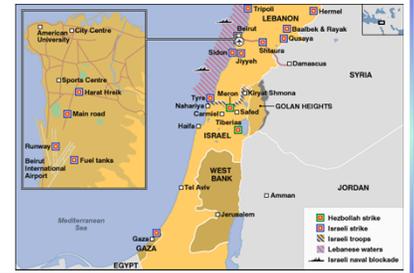




Asymmetric Cyber-warfare between Israel and Hezbollah The Web as a new strategic battlefield



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An interdisciplinary and contextualized research

In July 2006, the Israeli army (IDF) and the armed forces of the Lebanese Shiite party, Hezbollah, confronted in a 34 days long conflict.

Classical means of action were used from both sides in this officially called "July War", but a new form of confrontation also played a major role: **Web Cyber-warfare**. Cyber-warfare is a series of techniques designed to acquire data and knowledge, and deprive the opponent of it, in a strategic purpose. In its military meaning, it covers the "actions by a nation-State to penetrate another nation's computer networks for the purpose of causing damage or disruption". Internet based information and communication systems are central in today's war strategies and Web interfaces are now widely used by military and intelligence institutions.

This research, presented by International Relations & Diplomacy students, looks at how Cyber-warfare actions were carried out on the Web in 2006 and focuses on the main characteristics of asymmetric military strategy using the Web as a target or a weapon.

Web Science and Diplomacy: Shared Methods

Web Science is about creating new methodologies to understand the impact of the Web and this study follows the proposals made for contextualized interdisciplinary analysis. The study aims at:

- deciphering the strategic objectives that this new type of warfare can bring to the theatre of operations
- analyzing the strategic dimensions of Cyber-attacks on the Web and the role of the different actors, civilians and institutions.
- creating a typology of available choices in Cyber-attacks on the Web in this particular context
- emphasize the need to find new technical directions to protect Web applications and Web sites from their own vulnerability.

The research is based on existing literature, diplomatic reports and an inventory of testimonies of identified and revealed attacks from both sides.



A typology of attacks – July 2006

Blocking or limiting access to Websites

- Denial of Service and its distributed form (DDOS)
- DDOS exploits some weaknesses of Internet protocols which enable attacks on the infrastructure of the Internet, Internet service providers and Web sites hosting services. In July 2006, thousands of Israeli and Hezbollah hackers have attacked Websites with DDOS:
 - Israeli government and military Websites
 - Website of Hezbollah's TV Channel Al Manar

- Techniques of Penetration, interference and blockage:
- Israel tried to block Hezbollah's communication Networks. They also used their warships to interfere with Lebanese wireless networks to prevent the Lebanese public from accessing the Web.
- Hezbollah penetrated computers of the Israeli army and tried to penetrate the ministry of Foreign Affairs networks, the Bureau of ministers and Israeli military camps networks.

Intelligence material and spying activities

- Use of satellite and aerial images available on the Web (Google Earth i.e.) to detect strategic assets of the enemy, as Hezbollah leader's residences in Beirut, military areas in Israel or Hezbollah training camps.

Propaganda Techniques (PsyOps)

- Online Campaigns of media influence by both camps using E-mails, flame-wars or forum spamming.
- The World Union Of Jewish Students (WUJS) provided a software called "Megaphone" downloadable from the site. The goal was to create live online reaction and create support for Israeli actions.
- Special PsyOps Websites (In opponent's language)

Live Websites modification

- Home page replacement
- Home page modifications
- Language changes
- Insertion / change of photos / flags / logos
- Insertion of content
- Deleting of content

July 2006 Attacks: Examples

Lebanon Pysop 06 - Part 2: Hacking Al Manar TV



IDF Hackers Unit

This video presents the activities of the IDF Hackers Unit after their attack on Hezbollah's TV Al Manar



GIYUS.ORG

Megaphone software is available for download and broadcasting of news on the situation.



ALL4LEBANON.ORG

All 4 Lebanon offered payment for tip-offs from Lebanese citizens "that could help Israel in the fight against Hezbollah".



AL MOUKAWAMA

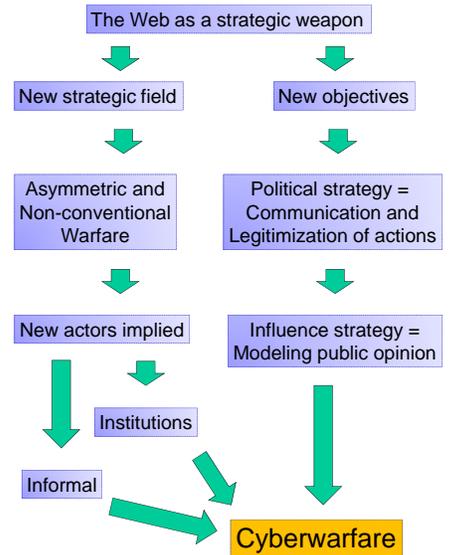
Hezbollah's Website original Arabic language changed to Hebrew



IAF Map

Usage of Google Maps to locate targets in Hezbollah's stronghold in Beirut

Strategic objectives and actors



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About the research

Web Cyber-warfare is a very sensitive context and attacks are extremely difficult to identify. Their technical specifications are classified information and actors are under cover for most of the time.

Thanks to sig web

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