

# Critical Thinking and Disintermediation<sup>1</sup>

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Disintermediation in general is defined in dictionaries as “Removal of intermediaries: the elimination of intermediaries such as wholesalers or retailers in business transactions between producers and consumers.”<sup>2</sup>

Disintermediation in the distribution of news is the phenomenon of reducing gate-keepers in the flow of information from provider to user.<sup>3</sup> For example, Matt Drudge is free to spread unsubstantiated rumors to a huge audience without having to bother with the fact-checking that is customary in responsible news media such as reputable newspapers or magazines and some television or radio programs. Mind you, sometimes even the mainstream news media get sucked into the rumor mill.<sup>4</sup>

Critical thinking is the ability to analyze information skeptically rather than gullibly. For example, people who open unexpected attachments in e-mail from friends are failing to distinguish among different targets of trust:

- Trust in the authenticity of the FROM line of an e-mail message (which may not, in fact, correctly identify the source);
- Trust in the technical competence of the sender to evaluate the quality of the attachment (which may not, in fact, correlate with how loveable and friendly Aunt Gladys is);
- Trust in the authenticity of the labeling of the attachment (which may not, in fact, really be a document at all but may be an executable);
- Trust in the description and safety of an attachment (which may not, in fact, be a screen saver with frogs).

Now couple disintermediation with a lack of critical thinking. Consider the likely effects of a concerted campaign to, say, spread a number of rumors about major publicly-traded companies. We know that pump ‘n’ dump schemes have successfully manipulated stock values to the benefit of criminals; why not expect terrorists to apply the same techniques to manipulating the entire stock market? If people are willing to believe and act upon stock tips e-mailed to them by total strangers using spam (even though tiny print clearly states that the junk mailer has been paid to distribute the information), why wouldn’t uncritical thinkers cheerfully act on “advice” spread by enemies of the nation?

The spread of useless or frankly erroneous information through e-mail chain letters is another egregious example of lack of critical thinking. For example, consider the chain mail that warns

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<sup>1</sup> Based in part on articles published in *Network World Security Strategies* newsletter in 2004. Updated 2007.

<sup>2</sup> Microsoft® Encarta® 2007.

<sup>3</sup> See for example Robertson, J. (2006). Media disintermediation. On *Smalltalk Tidbits, Industry Rants* blog at <http://tinyurl.com/yo4q3o>

<sup>4</sup> Anonymous (“S.M.”) (2004). “Unsubstantiated Drudge rumor echoed through the media.” From *Media Matters* at <http://mediamatters.org/items/200405020004>

people about a tourist's being found in an ice bath with a painful incision after an illegal removal of his kidney: why would criminals leave the victim alive? And even a cursory check of an urban-myths site such as snopes.com will debunk almost all chain letters. The credulity of people who forward such junk not only astounds me, it worries me. I think that the same credulity infects politics when such uncritical minds listen to biased news outlets that are blatant propaganda mills spewing distortion into the sphere of public discourse.

Similarly, the phenomenon of flash crowds worries me: training people to assemble on command in large numbers at, say, shoe stores, piano showrooms or restaurants for no good reason other than the fun of being part of a huge crowd is a perfect setup for creating an army of willing, mindless drones who will congregate on command at the site of a terrorist attack or at places where their presence will interfere with response to criminal or terrorist activities. Want to rob a bank in peace and quiet? Set up a conflict between two instant crowds to draw the police to an instant riot.

One of the battlespaces of information warfare is the cognitive domain: knowledge, perception, attitudes and mood. For example, military campaigns have long used propaganda and misinformation to influence both the military decisions of the enemy and to discourage enemy soldiers and civilians. In the Second World War, for example, the Nazis used radio broadcasts into Britain to spread false information about the progress of the war; conversely, the Allies broadcast to the peoples of the Axis powers to blame the governments, but not the population, for the war, thus attempting to drive a wedge between civilians and their regimes.

Propaganda is used to sway domestic public opinion. For example, on August 5, 1964, President Lyndon Johnson lied to the nation about an attack by North Vietnamese gunships on the USS Maddox and the USS Turner Joy as part of a plan to gain Congressional approval for increasing attacks on North Vietnam. In more recent years, there was a scandal in the USA in October 1986 about a reputed disinformation campaign during the Reagan administration in which government officials were accused of misleading the press to convey false information to Libyan dictator Qaddafi about an imminent attack. And currently there's a major division in the USA between those who argue that the administration deliberately lied to the American people about a clear and present danger to the USA from Iraqi weapons of mass destruction to excuse a long-planned pre-emptive attack on Iraq versus those who claim that the decision was at worst based on incorrect information or even that the information *was* correct despite the failure to find corroborative evidence of weapons of mass destruction.

I think that teaching critical thinking is an essential part of education. In my undergraduate teaching, I constantly encourage my students to challenge what they read – and what I say in class. Students who identify errors and suggest corrections in lecture notes get extra points, as do those who take the time to identify errors or suggest possible improvements in exam questions. I had one graduate student write to me timidly with a hesitant suggestion that there was an ambiguity in an exam question; I thanked her enthusiastically and awarded her extra points on her exam. She wrote back that when she told colleagues about the incident, they expressed amazement, saying that *their* professors would have scowled at them and given them a hard time. I don't think that such a response encourages critical thinking.

The MSIA program<sup>5</sup> at Norwich University includes a case study<sup>6</sup> that runs through the entire 18 months and weekly class discussions designed to foster articulation of diverse views. These components offer the opportunity to exercise critical thinking. The case study, which typically requires students to interview colleagues, challenges theoretical assertions the students are reading in references or hearing in lectures with the field experience of their colleagues – people who actually work in the areas about which the students are studying. I always say, “Reality trumps theory.” The weekly discussions demonstrate to the students that there can be diverse legitimate points of view on practically any subject and helps them practice rational discourse. Teachers evaluate student contributions in part by the degree to which they articulate their positions clearly, provide evidence to back up their views; external references are welcomed and rewarded.

I think that all of us in the IT, network and security fields are used to critical thinking. We have to be to keep up with the flood of technical information and distinguish marketing exaggerations from realistic information. We are used to writing and reading product comparisons, strategy evaluations and management recommendations as part of our work. Let’s use our skills to foster critical thinking throughout the educational system. Let’s work as volunteers on school boards, in the classroom and in social organizations to introduce critical thinking to children and adults who haven’t learned how to distinguish reality from propaganda. Push for curriculum changes to accompany lessons on how to use the Internet with lessons on how to weigh the information found through e-mail and on the Web.

Let’s make sure that we’re not patsies for an information warfare attack rooted in disintermediated propaganda.



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<sup>5</sup> <http://www.graduate.norwich.edu/infoassurance/>

<sup>6</sup> [http://www.graduate.norwich.edu/infoassurance/consultancy\\_project.php](http://www.graduate.norwich.edu/infoassurance/consultancy_project.php)

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