Netwar and Cyberwar

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Description
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Netwar and Cyberwar

By Jeffrey Barlow<br> <barlowj@pacificu.edu>

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We began by discussing a number of terms: Cyberwar; Information Attack; Information Warfare; and finally, in our next issue, Netwar. (1) Here we wish to further develop the concept of Cyberwar in order to gain a broader understanding of the relationship between forms of violence and the Internet.

Although most of us have been largely ignorant of them, there have already been many examples of cyberconflicts. The struggles in Kosovo, for example, had some minor attributes of Cyberwar. (2) Those were in large part nothing particularly new, but rather the logical extension of new tools into military space. They should more properly be termed “information warfare” or even psychological warfare in that they consisted largely of a struggle to dominate the flow of information.

Probably the most common form of Cyberwar has been to attack the Internet information resources of the opponent, WWW pages or servers. There have been, for example, major such clashes between Israeli and Palestinian groups. Hacker ethics generally restrain “hacktivists” from doing real damage to the opponent, so the level of violence has usually been the post-modern equivalent of counting coup–defacing the opponents’ web pages. In this struggle, interestingly, the Palestinian hackers are said to have mounted 200 successful assaults vs. Israeli hackers’ 40.
(3) There have been similar clashes between Indian hackers and Pakistani ones (Pakistanis victorious), between China and Taiwan (China over Taiwan), Portugal vs. Indonesia over E. Timor (Portugal, no contest) and many lesser known ones, including Chinese hackers vs. American ones (a draw). (4)

Cyberwar, (all forms of electronic attack or defense) like all things cyber-, might give an impression of being so evanescent as to be unimportant. But to so dismiss them would be to make a grave mistake. It is true that the above examples clearly have an aura of adolescent hijinks about them. This is in large part because of the hacker ethos that unites the contestants. But a true struggle between nations or ethnic groups that escalates to deadly force will, of course, likewise escalate in cyberspace. There are already many examples of cyberconflicts with potentially disastrous outcomes for one or more of the participants.

Escalations of such conflicts include “denial of service attacks” in which one side disables the electronic resources of the enemy. In October of 2000, for example, the Israeli Knesset, as well as the Foreign Ministry Web site, were down for thirty hours due to blizzards of E-mail which crashed their servers. These attacks came simultaneously from Lebanon, Saudi Arabia, Europe, and North America, apparently coordinated from Lebanon. (5)

A more dangerous level of escalation is to gain sufficient access to a server to begin to exercise undetected control over some of its operations. In February of 2001 someone gained access to a server that controlled part of the California power grid. (6) This should not have come as a surprise. As early as 1997, in a National Security Agency (NSA) test, hired hackers gained sufficient access to disrupt power grids in Los Angeles, Chicago, Washington, and New York had they wished to do so. (7)

Nor are the above simply a range of frightful possibilities: the conflict with Osama Bin Laden has long had elements of cyberwar. It was claimed in February of 2001 that the Central Intelligence Agency has succeeded in “mapping” Bin Laden’s “financial and operational networks.” (8) The implication was that the agency had succeeded in disrupting his finances. More recent events, however, suggest an element of optimism or possibly a disinformation campaign in those earlier CIA claims.

The question as to whether or not Bin Laden is truly in charge of the wide variety of terrorist actions often ascribed to him should probably be left open at present. To do otherwise is to risk later surprises in the event that he is captured or killed. But it is clear that the terrorist movement as a whole has recruited many talented and patient men. Ramzi Yousef, for example, the convicted bomber in the first World Trade Center incident in February of 1993, began studying in Great Britain in 1986. He attended Oxford College of Further Education and then took courses in Electronic Engineering in Swansea, Wales. (9) Mr. Yousef learned both the chemistry and the electrical engineering skills necessary to develop unprecedentedly sophisticated bombs, though the botched World Trade Center instruments were not such.

Groups like Hamas (Palestine), the Algerian Armed Islamist Group (Algeria), the Harkat Ul Moujahdeed (Pakistan) and Hezbollah (Lebanon), each at some time said to have been linked to Bin Laden, have demonstrated a high level of skill in utilizing the Internet for political purposes. (10) Louis Freeh, then Director of the F.B.I., ranked terrorist skills with computers among “threats to U.S. national security” as early as January of 1998. (11) Yousef himself was later linked to such terrorist groups as the Gama al-Islamiya, Islamic jihad, Hamas, the Sudanese National Islamic Front and al-Fuqrah. (12) Bin Laden, of course, has been linked to many additional groups. It is probable that the interchange of people, skills, and equipment guarantees that computer hacking skills are very widespread in all the groups.

The nature of hacking makes it difficult to assign responsibility to particular incidents. It is known that hackers have successfully penetrated even the National Aeronautics and Space Administration Jet Propulsion Laboratory computers which held data pertaining to commercial air traffic, Global Positioning System navigation satellites, and the location of Stealth aircraft among other bodies of information. This particular hacker was traced back to the Persian Gulf. But whether or not he was associated with al Qaeda is unknown. (13)

It is clear that present conflicts already involve substantial elements that can be seen as an impact of the Internet. It is certain that the “war against terrorism” will involve a substantial electronic element, accurately described as “Cyberwar.”

In our next and concluding piece, “Netwar and the War on Terrorism” to be posted in December, 2001, we will argue that the conflict now described as the war on terrorism must be understood as a new phenomenon, “Netwar,” and that a failure to understand this concept will result in continuing conflict rather than an end to terrorism. The very nature of warfare has changed as a result of the Internet. Non-state players have been afforded new opportunities, have created new organizational forms suggested and facilitated by the Internet itself, and have been able to use the Internet to prepare and to stage their attacks. They cannot be stopped by conventional warfare, indeed, conventional warfare will, in the long run, feed the machinery of terrorism with the energy and personnel it will need to expand.

NOTES:

1) We defined these as:

* **Cyberwar**: This concept has been defined as any form of electronic attack or defense. We think that it should be defined as involving a level of violence or harm above conventional “hacking.”

* **Information Attack**: This concept is defined by the U.S. Air Force as “directly corrupting adversary information without changing visibly the physical entity in which it resides.” (Stein, Information Attack, Executive summary)

* **Information Warfare**: This concept appears to embrace all forms of electronically-mediated warfare. For example, an electronic attack upon a particular web site or server, and the posting
of spurious electronic material intended to engender a particular psychological or policy response, would equally be termed Information Warfare (IW) (Rathmell, 1.)

**Netwar**: This term in its origin means, according to Arquilla and Ronfeldt, “societal-level ideational conflict waged in part through interneted modes of communications.” (Stein, Information war, Cyberwar... p 2)


Bibliography (Cumulative for all editorials in this series.)


Ronfeldt, David, John Arquilla, Graham E. Fuller, and Melissa Fuller. The Zapatista Social Netwar in Mexico, Rand, Santa Monica: 1998.


RESOURCES:
The Institute for the Advanced Study of Information Warfare
<http://www.psycom.net/iwar.1.html> This is a metasite for links relating to all forms of electronic warfare. A number of the materials on the site seem to no longer be available, perhaps as a response to the events of 9-11. Accessed 10/30/2001

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15 THOUGHTS ON "NETWAR AND CYBERWAR"

on January 30, 2014 at 1:58 AM said:

Hi there it’s me, I am also visiting this site on a regular basis, this website is really nice and the people are really sharing nice thoughts.

Mysticoaks.Com
on January 31, 2014 at 3:20 AM said:

I am sure this article has touched all the internet visitors, its really really pleasant piece of writing on building up new webpage.

WWW.MYSTICOAKS.COM/NUMEROLOGY/NUMEROLOGY-PERSONALITY.HTML
on January 31, 2014 at 3:01 PM said:

I believe what you published was very logical.

But, think about this, what if you added a little information?

I ain’t suggesting your information is not good,, however what if you added a headline that grabbed a person’s attention?
I mean Netwar and Cyberwar | Interface is kinda vanilla.
You could glance at Yahoo’s front page and note how they create post titles to grab people to click.
You might try adding a video or a pic or two to get people excited about everything you’ve written. Just my opinion, it might make your posts a little livelier.

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**best charcoal grill**

on *February 1, 2014 at 9:08 AM* said:

What you posted made a bunch of sense. But, think about this, suppose you composed a catchier post title? I am not saying your information is not solid, however what if you added a post title that makes people want more? I mean *Netwar and Cyberwar | Interface* is kinda vanilla. You might glance at Yahoo’s home page and note how they create news headlines to grab people to click. You might try adding a video or a related pic or two to get readers excited about what you’ve got to say. Just my opinion, it might bring your posts a little bit more interesting.

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**best shoes for crossfit**

on *February 3, 2014 at 7:44 PM* said:

Please let me know if you’re looking for a writer for your blog.

You have some really good posts and I believe I would be a good asset. If you ever want to take some of the load off, I’d really like to write some content for your blog in exchange for a link back to mine. Please blast me an e-mail if interested. Many thanks!

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**jig saw reviews**

on *February 3, 2014 at 8:28 PM* said:

Thanks for sharing your thoughts about home equity rate in. Regards
vacuum sealer reviews
  on February 3, 2014 at 8:32 PM said:

I constantly emailed this blog post page to all my associates, since if like to read it after that my contacts will too.

best induction cooktop
  on February 3, 2014 at 9:15 PM said:

I read this piece of writing completely concerning the comparison of hottest and previous technologies, it’s remarkable article.

infrared grill reviews
  on February 4, 2014 at 12:47 AM said:

First off I want to say excellent blog! I had a quick question which I’d like to ask if you do not mind.
I was interested to find out how you center yourself and clear your thoughts before writing. I have had a hard time clearing my thoughts in getting my thoughts out there.
I truly do enjoy writing however it just seems like the first 10 to 15 minutes are wasted just trying to figure out how to begin.
Any ideas or tips? Many thanks!

best folding bike
  on February 4, 2014 at 4:08 AM said:

Everyone loves what you guys are up too. This kind of clever work and coverage!
Keep up the amazing works guys I’ve incorporated you guys to my personal blogroll.
**espresso machine reviews**  
*on February 4, 2014 at 4:22 AM said:*

Hey there! I’ve been reading your site for some time now and finally got the courage to go ahead and give you a shout out from Humble Tx! Just wanted to tell you keep up the great job!

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**best humidifier**  
*on February 4, 2014 at 4:32 AM said:*

I’m truly enjoying the design and layout of your site. It’s a very easy on the eyes which makes it much more enjoyable for me to come here and visit more often. Did you hire out a developer to create your theme? Superb work!

---

**best clothes steamer**  
*on February 4, 2014 at 5:05 AM said:*

Very shortly this website will be famous among all blog viewers, due to it’s pleasant articles or reviews

---

**garbage disposal reviews**  
*on February 4, 2014 at 10:04 PM said:*

Very descriptive article, I enjoyed that bit. Will there be a part 2?

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**Revealing**  
*on February 5, 2014 at 9:27 PM said:*

Thanks a lot for sharing this with all folks you really
recognise what you’re talking about! Bookmarked. Kindly additionally seek advice from my site =). We could have a hyperlink exchange agreement between us