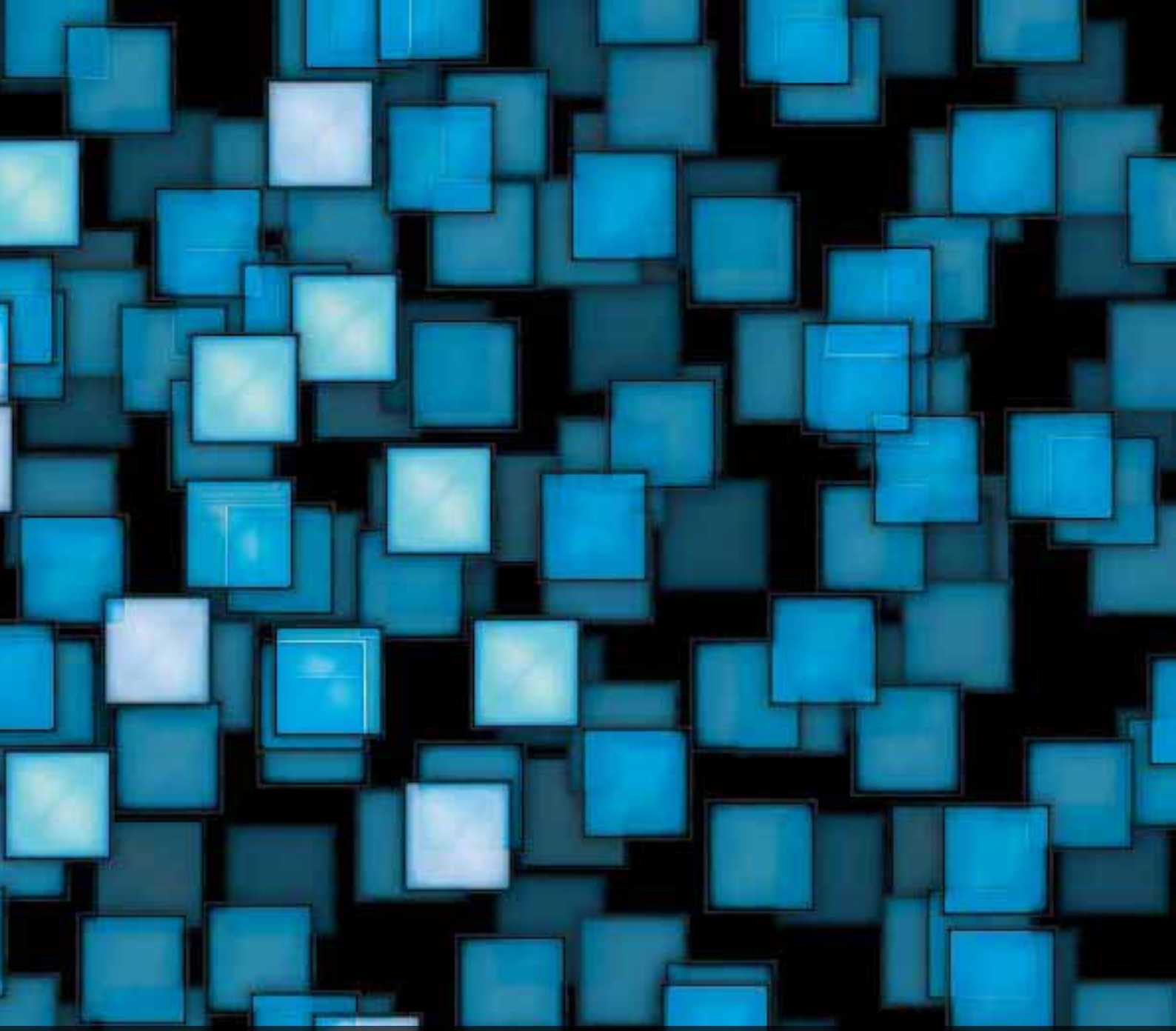

# *Networks and Weaponless Wars*

## Information Operations Content Dissemination via the Blogosphere

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MKVK01, fall 2010
*Date of Submission* **January 10, 2011**

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# Abstract

This study advances a broad analytical perspective intended to critically evaluate the predominant definitions of *information operations* (IO). The prevalent concepts of IO are challenged due to their reliance on unidirectional communication flow models that cannot account for the characteristics of *produsage* media, nor the culturally specific, interpersonally contextualized sense making processes of reception. The study objective entails the formulation of a redefined theoretical understanding of information operations in light of the advance of changed sociocultural and medial structures. IO are construed by the author as being attuned to the growing dependence of modern societies on technological communication networks and indeed the fundamental networked design of the world of mediated globalization. It is argued that information operations may seek to take advantage of this network structure on technological and psychological levels and that the study of IO constitutes an evolving but increasingly pertinent concept.

The investigation focuses specifically on the means of IO content dissemination within the blogosphere, which is construed as a scale-free network analogous to social communicative networks. It is argued that influential bloggers can be perceived as interconnected hubs that jointly distribute and redistribute information, whereas mainstream media channels are switchers that have the power to connect detached network subsets. One underlying question is whether blogs and other "new" media hold any manifest influence at all over opinions and how the mechanisms of information dissemination within the blogosphere and to higher levels of the media strata can be evaluated. By drawing on theories of Social Network Analysis as well as theories of media, communication and defense strategy it is suggested that blogs and other meso level media are especially efficient as liaisons to other media through which information operations may disseminate further.

The author concludes that in a world of mediated globalization, new media has the ability to incorporate functions from both vertical and horizontal communication. The author suggests that IO can be conceived of as *an array of activities directed towards a segment of a mediated communication network. These activities are intended to modify the mediated flow of communication through the injection, alteration or blocking of a communication message, in order to yield a cognitive or emotional responsive effect in the subject's (collective) mind; the fundamental objective is to influence the subject's decision-making in a somewhat predefined way. The IO content may propagate throughout different levels of the media strata. This process of dissemination may coincide with the overall objectives of the agent or result in blow-back effects.*

**Keywords**

Blogs, bloggers, blogosphere, blog influence, influential bloggers, communications, influence, mass media, public opinion, Internet, WWW, BlogTrackers, psychological warfare, cyber war, information operations, InfoOps, PSYOPS, electronic warfare, operations security, citizen journalism, participatory journalism, media readiness, media strata, network theory, social networks.

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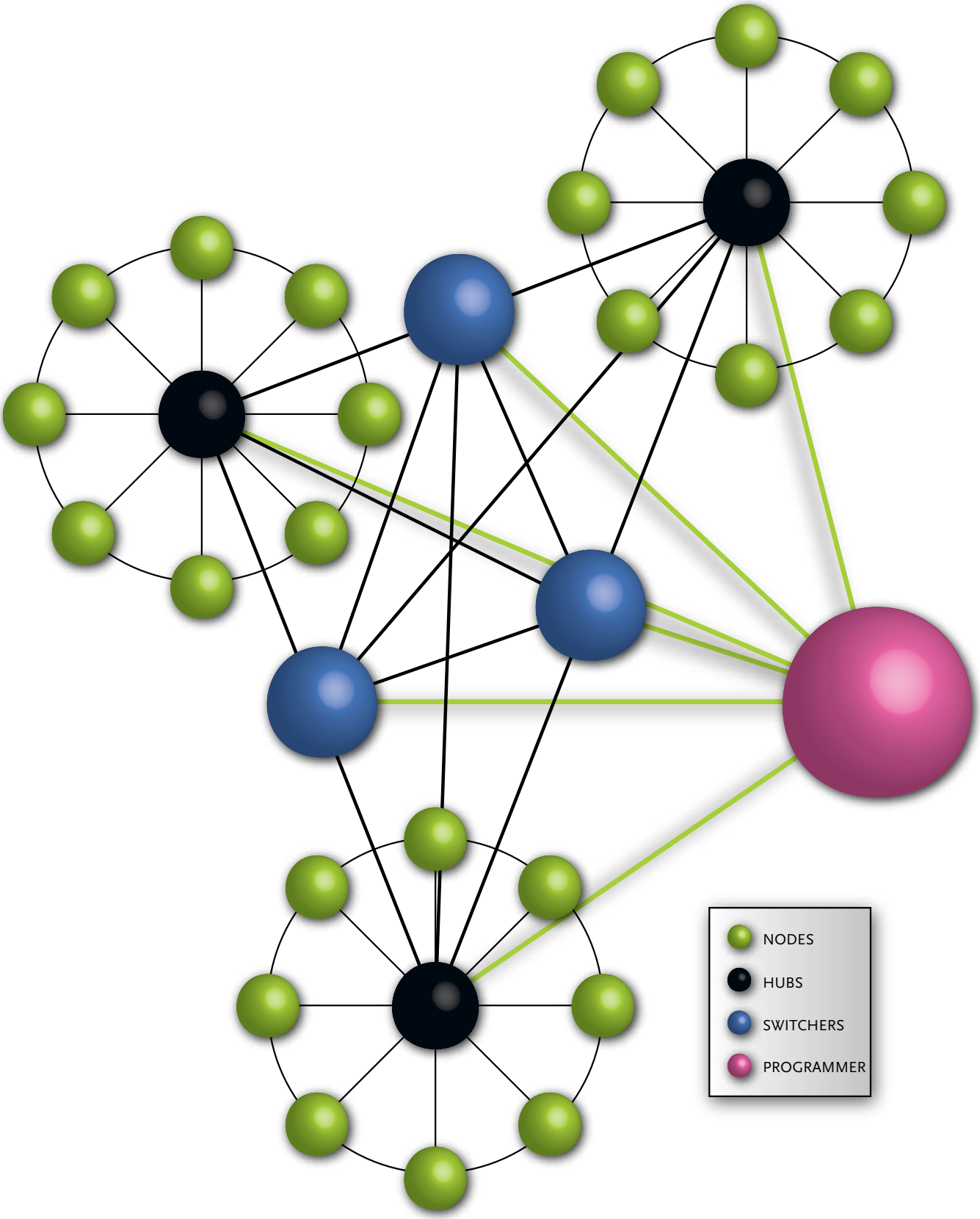
# *Network Components*



# 1. Introduction

It may seem unlikely, but you are probably no more than six or seven acquaintances away from Nelson Mandela, Barack Obama or Lady Gaga. The six degrees of separation theory was made famous by psychologist Stanley Milgram's "small world" experiment in the late 1960's. The findings were met with skepticism within the academia, however recent studies seem to corroborate the original theory: one should be able to reach almost anyone else on the planet through an average of six handshakes, using one's social network[1]. The "human web" is a complex social structure where each individual functions as a unique connection point, usually referred to as a *node* (from the Latin word for "knot", nodus). We are all connected in a network of *social ties* and a fundamental component of these are the technological networks on which we rely as means of vertical (mass media) and horizontal (mail, mobile etc.) communication. Furthermore, social and communicative infrastructure may be construed as analogous to technological as well as biological networks. The main feature held in common by these networks is their scale-free nature, which basically entails that their growth is based on *preferential attachment*, a phenomenon which will be outlined further in this paper.[2] Given the analogous relationship between social, biological and technological networks, there must be several insights that can be drawn from what we already know about computer network systems and natural networks. One notorious trait of the latter networks that comes to mind is their inherent vulnerability to viral dissemination. Most people with a PC would attest that software viruses are no less recurrent than the common cold. In fact, computer viruses and biological viral infections disseminate in a similar fashion within their respective networks. But what if *disinformation* with the potential of seriously manipulating its human receivers would be able to disseminate in a similar fashion, distributed through the technologically mediated social networks? Indeed, the emergence of information technology (IT) has been accompanied by a new threat to our perception, ultimately a potential threat to national security, and it entails the covert injection or alteration of mediated information content.

## 1.1 *Background*

In the world of mediated globalization, societies appear to be organized around and interconnected by techno-social networks of communication[3]. Here, various mass media and "new" media[4] constitute interconnecting *hubs*: information arenas that compete with the physical world for our perception.[5] Media communicates and simultaneously designs the events and developments of the physical world while it also serves to unite the flows of

1 Horvitz & Leskovec 2008.
2 Barabási 2009.
3 Thompson 1995, Castells 2009; Castells 2000; van Dijk 2006.
4 van Dijk (2006, p. 6) defines *new media* in terms of *digital code, integration* and *interactivity.*
5 According to the Swedish Armed Forces Handbook on Information Operations, an *Information Environment* is composed of *Information Arenas, Cognitive Domains* and *the Physical World* (Försvarsmakten 2008, p. 15).

communication within human cultures.[1] So within the metaphorical setting of networks, media channels can also be understood as an array of *network switchers* that connect different virtual and physical networks.[2] In a democratic perspective, these switches play a decisive role in the formation of opinions as well as agenda setting and, in addition, the media most likely produces the strongest psychological force in modern society.[3]

The advancement of communication networks has also brought about an unprecedented increase in the availability of information distribution channels. As it becomes increasingly difficult to separate these channels and navigate through information output, our roles as media consumers are coincidentally undergoing a gradual change as we become increasingly engaged in the *production* of media content. This participation, which I will refer to as *produsage,*[4] encompasses a wide spectrum of user created content ranging from blogs and micro blogs to social networks, forums, wikis and media sharing. Manuel Castells isolates the essence of produsage media when he describes it as the third mode of communication next to mass communication and interpersonal communication, namely *mass self-communication*: "It is mass communication because it can potentially reach a global audience [...] At the same time, it is self-communication because the production of the message is self-generated, the definition of the potential receiver(s) is self-directed, and the retrieval of specific messages or content from the World Wide Web and electronic networks is self-selected".[5] User created content can also belong within the context of a relatively novel phenomenon called *citizen journalism*. This concept of journalism is especially embodied in the rising practice of blogging.

In some cases, news produced by citizen journalists have come to receive considerable attention – within the participatory news realm as well as in traditional media. Some self-proclaimed citizen journalists have also come to exercise great influence over professional news editors, politicians and even stock markets. At the same time, produsage-based media draws out a new threat to information security and provides new means for those who intend to influence or mislead others in order to gain some vantage. Indeed, as the media exerts an increasing control over outlooks and opinions, the accelerating progress of information technology combined with altered media structures and the blurred division between journalist and media consumer coincidentally produce unforeseen possibilities to create and disseminate covert rogue messages in order to affect opinions, feelings, behaviors and decision making.[6] On October 3 2008, an anonymous posting on CNN's participatory news site iReport.com claimed "inside information" on Apple CEO Steve P. Jobs, who allegedly had suffered "a severe heart attack". The story instantaneously gained momentum on the Internet and, within minutes, trading in Apple's stock skyrocketed as

1 McQuail 2000, p. 64-66; Hadenius, Weibull & Wadbring 2008, p. 396; Stütz 2005, p. 12.
2 Castells 2000, pp. xxxviii-xxxix; Castells 2004, pp. 33-34; Castells 2009, p. 45.
3 Béen 2010; Ekdahl, Lindmark & Stütz 2004.
4 Bruns 2007.
5 Castells 2009, p. 55.
6 Stütz 2005, p. 17.

the share price fell by a dismaying 10 percent, a plunge worth almost $5 billion of market value.[8] I will address this event more closely in section IV with special attention to the dissemination of the story throughout the blogosphere. As an introductory example however, this story illustrates a key premise for my line of argument because it indicates that Internet news can have a profound impact and that user published online content cannot be discarded as non-influential because of its perceived unreliability. Contrarily, blog and other produsage content have the capacity to disseminate very quickly.

Ultimately, information networks create a new balance of power and influence, insisting on the value of information and knowledge and thus transforming national interests and the formulation of national security strategy.[9] In other words, because technological premises create new values, new resources and new methods, the incentives and modes of making war are undergoing a paradigm shift affecting the *ends*, *ways* and *means* of national security strategies.[10] All of these elements have changed in wake of the emergence of the network-centered society and will probably continue to do so.[11] *Ends* will most likely be less focused on enforcing borders and more on controlling information infrastructure and content. The strategic *ways* will shift from physical confrontation to network based actions and defense;[12] in essence, national security strategies will rely on networks of cooperation to ensure information superiority in relation to adversaries. It follows that the *means* in the information age national security strategic program is knowledge and information control, essentialy assuming the role of *network programmer*. In network terminology, the programmer has "control of, or influence on, the apparatuses of communication" and can shape the flow of communication in a way that benefints the programmer.[13] On a more substantial level, the new ways of security strategy include information activities intended to influence the will, understanding and capabilities of adversaries. These activities comprise the substance of an array of functions that constitute the area of research in this study. The umbrella term for these activities is *information operations* (IO)[14]. I will lay out the currently predominant definitions of this term on page 8, but sufficient to say that the definition of IO entails planned and coordinated activities intended to effect the subject on a perceptual or psychological level through media system or media content alteration.[15]

## 1.2 *Study Objectives*

The purpose of this study is to produce a redefined and improved theoretical understanding of information operations in light of the advance of the network-centered society and

8 Sandoval 2008; Siegler 2008; Allan & Thorsen 2009, p. 2.
9 Castells 2000, p. xxxviii; Fast 1996, pp. 3-7.
10 Fast 1996; Arquilla & Ronfeldt 2001.
11 These concepts of defense strategic transformation apply primarily to more developed countries (MDC). However, I regard the general developments of the media landscape as global, hence these future trends may be equally applicable in lesser developed country (LDC) settings. I will adress this issue further in later sections.
12 Grude 2008.
13 Castells 2000, p. 533.
14 The acronym IO, is conventional in Sweden, US and Canada. Otherwise abbreviated *Info Ops*.
15 E.g. NATO RTO-TR-SAS-057, p. 14.

new media produsage. This understanding is intended to contribute to the development of an analytical method of IO media content.

I will demonstrate how the aggregated functions of psychological and informational warfare identified as information operations have been defined based on a *hypodermic* view of information transmission which, in light of the new forms of media production and usage is becoming increasingly outmoded, notwithstanding the lack of agreement on how to define IO.[1] I will specifically highlight two deficiencies of the current definitions; these pertain to *distribution* and *reception*. Specifically, the current definitions of IO fail to account for the present and future techno-social conditions and scale-free properies of information dissemination. As I intend to show, new media holds a considerable potential for communicating embedded IO messages but mainly through network diffusion and redistribution to different network nodes rather than by direct broadcasting. According to my hypothesis, technological and interpersonal networks *converge* in media produsage; in effect information may traverse these networks several times. For this reason, in the process of information dissemination a new meaning of any message will form as a product of *joint sensemaking*. This leads to my second argument, that the predominant IO definitions fail to consider the social, cultural and symbolic nature of reception and interpretation. For these reasons I will suggest a redefined understanding of the IO concept.

## 1.3 *Rationale*

Over the last decade, there has been much analysis and debate surrounding citizen journalism and participatory news as a branch of the advancing user-centered Web 2.0,[2] in which the impact of blog stories on democracy and journalism has been of particular interest within the media and communications academia.[3] However, while studies on influence and coercion by communication are central within media and communication studies (MCS) and have been so since its outset, inquiry into the nature of IO and media readiness is almost nonexistent within our discipline. Rather, IO research has been relegated to governmental agencies and carried out by national defense research institutes or by security consultants, presented in reports or military handbooks. In Sweden, some IO studies have been carried out within the MCS perspective, primarily by the Psychological Defense Agency (SPF)[4] and the Council of Media Readiness;[5] this research has established that "[the present-day media centric society appears to make up the perfect terrain for IO ambuscades]".[6] Similarly, the Swedish Armed Forces (SAF)[7] has determined that information operations pose

1 NATO RTO-TR-SAS-057, p. 1.

2 E.g. Allan & Thorsen 2009; Singer 2006; Mythen 2010; Nip 2006; Overholser 2006.

3 Gill 2004; Scott 2005.

4 The Psychological Defense Agency, *Styrelsen för psykologiskt försvar*, was discontinued in 2009. This research is now a part of the Swedish Civil Contingencies Agency, *Myndigheten för Samhällsskydd och Beredskap* (MSB)

5 A cooperation between SPF and Swedish media organizations.

6 Stütz 2005, p. 16, (Authors' translation, see original excerpt in **Appendix B**)

7 IO in military context is researched at "Centrum för informationsoperativa studier" at the Swedish Defense Research Agency (FOI).

a significant threat to national security that is likely to escalate in the future.[1]

In its broadest terms, "information warfare" is nothing new. As postulated by Sun Tzu in the sixth century BC: "All war is based on deception" and "To subdue the enemy without fighting is the acme of skill".[2] Yet this insight seems even more significant in light of the intersection between citizen journalism and the new state of defense strategies. In the information-centered world, media readiness and defense against any form of perception manipulation should no doubt be considered as imperative.

As the process of globalization fundamentally transforms the conditions of communication and culture as well as the concept of space and time, the last decade appears to be marked by a growing tension between cosmopolitanism and particularism. Terhi Rantanen[3] develops Robertson's five stage globalization model to include a sixth stage which he labels *Antagonism* which includes regional or displaced conflicts, anti-globalization activism, terrorism etc. Given these underlying tensions it is most likely not a matter of if but of when different media will be major battlegrounds in wars information and perception. LTC William R. Fast has concluded that "information age weapons are equalizers. They [...] favor the weak over the strong".[4] In effect, the power of deception lies in the hands of many and potential adversaries may range from nation states to organizations, terrorist cells or insurgents fighting a non-democratic regime. Correspondingly, the target of the operation could be an individual or an organization, a group of decision makers, a financial market or society at large. I will limit the scope of this study to issues of information operations with concerns to national security. Whereas a fairly extensive and sophisticated body of literature on the subject of new media, participatory journalism and blogging exists within the MCS field, knowledge on media-based IO has emanated mainly from the domain of defense –even though the field is still scarce and unsystematic.[5] So a substantial gap remains in the understanding of the intersection between these two areas. I am writing from media and communications perspective but building on research from the military domain. The theoretical conceptualization of IO is important to MCS as it enables the development of a method of IO content analysis. I believe that an interdisciplinary approach can make the concept of IO more accessible to media and communications research while the MCS perspective can infuse relevant theories of communication into IO research and provide a stronger focus on the reception process. I will thus focus on the theoretical understanding of IO and how it relates to new media but with the prospect that this discussion will be of relevance and applicability to defense research.

## 1.4 *Method*

[Recent developments on the global political scene have brought about new threats against national security, [...] carried out by means of information operations that in terms of intentional deception

1 2004 Annual Defence Projection, referenced in Bergström 2004, p. 13.
2 Tzu 2005, p. 4.
3 Rantanen 2005, 19ff.
4 Fast 1996, pp. 10-11.
5 Stütz 2005, p. 10; NATO RTO-TR-SAS-057, p. 1.

> could be targeted against our nation. It is difficult to foresee the precise nature of such assaults. The empirical data is scarce, for which reason any analysis of the problem area for the most part will come out as theoretical, hypothetical and possibly speculative.][1]

The concept of IO is complex and in parts elusive. There are no factual descriptions of IO planning, production, distribution and reception because such knowledge has not been compiled. One reason is that the shift towards "weaponless", information-centered wars as I have described it, still is in it embryonic stage; simultaneously, details on actual IO penetrations are rarely obtainable, as the information is kept confidential.[2] Another reason may well be methodological problems of IO studies. Within the MCS academia, it appears as if "certain dominant methods have tended to steer the focus of enquiry rather than the research question".[3] Because IO is an aggregate of different so-called "hard" and "soft" techniques with different applications it does not fall neatly into the methodological categories but requires a transcendent and multidisciplinary approach. In order to confirm the impact of new media on the concept of IO, I will attempt to construct a model of IO dissemination within the blogosphere; the methods employed consist mainly of studies of previous research and, in addition, statistical comparisons based on data from major surveys of Internet and blogosphere trends. I must draw on empirical data from adjacent research since I will not be able to demonstrate actual examples. This is not to say that the study cannot generate an enriched understanding of the IO dissemination process; it will at the very least produce strong conjectures of how IO content may disseminate through the blogosphere and to other media. The main rationale calls for the development of an analytical model that will prepare for future studies, challenging the traditional concepts of IO.

### Employment of Theories and Analytical Perspectives

Inquiries into the nature of the blogosphere have employed a wide range of approaches from the domains of sociology, systems science, physics etc. The study of blogs is still developing but there have been important contributions to the understanding of the blogosphere structure[4]. This structure is especially relevant to this study. As I have already mentioned, natural, technological and social networks have been shown to hold parallel features. The signal transduction of cells, transmission networks of viruses and the expansion of the World Wide Web (WWW) share identical network topologies so we can study the mediated and interpersonal dissemination of messages simultaneously. Furthermore, the nodes of the blogosphere are made up of human bloggers, which in turns strengthens the analogous relationship. Because, as we shall see, mathematical laws guide the interrelations of the blogosphere, I will attempt to formulate this model based on mathematical logics. This will entail a triangulation of research findings from different fields: social network analysis (SNA), military research and media content analysis, so that the model

1 Stütz, 2002, p. 7 (Authors' translation, see original excerpt in **Appendix B**).

2 I have repeatedly attempted to gain access to the empirical data underlying SPF studies, but purportedly this research is based on confidential data and does not follow the principles of intersubjective verifiability.

3 Höijer 2006, p. 101.

4 E.g. Agarwal et al 2008; Farrell, Drezner 2007; Gill 2004; Obradovic, Baumann 2009; Kumar 2010.

contains an anatomic mapping of a cogent IO dissemination process. The larger part of the study will build on media and communication theories that will be presented in the following section. Because I seek to combine the functions of IO content dissemination and reception into one working definition, this study will entail a round-trip between a transmission perspective and a receiver perspective. When studying the process of information dissemination we cannot (in reality) separate the process of transmission from the act of reception because each transmission from one *hub* (person, blog, etc.) to another will follow the previous reception. However, in order to study the dissemination process effectively I have chosen to utilize a holistic perspective on the overlaying structure of the dissemination process, thus circumventing the aspect of reception of interpretation. This is not to say that I presuppose how any message is received, but I expect that in large enough communication networks such as sections of the blogosphere or large clusters of interpersonal networks, the process of reception can be statistically and theoretically normalized. This structuralistic view is well justified in my opinion; because the empirical groundwork in the study of IO is so challenging, certain restrictions will always apply. In practice however, should empirical material be available such as in the aftermath of an implemented IO, the reception of the IO message would naturally be of primary concern.

#### Sample Cases

I will present two cases of misinformation content set to infiltrate and disseminate within the WWW domain. I will identify textual and contextual attributes that may relate to dissemination and reception. In combination with the previous undertaking these findings may help us create a model of salient IO strategies. The first sample case was constructed through content analysis of a number of Internet news sites at the time of the iReport story on Steve Jobs, the timeframe being four days after the event; the case illustrates how a message can disseminate withing a single media strata and yet achieve substantial effects. The second example concerns a false story on Pol Pot visiting Sweden and was retrieved from secondary sources; it serves to show how a message in one media strata may penetrate a second strata.

## 1.5 *Structure*

In the following section I will establish some working definitions of the key concepts in this study as well as the currently predominant definitions of IO. In Part III, because the subject has a wide span and requires a broad theoretical approach, an analytical framework will be constructed based on theories ranging from multi-step flow models to scale-free network hypotheses. Then, in Part IV, I will explore the nature of the blogosphere and its dissemination abilities. In part V, some actual cases of successful IO implementation will be presented. I will conclude the study in Part VI by summarizing the study and suggest a new definition of the IO concept.

# 2. Principal Definitions

## 2.2 Information Operations

Since the mid 1990s, NATO nations have jointly produced IO policies and doctrines. The report SAS-027 from 2006 asserts that IO "are likely to be one of the major instruments employed by a [NATO dispatched] commander to achieve his campaign objectives in many types of smaller-scale contingencies."[1] Notwithstanding the realization of the potency and importance of IO, the concept is still considered to be "evolving"[2]. The NATO IO policy document MC 422/1 states that information operations are "co-ordinated actions to influence decision-making of adversaries in support of the Alliance[3] overall objectives by affecting their information, information-based processes and systems while exploiting and protecting one's own."[4] This is a change from the 1999 definition, which explicitly identified adversarial *decision makers* as primary IO targets rather than *adversaries* in general[5].

The recently declassified US Department of Defense (USDoD) document "Information Operations Roadmap" states that the objective of IO is "to influence, disrupt, corrupt or usurp adversarial human and automated decision-making while protecting our own."[6] IO is understood as any or a combination of several core capabilities: electromagnetic warfare (EW), psychological operations (PSYOPS), operations security (OPSEC), military deception and computer network operations (CNO).[7] The USDoD definition seems to have been more narrowly outlined compared to its 1999 definition.[8]

Despite not being a member of the NATO alliance, the Swedish Armed Forces holds the main features of NATOS definition in common, although expressed in quite different terms:

> [Through information operations effects on the information arena are coordinated by influencing data and information, in purpose of affecting the activity of an adversary or other agents, while protecting domestic operations on the information arena].[9]

It is notable that SAF emphasizes outcomes on the *overall information arena* and that the overall goal is to affect *actions* in general rather than *decision-making* in particular; the expression *adversaries* or *other agents* could entail a much broader spectrum, e.g. a non-

1 NATO RTO 2006, p. 1.

2 NATO RTO 2006, p. 2.

3 Adversaries' IO, although they often employ identical methods of convincement,, are commonly refered to as instruments of propaganda.

4 NATO 2005.

5 MC 422 defined Information Operations as "Actions taken to influence decision-makers in support of political and military objectives by affecting other's information, information based processes, C2 systems and CIS, while exploiting and protecting one's own information and / or information systems." NATO RTO 2006, p. 11. involved.

6 USDoD 2003, p. 23.

7 USDoD 2003, p. 22.

8 U.S. Joint Publication 3-13 broadly describes IO as "*/.../ actions taken to affect adversary information* and information systems while defending one's own information and information systems." In Riegert 2002, p. 7, 9.

9 Försvarsmakten 2008, p. 14 (Author's translation, see original excerpt in **Appendix B**).

adversarial population. In the context of military interventions there is usually a conceptual separation between "white" and "black" IO. The former denotes overt "information campaigns" through various communication channels, while the second category entails the covert infiltration of false or altered information through media channels. These covert activities however, are generally considered to be equally reprehensible as physical warfare and can therefore attract considerable negative public attention.[1] SAF recently established the first Swedish psychological operations (PSYOPS) division with the assignment to "persuade any opponent not to attack the Swedes".[2] The Swedish PSYOPS activities are reportedly restricted to "white" operations.[3] The most notable agent of "black" IO is likely to be the United States, although concerns of possible blow-back effects have been raised within the USDoD as well: "People do not like to be deceived, and the price of being exposed is lost credibility and trust."[4] Information operations branch chief James Kinniburgh remarks: "In these cases, extra care must be taken to ensure plausible deniability and nonattribution[5], as well as employing a well thought-out deception operation that minimizes the risks of exposure."[6]

Still, it is relatively easy to grasp the definition of IO in the military context. The *ends*, *ways* and *means* are quite unambiguous: there is a distinct enemy and the IO arsenal of information weapons constitutes the means at hand. Nevertheless, similar principles are applicable in civil situations. The Swedish parliament has established the following IO definition:

> [Information operations are aggregated and coordinated interventions in states of peace, crisis and war in support of some political or military objectives by means of influencing or exploiting the information and the information systems of an adversary or other foreign agent. This can be carried out by exploiting one's own information or information system while these must simultaneously be protected. Influencing decision-making processes and decision-making constitutes an important feature.
>
> Information operations may be either offensive or defensive. They are implemented in political, economical and military contexts. Information warfare, mass media manipulation, psychological warfare and covert action are all examples of information operations].[7]

While this definition might seem verbose, it is the most equipped to be applied in a non-military conflict context. The last sentence is however, in my opinion, unfortunate and misleading. The term IO represents advancement from earlier terminologies, *information warfare* (IW) among others[8]. IW is similar to IO but signifies activities solely based in a military context with military objectives;[9] separating between these scenarios

1 Riegert 2002, p. 10
2 Askelin 2006.
3 It can be noted, however, that the SAF IO Handbook includes an annex outlining "methods of deception" (Försvarsmakten 2008, pp. 145-146).
4 Kinniburgh & Denning 2007, p. 224.
5 USDoD Nonattibution Policy entails that no specific person or institution will be publicly established as the origin of a specific statement.
6 Kinniburgh & Denning 2007, p. 225
7 1999/2000:86; 36. (Author's translation, see original excerpt in **Appendix B**).
8 Askelin 2004.
9 Riegert 2002, pp. 9-10; Libicki 1995.

seems unhelpful, if not obstructive. The 1997 designation by Martin Libicki[1] of an array of information-related military activities grouped as IW in fact correlates almost identically to the aforementioned USDoD definition of IO from 2003. *Psychological warfare* is certainly an outdated term that is not used in any other IO-related material and should probably be replaced with *psychological operations*. PSYOPS are basically a subset of IO, more precisely its psychological dimension. I will not differentiate between IO and PSYOPS, because I consider a holistic understanding of IO activities to be more useful – whether the *means* employed are technological disturbance or misinformation, the *ends* are the same: persuasion or manipulation.

There are many other forms of information management such as PR, advertising, perception management,[2] propaganda[3] etc. Similarly to these activities, IO is not necessarily illegal, so it can be difficult to distinguish between them.[4] There are four important attributes that differentiate IO according to my assessment, namely 1) *information systems/ media penetration*, 2) the sender's *intent to mislead* and 3) *the supposed unawareness* of the receiver[5], whom in turn 4) *is supposed to be influenced to act or think in a way that benefits the instigator*.

## 2.2 *Manipulation*

Although I will not focus specifically on "soft" information operations, I have limited the definition of IO to comprise a "willful manipulation". There may be cause to briefly outline the meaning on *manipulation*. Philippe Breton[6] distinguishes between two classes of manipulation: emotional manipulation and cognitive manipulation; both can be achieved by means of the IO techniques described above. The aims of the respective form of manipulation differ, however. Breton argues that one purpose of emotional manipulation is "[to condition the audience so that it accepts the [cognitive] message without hesitation]".[7] This form of manipulation may also be intended to appeal to the audience's sentiments for a certain cause, demagogic seduction appealing to the audience's feelings, fears and prejudices; seduction by rhetoric etc.[8]

Emotional manipulation is usually merged with cognitive manipulation. Cognitive manipulation *frames* the target's perception of reality in a way that benefits the manipula-

1 Libicki 1995, p. 7.

2 It is sometimes very difficult to differentiate between IO and Perception Management as the terms are sometimes used interchangeably. Aso, the term Perception Management is becoming increasingly popular in corporate marketing. However, Perception Management can be understood as the aggregate of those IO activities that are used to achieve the overall cognitive goal as well as the immediate effect of IO (see Riegert 2002).

3 Propaganda is an outdated term in defense strategic discourse. It refers to "the deliberate and systematic attempt to shape perceptions, manipulate cognitions, and direct behavior to achieve a response that furthers the desired intent of the propagandist" (Jowett & O'Donnell 1986, p. 7). In my understanding this term has been almost abolished because it is imprecise and narrow, does not accommodate for IT and the globally networked society; also the word propaganda is extremely value-laden.

4 Riegert 2002, p. 10.

5 E.g. Stütz 2005, pp. 17f.

6 Breton 2000.

7 *ibid*, p. 79 (Author's translation, see original excerpt in **Appendix B**).

8 *ibid*, pp. 81-84.

tor. Breton identifies three main categories of manipulative framing: "[it can either invert the object's discernment of true or false, or direct the factual accounts of an event so that the subject's perception of reality is deliberately distorted; or it can keep some facts and pieces of information concealed in order for the target to accept a given frame.]"[1]

## 2.3 *Gatekeeping*

Gatekeeping is the process of selecting, investigating and vetting, or otherwise filtering information before media publication.[2] Changing media structures, particularly the fragmentation and Internet convergence of traditional media, entails a shift in the traditional gatekeeping role of journalists and editors. Gatekeeping has become challenged and subordinated to other factors of news reporting such as speed and degree of public interest or entertainment value.[3] It seems that in light of the advancing modes of participatory journalism, "[t]he traditional idea of a gatekeeper vanishes"[4][5] and that the role of gatekeeper is transferred to the user.

## 2.4 *Blogs and the Blogosphere*

The blog or weblog is a self-publishing web media consisting of frequently updated entries that are usually displayed in reverse chronological order.[6] The purpose of any blog can range from online public diaries to corporate information, to citizen journalism. 6% of Swedes run a private blog, however, a staggering 52% of young women aged 12-25 reportedly have their own blog;[7] most of these private blogs are documentations of the author's life and experiences, fashion views, etc. The blog genres relevant to this study are mainly political blogs, corporate blogs, warblogs and milblogs; each of these will be addressed in section III.

A blog entry may consist of text, images and other media as well as *hyperlinks*. Links connect different pages and entries within the Web site and to other Web pages. Also, blog entries usually hold commentary entries that in turn may hold follow-up links. Links are the most essential parts of blogs, because without them, especially incoming links, the blog is unlikely to attract visitors. The result of the interwoven links between blogs forms the *blogosphere,* which can be understood as "a virtual universe that contains all blogs".[8] Some blogs are more influential than others and those are referred to as *A-list blogs*; these attract the highest number of readers and inbound links, and they are most often cited in other media.[9] The *A-list* blogs can metaphorically be understood as the tip of an iceberg, a small

1 *ibid,* p. 102 (Author's translation, see original excerpt in **Appendix B**).
2 Hadenius, Weibull & Wadbring 2008, p. 298.
3 E.g. Béen 2010, Karlsson 2006, Singer 2006, Channel 2010.
4 Singer 2006, p. 12.
5 However, McQuail (2000, p. 119) maintains that the gate-keeping role of traditional media in all essence will remain unchanged.
6 Blood 2002, Agarwal et al. 2008.
7 Findahl 2010, p. 47
8 Agarwal et al. 2008, p. 207.
9 Obradovič, Baumann 2009, p. 1.

percentage on a base of the millions of blogs that are referred to as the *long tail*.[1]

While the blogosphere is undergoing an exponential growth[2], researchers have begun to investigate the dynamics and the networked structure of the blogosphere. A similar undertaking will be the main objective of section IV. In the last decade, the number of blogs have increased exponentially and the most prevailing genre in the blogosphere appears to have shifted in light of the September 11 events, from technologically oriented topics such as Web design to politics[3].

An example of the changing nature of blogs is the so-called *warblogs* that appeared in connection to the US-led invasion of Iraq and that have come to receive worldwide attention. While warblogs were originally written by civilian Westerners inside and outside of Iraq and Afghanistan, most of these blogs are now penned by Iraqis or Afghanis themselves, respectively[4]. A variety of the warblog is the *milblog* genre, which is written by military personnel[5]. Warblogs in particular serve as an obvious target of IO, and has indeed been subjected to censorship, intimidation and manipulation.[6]

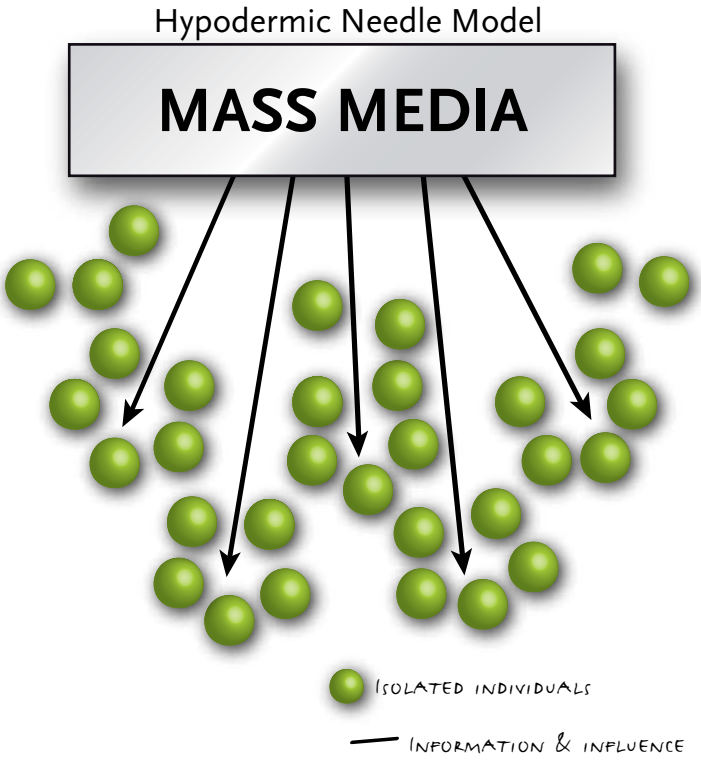
1 *Ibid*.
2 Agarwal et al. 2008, p. 208.
3 Gill 2004, p. 3
4 The fact that only 13% of Iraqi blogs are written in Arabic and 77% in English esuggests that most Iraqi blogs are infact warblogs and that the target audience of these blogs are the global community. (Wall 2004, p. 34)
5 These blogs are in turn subjected to monitoring of the USDoD division "Army Web Risk Assessment Cell" (Wall 2004, p. 39)
6 See Wall 2004, pp. 33.42

# 3. Theoretical Approach to IO Dissemination

In part I, I laid forth the hypothesis that blogs will only be applicable channels for IO communication if we can establish that the message will be effectively disseminated within the blogosphere and from there to other media. Likewise, information operations must use effective communication strategies in all phases, from planning to execution to consolidation. It is crucial then, to construct a theoretical framework through which we can understand IO as well as the blogosphere. In this section I will draw from some widely recognized theories of (mass) communication in order to extrapolate a working hypothesis of effective IO dissemination.

## 3.1 *Conventional IO Discourse: the Transmission Model*

The concept of IO was introduced by the USDoD in the early 1990s but in fact its techniques were hardly novel.[1] The IO methodological "toolbox" seems to draw upon conventional models of mass communication, where audiences are thought of as dispersed passive receivers and the communication process is perceived of as linear. It also appears as if, in many IO models, the receiver is expected to interpret and act upon the final message just as the sender had predefined it, in a cause-and-effect fashion. IO definitions originate from a "hypodermic needle"[2] view of mass media effects, insisting that mass media influence isolated individuals directly without intermediaries.[3] This is hardly surprising, given that IO methods are derived from traditional military doctrines of propaganda and covert deception.[4] The predominant one-directional model of transmission is both incomplete and misleading, for several reasons. Firstly, communication effects depend on *sensemaking*, *interpretation* and *acceptance*; these are complex variables that make the reception of any message difficult to predict. Secondly, they are social activities, usually in interpersonal contexts where symbolic expressions and shared cultural values are equally important to verbal communication. Anthropological studies of communication have concluded: "People do not evaluate stories in isolation but incorpo-




1 According to Riegert (2002: 10) IO was introduced as an easily accessable aggregate of long established information warfare techniques.
2 Rogers 1962/1995, p. 284.
3 Windahl, Signitzer & Olson 1992, pp. 52-53.
4 Tubin 2007

rate them into their already established world views."[1] Finally, the new media is structured in an interconnected way that requires a different approach than does traditional media. Participatory media is based on interaction and interconnectedness rather than the unidirectional information flow suggested by the transmission model. The communication flow of the blog medium is especially complex, "more accurately seen as circular rather than linear"[2].

## 3.2 *Joint Reception, Culture and Sensemaking*

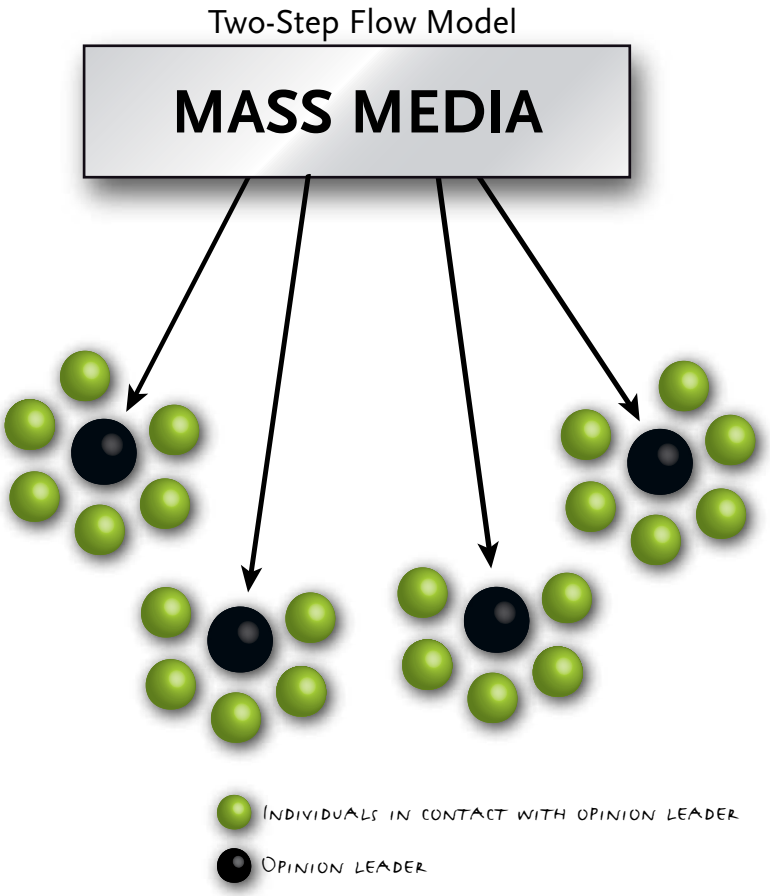
Reception-based models of communication recognize that "the audience" does not form a homogenous mass but is constituted of receivers who may interpret the message very differently from the sender's intention.[3] In the *ritual* or *expressive* communication model, the message is "depending on associations and symbols that are not chosen by the participants but made available in the culture."[4] The same characteristics can be "taken over and exploited (use of potent symbols, latent appeals to cultural values, togetherness, myths, tradition, etc.)" [5] for the purpose of planned communication, and these principles should ideally be applied to information operations. Indeed, it has been shown that an important factor behind the conceived failure of US IO in *Operation Enduring Freedom* was the "failure of intelligence doctrine to address adequately IO support requirements."[6] In essence, the US failed to grasp the characteristics of Afghani cultural, ritual, traditional and symbolic sensemaking systems. Similarly, the Iraqi psychological assault against US forces during the Gulf War failed miserably because Iraqi command misinterpreted US culture; for example, they used "Baghdad Betty" as a spokesperson. Through various broadcasting channels she warned the US troops "their wives and girlfriends back home would be sleeping with Tom Cruise, Tom Selleck and Bart Simpson."[7]

Even though IO messages, like other media texts, do carry dominant meanings, media users will receive and interact with those texts in different ways. The implications for IO effects are obviously that the meaning of a text cannot be predefined because the sender cannot conclude that audiences will react in predictable ways.

## 3.3 *Multi-step Flow Approaches to Blogosphere IO*

The classic two-step flow model presented by Katz and Lazarsfeld in 1955 has been one of the most influential communication theories over the years. It states that "ideas often flow from radio and print to *opinion leaders* and from these to the less active sections of the population".[8]

1 Bird 2010, p. 12
2 Scott 2005, pp. 2-3.
3 McQuail 2000, p. 56.
4 *ibid.* p. 54.
5 *ibid.*
6 Cox 2006.
7 Denning 1999, p. 8.
8 Katz 1957, p. 61.



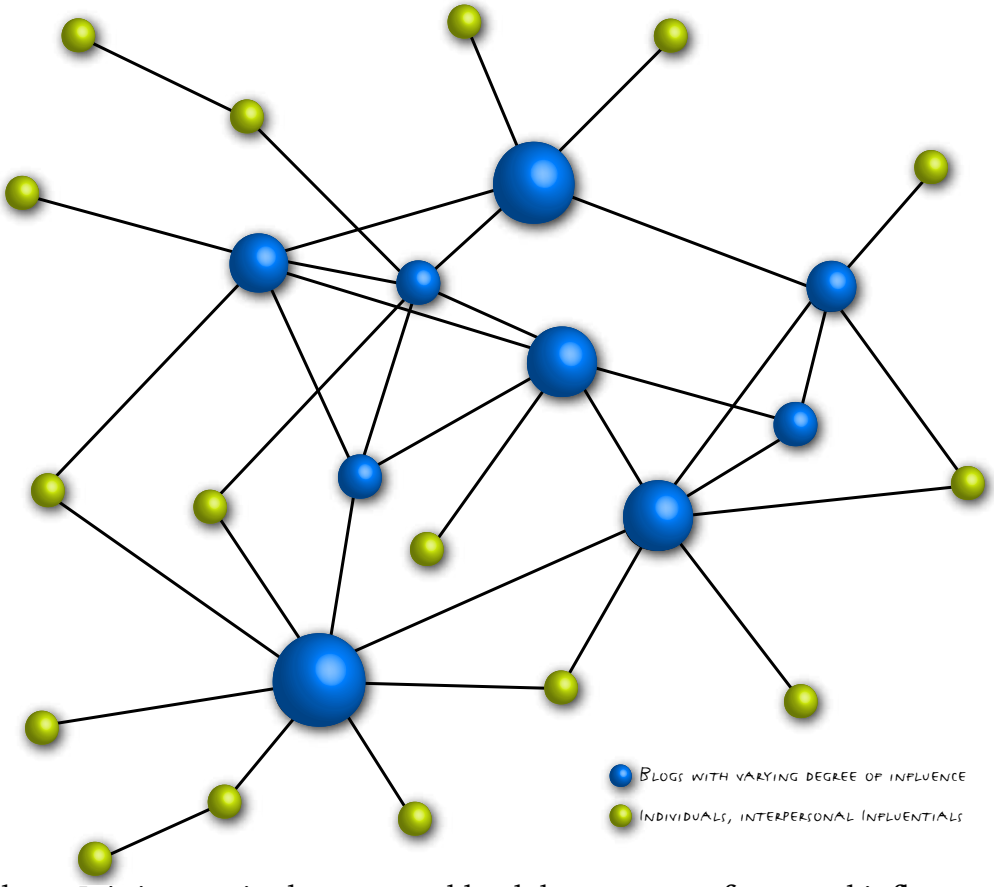

This model overrides the hypodermic paradigm and accounts for the social aspects of mass communication; it entails other levels of communication than the simple unidirectional flow between media and the audience. Nevertheless, the original model of two-step flows has not been without its critics. The emphasis on opinion leaders and their informational dominance over the long tail of "followers" has been especially questioned because, in field studies, news appears to flow "directly to people on the whole and is not *relayed* to any great extent." [1] However, it has been argued that the model applies to *media influence* on opinions and behaviors rather than the relay of information. [2] In 1962 Everett M. Rogers[3] concluded that interpersonal communication is superior in terms of influence: "Mass media channels are primarily knowledge-creators, whereas interpersonal networks are more important in persuading individuals[...]".[4] Such influence is obviously the primary concern of information operations; also, the original two-step flow model and the importance of erudite influencers may prove to be even more relevant in the analysis of blogosphere dissemination.

## 3.4 *Network Flow Models*

Many different systems can be represented as networks: social networks of acquaintances, the five billion aggregate of Internet Web sites, the biological food chain, business structures and commerce, the growth of cities, intra-cellular proteins, etcetera.[5] These different types of networks share the same properties and can therefore be studied with the same methods. Because of the networked structure of the blogosphere it seems natural to build upon theories of network analysis. The network interconnectedness is what characterizes the blog medium: "blogs interact with each other continuously, linking back and forth, disseminating interesting stories, arguments and points of view."[6] By understanding the network of blogs we gain understanding of how a message may disseminate within the

1 Deutschmann & Danielson 1960, qtd. In Troldahl 1996, p. 610.
2 Troldahl 1967, p. 611; Rogers 1962/1995.
3 Rogers 1962/1995.
4 *ibid*, p. 286.
5 Barabási 2009.
6 Farrell & Drezner 2007, p. 17.

The Blogosphere and Network Flow of Communication




blogosphere. It is imperative however, to blend the concepts of personal influence and network theory if we acknowledge that bloggers are increasingly becoming opinion leaders of the Internet medium.

According to Rogers, opinion leaders capture pervasive opinions and relay these within their respective *communication network,* which "consists of interconnected individuals who are linked by patterned flows of information".[1] These opinion leaders are characterized by their central position within the communication networks. It is hardly far-fetched then, to apply network terminology to the blogging phenomenon, with blogs operating as nodes and prominent bloggers functioning as hubs within the complex communication network of the blogosphere.

The main "influentials" of the blogosphere are the *A-list blogs*[2] that relay and reinforce ideas through a communication flow with the rest of the blogosphere, *the long tail*[3]. The long tail blogs are, in turn, opinion leaders within their respective sub-system. Naturally, the "audience" of each blog may have a influential role within a traditional communication network, thus acting as interpersonal opinion leaders in the traditional sense.

The communication networks of blogs rely on hyperlinks. Incoming links are instrumental for gaining traffic[4] while relevant outgoing links are valued by blog readers and produce returning visitors. Indeed, "[l]inks and page views are the currency of the

1 *ibid*, p. 27.
2 Obradovič & Baumann 2009.
3 *ibid*; Agarwal et al. 2009.
4 Blood 2002, p. 98.

blogosphere."[1] In network analysis terminology, the connections between nodes are called *ties*. In the case of social networks these are interpersonal ties while, in the case of blogs they are links. The number of ties to a particular node is its *degree*.[2] The linkage between blogs follows a pattern of skewed distribution where a small number of nodes (the A-list blogs) have a disproportionately large number of ties while the large majority (the long tail) has relatively few ties.[3] This is because A-list blogs are often linked to from other A-list blogs and from the long tail, but A-list blogs rarely link to the long tail.[4]

## 3.5 *Scale-free Networks*

A key question of network analysis concerns the conditions under which a node becomes a central in a network. How does one node become a hub, while others remain in the periphery? There are two partially overlapping approaches to the study of networks. The former approach, based on the study of relatively small-scale networks has sometimes proven useful in MCS but is considered deficient in studying large networks. Farrell and Drezner propose that the blogosphere should instead be studied using recent developments in network topology that is derived from new progress in physics as well as from social sciences: the scale-free network model.[5]

Since the advent of network theory it was assumed that the linkage between network nodes were randomly distributed. If this were a true, then in a blogosphere with, say, 100 nodes and 2000 ties the links would be somewhat evenly distributed and each blog would have 20 links on average. This is not the case because, as was noted earlier, there is skewedness in blog linkage, just as the interconnection in other naturally occurring networks is skewed. The following graph (Fig. 3.5) shows the distribution of incoming links between nodes in the blogosphere – a small number of blogs are evidently central while the larger part is peripheral.

In 1962, Rogers used this approach when studying large group diffusion of innovations. There is a problem with the model however. Granovetter[6] argues that the spread of new ideas depends more on peripheral network members (acquaintances) rather than central persons in the network cluster (close friends). The reason is that the more distant acquaintances have ties to other social circles and can therefore act as liaisons, linking clusters in the network together[7]. The assertion of interlinking liaisons challenged the previous assumption of randomly formed ties: "Because an individual is limited by time and geography, new ties are, to some degree, dependent on old ties."[8] The "random graph theory" was overturned in the late 1990s: systems such as societies or cells could not function "if their

1 Farrell & Drezner 2007, p. 17.
2 Barabási 2009.
3 *ibid*, p. 18.
4 Obradovič & Baumann 2009.
5 Farrell & Drezner 2007; Barabási 2009.
6 Granovetter 1973.
7 *ibid*, p. 1367
8 Tremayne et al. 2006, p. 292.

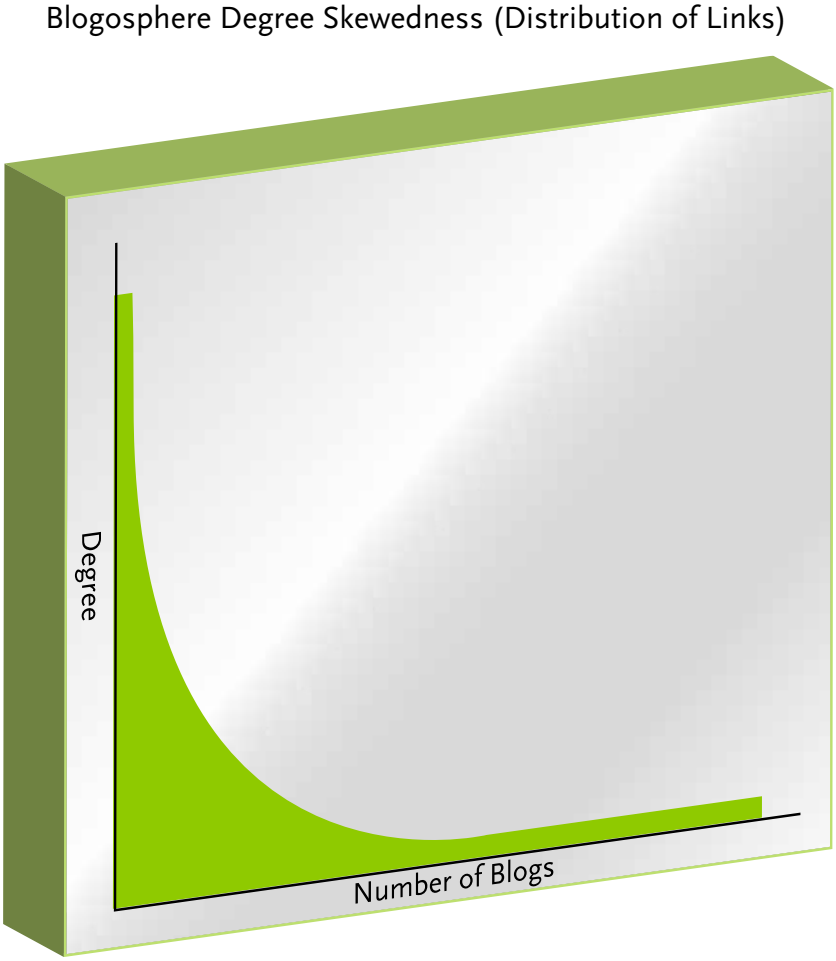



Fig. 3.5 Skewedness of links between blogs. Vertical axis: degree (number of incoming links); horizontal axis: number of blogs.

nodes, molecules, or people were wired randomly together".[1] Barabási, by studying maps of WWW linkage, found instead a nonrandom distribution following a scale-free power-law where the distribution follows a constant degree exponent according to the following formula:

$$P(k) \sim k^{-\gamma}$$

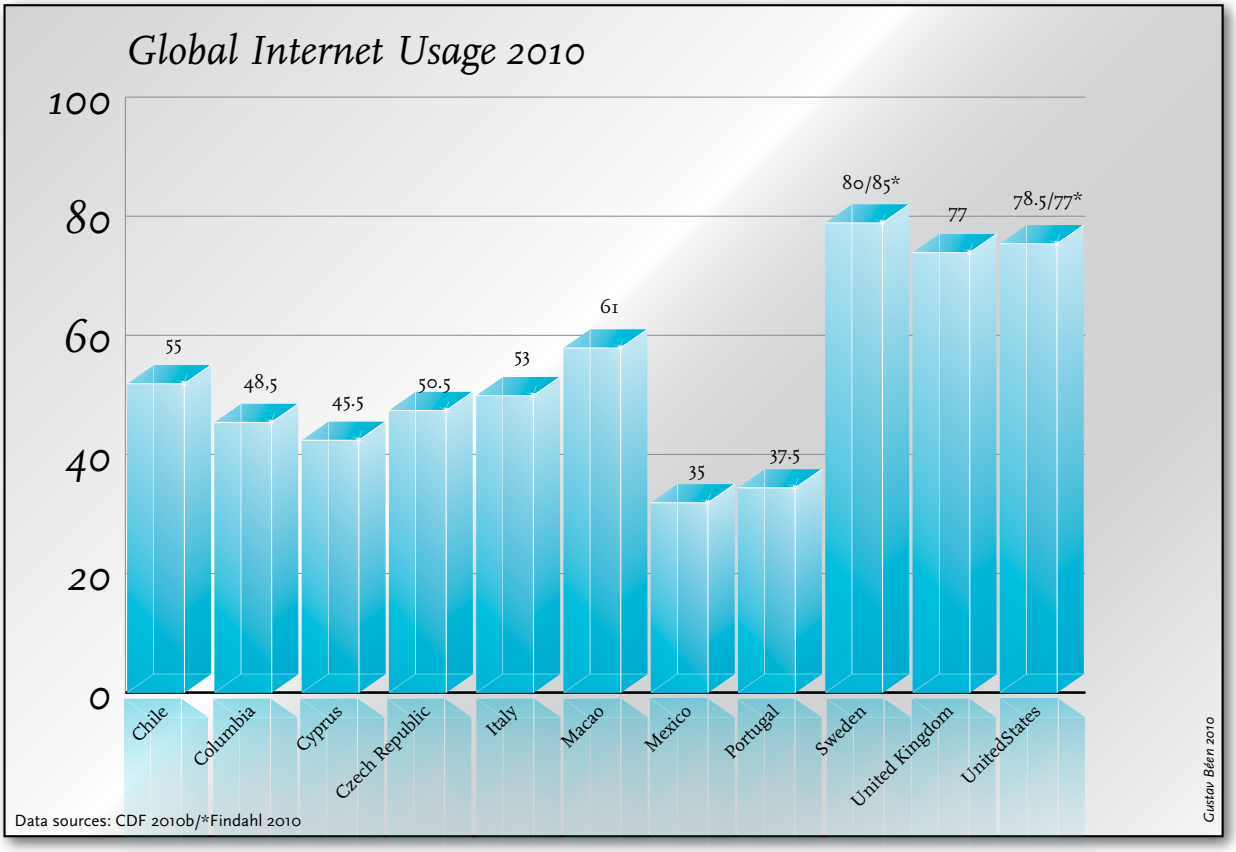
In the case of WWW, P is the probability that a Web page will have a degree k (exactly k number of links) and $\gamma$ is the degree exponent.[2] For the Web as a whole, they found a curve with a degree exponent of 2.1 for incoming links to a page and an exponent of 2.5 for outgoing links from web pages. The factors behind this pattern of distribution were growth and preferential attachment.[3] I will explain these factors further in section V and show how this uneven distribution is crucial for IO dissemination within the blogosphere.

1 Barabási 2009, p. 412.
2 Barabási 2009, p. 412.
3 Tremayne et al. 2006, p. 293.

# 4. New Media Information Diffusion

## 4.1 *Online news experience*

The dominant factor explaining the growth and increased influence of citizen journalism is most likely the general progress of online news. The rapid spread of Internet adoption is incontestable, as illustrated by the findings of multiple research institutes that compile transnational data on the behaviour and attitudes of Internet users and non-users.[1] In addition to online presence, more than 25 percent of Internet users in all WIP countries except for Colombia now go online to look for news at least daily, and more than half go online for news at least weekly.[2] Also, it seems that many turn to the Internet for political news, especially in connection to political campaigns. For example, 35% of the online US population cited the Internet as the leasing source of political news during the 2008 elections.[3]




The above graph clearly show a "digital divide" between More Developed Countries (MDC) and Less Developed Countries (LDC) as to the usage of Internet news media. Still, one must consider that news consumption in general differs between countries and regions. Also, as we shall see, even small percentages may exert a disproportionate effect. It seems safe to say that Internet news is beginning to penetrate the general news consumption on

1 International Telecommunication Union 2010; Center for the Digital Future (CDF) 2010a; CDF 2010b; World Internet Institute (WII) 2005.

2 CDF 2010b, p. 4.

3 Pew Internet and American Life Project 2009, p. 6.

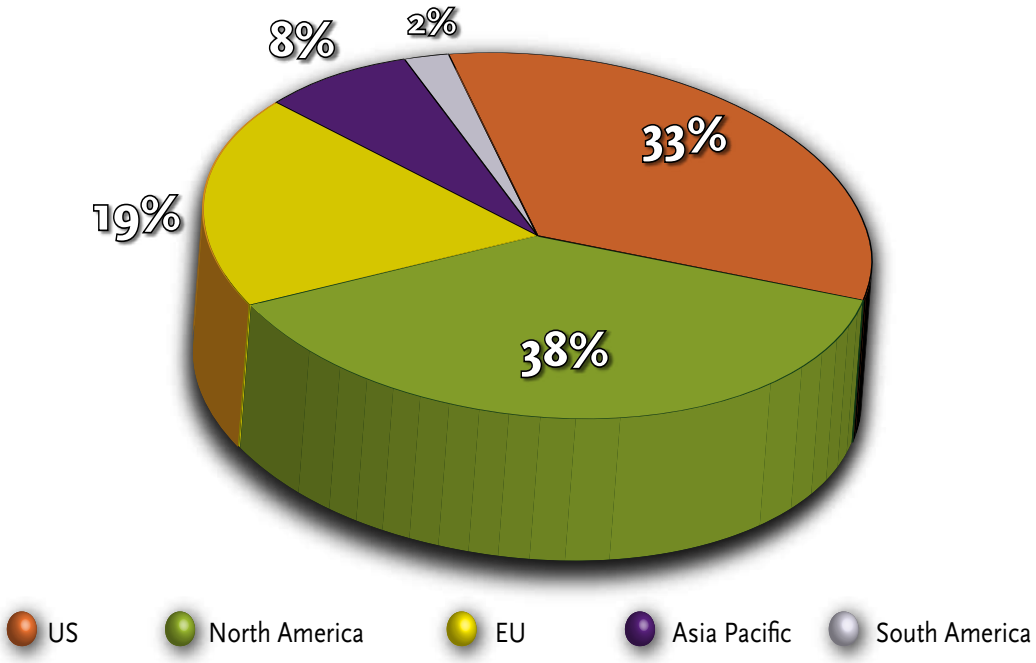
a global scale and is becoming an increasingly important source of information. In the case of MDC, it is apparent that Internet is slowly displacing traditional news media.[1] At present however, it seems that these trends are primarily limited to a subset group of early adopters. Some studies have identified an emerging group of so-called "Online Political Citizens" that are both "netcentric" and politically active; these users, "although comprising only 7% of the population are nearly seven times more likely than average citizens to serve as opinion leaders among their friends, relatives and colleagues".[2]

The disproportionate impact of a few lies at the heart of this study as we enter the realm of blogging because it underlies an important premise for my line argument. The diffusion of an IO content within the blogosphere and from there to other media will, among other things, depend on the influence of the specific blog and its blogger. This blogger will act as a hub within a communication network with direct ties to other influential blogs acting as hubs within their respective network of readers.

In this section I will attempt to confirm my hypothesis that messages can be effectively disseminated through the blogosphere and that blogs do exert a direct or indirect influence.

## 4.2 *The Bloggers and Their Audience*

On page "Online news experience" on page 19, I presented an account of Internet usage in a sample of WIP countries. It is difficult to verify how many of these users also engage in blogs as readers or producers, but the 2010 *State of the Blogosphere* by Technorati[3] suggests the following global distribution of bloggers:




1 Scott 2005, p. 3.

2 Scott 2005, pp. 4-5.

3 Sobel 2010b. The Technorati annual survey of the blogosphere is based on data collected from 7,200 respondents.

The Technorati survey was in English Overall, bloggers within MDC as well as LDC administered in English, which explains the overrepresention of North America. Nonethelss, bloggers within MDC as well as LDC populations populations are reported to be a relatively "affluent group" overall, that are more educated than the general population.[1] Blogs may have one or many authors; some blogs are operated as a full-time occupation – Technorati labels these bloggers "Self-Employeds", or avid "Part-Timers" while the larger part is pursued on pastime basis by the "Hobbyists" that make up 65% of bloggers.[2] A final segment is the "Corporates", representing only 1% in the Technorati survey and consisting of professional bloggers who reportedly "blog full-time for a company or organization".[3] As citizen journalism is increasingly becoming mainstream and accepted as a legitimate journalistic standard by the traditional media, the number of professional bloggers is likely to increase.[4] Professional blogs may be published on news sites and are sometimes written by journalists, but perhaps these blogs cannot be classified as citizen journalism: "some view these professional blogs with suspicion, believing that the only true blogs are grassroots."[5]

## 4.3 *Relative Reach of Blogs*

The blogosphere appears to be undergoing a cumulative growth, doubling in size every five to six months.[6] Technorati has not released updated estimates on the total size of the blogosphere since October 2006 when the number of blogs tracked by the Technorati index had reached 57 million.[7] If the rate of growth is unchanged we can deduce that the blogosphere would presently contain [$(5{,}7*10^7)*2^8$ =] 14,6 billion blogs; however, a substantial portion of these blogs are most likely dormant or so-called "splogs", i.e. blog imitations set up to promote other Web sites.

Not withstanding the exponential growth of the blogosphere, it only has a fraction of mainstream media's reach. An effortless method by which we can measure the relative reach of blogs in general is to compare the reach of high-ranking blogs with high-ranking media Web sites.[8] I built the following blog list from two Swedish blog rank systems.[9] The sampled media Web sites are the six highest-ranking Web sites according from the Alexa ranking system.

1 *ibid.*
2 Sobel 2010a, p. 2.
3 *ibid.*
4 Kinniburgh & Denning 2006: 212.
5 Gill 2004, p 4.
6 Sifry 2006.
7 Sifry 2006.
8 A similar method has been employed by Farrel and Drezner 2008.
9 Bloggtoppen (www.bloggtoppen.se) measures registered blogsites reach and rank these accordingly. Twingly (www.twingly.com) uses a proprietary ranking system that breaks down the 100 most popular blogs per language. Because Alexa can only measure reach at domain level, I had to leave out some blogs that would otherwise be in the ranking list, e.g. "Ledarredaktionens blogg", (http://blogg.svd.se/ledarbloggen).

Highest Ranking Mainstream News Media Websites and Blogs (5+5) in Sweden, Dec. 2010

| Web site | 3-month global reach | Traffic rank in Sweden |
|---|---|---|
| Aftonbladet, aftonbladet.se | 0.15500 | 5 |
| Expressen, expressen.se | 0.06170 | 11 |
| Dagens Nyheter, dn.se | 0.06300 | 14 |
| Svenska Dagbladet, svd.se | 0.03920 | 24 |
| Sveriges Television, svt.se | 0.03080 | 25 |
| Dagens Industri, di.se | 0.03350 | 28 |
| Politiskt Inkorrekt, politisktinkorrekt.info | 0.01080 | 90 |
| Blondinbella, blondinbella.se | 0.00466 | 347 |
| Snaphanen, snaphanen.dk | 0.00112 | 1,245 |
| Posh24, posh24.se | 0.00099 | 1,742 |
| Alliansfritt Sverige, alliansfrittsverige.nu | 0.00050 | 2,243 |
| Svensson, www.zaramis.nu | 0.00051 | 3,535 |
| **Blog average** | **0,00310** | **1,534** |
| **Media average** | **0,06387** | **18** |

## 4.4 *Blog Influence*

The above comparison raises the question how bloggers can possibly exert any influence at all, given their relatively low readership. Building on a study by Farrell and Drezner[1] two key factors can be identified – the first one relates to the uneven distribution of readers that was discussed in Section II, the second is based on the A-list blogs' relation to traditional media. Blogs at the "top" of the blogosphere hierarchy can attract the attention of key-persons in media and politics and thereby frame the medial and political agenda (see p. 26).[2]

As was mentioned in Section III, research has shown that the blogosphere itself resembles a scale-free network. I have constructed the following representation using data from Technorati's 2010 survey (Fig. 4.4). The aggregated curve appears to approximate the power law distribution of visitors just like the distribution of incoming links discussed in Section II, even though it may not completely adhere to the model. Nonetheless, the distribution of visitors is highly skewed, as is the distribution of inbound connections – both favors the A-list blogs.

## 4.5 *Factors Affecting Blog Influence*

It has been shown that blogs hierarchical rating related to its recognition or perceived novelty and relevance, implementation of Web techniques as well as to the blogger's writing skills and credibility.[3] The uneven distribution of readers also the linking practices

1 Farrell & Drezner 2007.
2 Farrell & Drezner 2007, p. 14.
3 Agarwal et al 2008, Farrel, Drezner 2007, Gill 2004, Kinniburgh, Denning 2006.

within the blogosphere, the system known as "preferential attachment" was presented in the earlier section. The general characteristic of a scale-free network is that as it grows, the established nodes that already have many ties gain a disproportionate amount of new connections. "In short, the 'rich get richer'",[1] while the nodes with smaller degree grows more slowly.

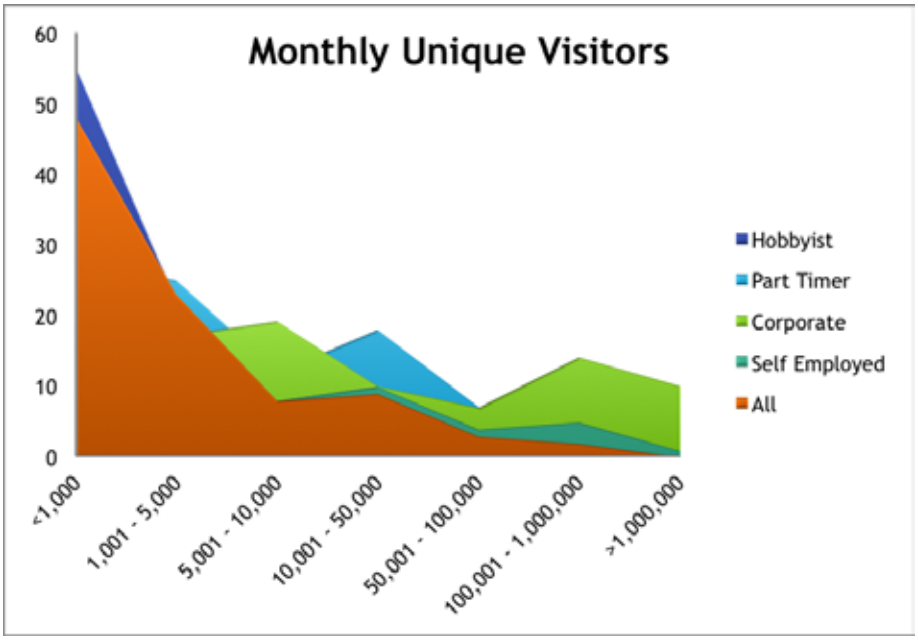



*Fig. 4.5 Number of monthly unique visitors and percent of blogs. The graph supports the model of preferential attachment of scale-free network growth. Blogs grouped according to Technorati's categories of blog engagement.*

## 4.6 *Blog Credibility*

Because confidence in the blogger and the blog's information credibility are imperative factors of blog influence, it is important to identify those factors that contribute to the audience's assessment of credibility. Because individual members of the audience rarely have direct experience of real-world events, especially in times of emergencies, they must rely on messengers' information relay.

The general trust in information on the Internet is however, low. A WII survey showed that approximately 60% of Swedish Internet users trust at least half of the online information but that younger users, between the ages 18-24, generally displayed less trust.[2] Similarly, many Americans express distrust in online information[3] with 61% reporting that "only half or less of online information is reliable", a drastic from the early studies in

1 Farrell, Drezner 2007, p. 21, Barabási 2009, p. 412.
2 World Internet Institute 2005,p. 1.
3 Center for the Digital Future 2010a, p. 2.

2000. 14% now say that only a small portion or none of the information is reliable.

## 4.7 *Factors Affecting Perceived Credibility*

Research suggests that users pay particular attention to design when assessing a Web site's credibility.[1] Another aspect of credibility is a clear and uncomplicated user interface with accessible, relevant information.[2]

Several factors can be laid out that underlay the perceived credibility of the individual blogger:[3]

- Qualifications, competence and life experiences. Can the blogger make claims of authority based on certain proficiency or involvement in the specific subject?
- Eloquence; the author's writing skills.
- Framing of arguments, integrity, objectiveness and "good will". Arguments based on reliable sources and clear deductions are obviously more reliable than arguments that are reasonably illogical or biased. Citizen journalism holds an advantage over traditional journalism because it can make claims of objectivity "good will" based on its grass-root angle of incidence.
- Commitment and predictability. Infrequent postings would suggest a lack of commitment, which is the single most important determinant of perceived reliability according to Warg.[4] There must also be a consistency of genre and focus.
- Networks and personal contacts, i.e. incoming links from influential Web sites, ties to mainstream media or other contacts that are known to the reader may also serve as assurances of reliability.
- Level of interaction with the audience, probably related to commitment as well as the ability to debate and convey one's views.

## 4.8 *The Blogosphere Interacting with Traditional Media*

The blogosphere is increasingly gaining the attention of the general public as well as from the mass media. Evidence suggests that, as politically oriented blogs multiply, there is an "ever-increasing overlap between blogging and mainstream media."[5] Farrell and Drezner[6] maintain that there are pre-existing network connections between journalists and prominent bloggers because the first political bloggers were "journalists with close ties to main-

1 Fogg et al. 2002 qtd. in Kinniburgh, Denning 2006, p. 215.
2 World Internet Institute 2005, p. 5.
3 Kinniburgh & Denning 2006, p. 215-216; Denning, p. 8; Agarwal et al 2008; Béen 2010, pp. 21-22 ; Warg 2000, pp. 59-63; Sjöstedt &Stenström 2002.
4 Warg 2000.
5 Sobel 2010a.
6 Farrell & Drezner 2007, p. 23.

stream media outlets."[1] There is also an extensive crossover between bloggers and the media (bloggers start working as journalists and vice-versa), and it is argued that these connections have helped to lend credibility and authority to the new medium.

Studies have shown that media elites consume political blogs. While an estimated 7% of the general US public read blogs, 83% of journalists use blogs regularly.[2] However, only 11% considered blogs to be "excellent" or "good" sources of news. Apparently then, mainstream media does not devote attention to the blogosphere because it provides a superior news source. I have elsewhere argued that changing structures of the mainstream media and the homogenization of news have resulted in changing journalistic standards with requirements of low-budget articles for freely available online publication, an altered gatekeeping role and a shift towards *infotainment* and *instant news*.[3] Reporters are increasingly being rushed to publish news to the Web minutes after events occur. It follows that journalists must rely on readily available material and less on thorough research. Other factors explaining why mainstream media employs citizen journalism sources are "personal network ties, expertise, and speed".[4] While blogs in general may not provide well-researched, unbiased sources for news, they may offer certain insights and expertize demanded by journalists. More importantly however, is the ability to instantly publish news stories in real-time. According to Farrell and Dreznen this means that "bloggers possess first-mover advantages in formulating opinions."[5] Again, judging from current citizen journalism reports from areas of catastrophe situations, this advantage seems to be apparent in crisis conditions that are otherwise inherently vulnerable to IO assaults.

## 4.9 *Focal Points and Dissemination Through the Three Media Strata*

As was remarked earlier,[6] I do not presume that media published stories in general need be entirely truthful nor objective per definition. At the very least, media can and do frame the social reality in certain ways, consciously or unconsciously. It also constructs "focal points",[7] demarcations in the coverage of any event. Any news story is, in other words, abridged and simplified; we might metaphorically construe this process as an internal "agenda-setting" of the news topics that are already covered. This process in some way limits the range of events that can be reported, which means that those agents who rely on media coverage are equally constrained by the current focal points. Farrell & Drezner[8] argue that, just as "the mainstream media constructs focal points through which political actors must operate, the blogosphere has the capacity to construct focal points through which the

1 *ibid*
2 Dautrich & Barnes 2005 qtd. in Farrell & Drezner 2007.
3 Béen 2010, pp. 16-18.
4 Farrell & Drezner 2007, p. 23.
5 *ibid*, p. 24,
6 p. 12, footnote no. 1,
7 Scott 2005, p. 10,
8 Farrell & Drezner 2007,

media operates."[1] A-list blogs are more likely to create frames for understanding current events, or highlight underreported stories. In the blogosphere communication network the truly influential blogs, the "network switchers", will most likely be responsible for focal points that influence the media.

Scott (2005) cites a seminar by W. Lance Bennett, who suggests a communication model developed for planned communication research, but which proves equally effective for the understanding of successful IO dissemination. Bennett categorizes three layers: "the *conventional* layer of mainstream, mass media, the *middle* layer of prominent blogs, webzines, advocacy groups, etc., and the *micro* layer of email, mailing lists, and personal blogs."[2] According to Bennett's theory, information flows more easily in a downward direction between these layers, i.e. from the higher layers to the lower. [3] In order for a communication strategy to be successful it should ideally penetrate all three media strata. If we relate this theory to Roger's understanding of interpersonal versus mass media broadcasted communication we might develop a more pragmatic view of this theory. It would suggest that the macro layer is responsible for information distribution to the general public as well, agenda-setting. The meso- and micro layers, in turn, develop sensemaking models, interpretations and opinions. According to Scott[4], a blog story's ability to enter the first strata (traditional media) depends on factors of storytelling. Hero, villain, conflict, audience identification with characters, and emotional appeals are all elements of an effective narrative. Journalism, even at its most elevated political discourse, journalism is still about storytelling.[5]

1 Farrel & Drezner 2007, p. 25,
2 Scott 2005, p. 15,
3 *ibid,*
4 *ibid*, p. 10,
5 Herman, Jahn & Ryan 2005,

# 5. Informational Ambuscades

In this section I will discuss two cases of events involving media deception through content injection originating on the Internet. These operations were planned somewhat coordinated in order to achieve certain objectives. The cases, although they do not fall within the IO definition, can be understood as prototypal examples of how a fabricated message can influence, dissolve and transfuse into other media channels.

## 5.1 *"Unedited. Unfiltered. News."*

CNN launched its participatory news site iReport.com in 2006. Some 350,000 users publish news on the site in accordance with the official catchphrase quoted in the title. The stories range from alternative or hyper-local news to breaking stories featured in regular CNN broadcasting.[1] On October 3 2008, a user-published story would come spark an immense controversy. During Wall Street's first trading-hour, an anonymous Internet poster using the pseudonym "Johntw" published the following "news story" on iReport.com:

> Steve Jobs was rushed to the ER just a few hours ago after suffering a major heart attack. I have an insider who tells me that paramedics were called after Steve claimed to be suffering from severe chest pains and shortness of breath. My source has opted to remain anonymous, but he is quite reliable. I haven't seen anything about this anywhere else yet, and as of right now, I have no further information, so I thought this would be a good place to start. If anyone else has more information, please share it.[2]

### Method of Deception

*Covert input of false message through multiple channels.* Earlier that morning, the same story was sent to the influential blog and forum MacRumors.com but its administrator Arnold Kim, after having failed to vet the story, chose not to publish it[3].

### Sender and Objective

The US Stock and Exchange Commission (SEC) started investigations based on suspicions of stock depression by traders and have identified an 18-year old as the story author, however his motive remains unclear.[4] It appears however, as if the whole event was a prank originating from 4chan.org.[5][6]

### Dissemination Process

Although the story was dismissed by MacRumors.com it was picked up on the Web forum 4chan.org where members started promoting it in a semi-coordinated fashion.[7] It spread to the

1 Channel 2010: 20.
2 Blodget 2008; Allan & Thorsen 2009.
3 Sandoval 2008.
4 Scheer 2008.
5 An imageboard forum associated with Internet insurgency, notorious among other things for the "Pedobear" and the hacking of US vice president candidate Sara Palin's Web mail.
6 Frommer 2009.
7 Kim 2008.

aggregate news site Digg.com,[1] with a large number of "digs;" however, users voted the story down, thus keeping it from appearing on the front page.[2] The spread of the Jobs story appears to have developed along the following timeline:

- Soon after 8 a.m. Eastern Daylight Time (EDT) on October 3 2010, the false story was published on iReport.com. It was simultaneously submitted to MacRumors.com, Digg.com and discussed on the 4chan.org forum. It also spread rapidly through other social media, including Twitter: The terms "Steve Jobs" and "Apple" were the two top trending topics on Twitter at the time.[3]
- 9:25 a.m. EDT: The influential news website Silicon Alley Insider (SAI) published an article titled "*Apple's Steve Jobs Rushed To ER After Heart Attack, Says CNN Citizen Journalist*" that referenced the article while asserting that the report had not been vetted.[4] This caused further diffusion of the story to blogs, perhaps losing the disclosures about the story being unconfirmed.
- 9:30 EDT, NASDAQ trade opens.
- 9:41 a.m. EDT: Trading in Apple's stock skyrocketed and in a matter of minutes the share value plummeted by 9% corresponding to almost 5 billion USD market value.[5]
- 9:52 a.m. PDT, SAI updated following an official renunciation from Apple.[6]
- At 10:15-10:20 a.m. EDT, CNN removed the story, referring to the content as "fraudulent". [7][8]
- The Apple stock trade stabilized and recovered but had declined 3% at NASDAQ closing, 4 p.m. PDT.

### Dissemination Analysis

The story seemed to relate with other rumors that had been circulating about Steve P. Jobs' health, fuelling the story's impact. The story began disseminating almost immediately after it was published on iReport but it also appears to have been a coordinated or semi-coordinated event staged by 4chan members. It seems then, that the penetration of one influential participatory news Web site was sufficient to lend enough credibility, in order for the

1 Digg features a system of submitting links to news stories from which it extracts summary news. An important function is that users may vote a story up and down and thereby decide how high the story will be listed.
2 Kim 2008; Sandoval 2008.
3 Siegler 2008; Blodget 2008, Kim 2008.
4 Blodget 2008, Kim 2008.
5 Allan & Thorsen 2010, p. 2; Blodget 2008.
6 Blodget 2008, Sandoval 2008.
7 Blodget 2008.
8 Scheer 2008, Sandoval 2008; Blodget 2008; Allan & Thorsen 2010, p. 2.

message to be disseminate to another news media site. MacRumor blogger Arnold Kim argues that the SAI publication, it provided the story with trustworthiness derived from mainstream media publication[1]. So in turn, the dissemination gained further momentum. [2] As the story continued to spread, all in a matter of minutes, it had gained further credibility, referencing two influential news Web sites, iReport and SAI. CNN states that they do not guarantee the accuracy on the content published on their Web site. SAI in turn, defended their publication by stating: "The Steve Jobs report was the lead story on a site operated by CNN."[3] It is interesting to note that although MacRumor chose not to publish the story, in retrospect, the most effective gatekeeping mechanism in terms of speediness and determination was the user voting system on Digg.com; through a democratic vote of no confidence the false report was suppressed and never reached the front page, which in turn lessened the legitimacy of the story.

## 5.2 *Pol Pots Sweden Visit*

On June 31 1997, the highly influential global news agency Reuters issued a news bulletin stating that the infamous Cambodian ex-dictator Pol Pot had arrived in Sweden to request asylum. The story originated from a fabricated online news agency named Tass.net. The original bulletin stated:

> Pol Pot arrived Monday afternoon to Arlanda Airport outside Stockholm. He was picked up by officials from the Komintern[4] presiding in Stockholm, the capital of Sweden. Komintern has reportedly conducted secret negotiations with Swedish officials to ensure his refugee status ...[5]

### Method of Deception

*Input of false message through fabricated/imitating source.* Prior to the publication, the false news agency had been listed on Internet registers. The name Tass and the Web site design replicated a mainstream news agency. A c/o Stockholm address to the agency in Stockholm was also listed for the purpose of authenticity.[6]

### Sender and Objective

The episode was in fact a gimmick by a newly started Swedish Internet company, most likely a stunt destined to generate publicity.

### Effect

The story produced some negative impact on Reuter's credibility capital, as well as disorder and confusion in the Swedish Ministry for Foreign Affairs, unable to neither verify nor deny the story while the company responsible gained international attention. A similar operation could potentially have caused great damage, e.g. in the process of international

1 Kim 2008.
2 Kim 2008.
3 Blodget qtd. in Sandoval 2008.
4 International communist organization founded in Soviet 1919 and officially disbanded in 1943.
5 Leth & Thuren 2000, p. 25.
6 Leth & Thuren 2000, p. 26.

negotiations.

### Dissemination Process

A journalist at Reuters has apparently picked up the story, mistakenly assuming that it originated from the Russian news agency ITAR-TASS. The "news" disseminated through Reuters to mainstream media around the world until Reuters was able to repudiate the report.[1] Swedish media did however not report the story in its newscast. The following day, Tass.net issued another bulletin, stating that the Swedish Ministry of Foreign Affairs was unable to deny the story, and that Pol Pot had officially communicated that the account was true.[2]

### Dissemination Analysis

In this case, the successful information spread was apparently caused by human error. It is notable that the Pol Pot story was not immediately discarded as false. It is not likely that Sweden would consider welcoming Pol Pot and granting him asylum; also, Pol Pot had been hiding from public view for many years. Komintern had been derelict since 1943. Still, we may recall that information credibility, as was noted in Section III is in part determined by the visual appearance of the broadcast channel. This phenomenon appears to coincide with research on cognitive mechanisms; it has been shown that fabricated visual information can produce people's beliefs and memories.[3] Studies have shown that fabricated visual information can influence people's beliefs and memories and even produce false recounts of events. Although this incidence has become a classic example of media manipulation it seems that, in retrospect, its impact was relatively insignificant. The story did indeed disseminate rapidly but so did the official rejection, thus the falsified information was transitory. A reasonable conjecture would suggest that the reason is the information flow was restricted to established channels upheld by gatekeeping systems. This was before the blog era; today, the information would most likely have disseminated much more extensively and remained on various blogs, forums and fluctuated in terms of credibility and impact.

## 5.3 *Summary*

These cases have two important features in common: they all disseminated on the Internet and they both depended on mainstream media in order to achieve substantial effects. In the case of the phony Jobs story however, the main media appears to have been SAI, which is influential but cannot be classified as "traditional media". It appears then, that whereas the blogosphere alone has a limited reach and is generally considered to be less credible that traditional media, its information can penetrate other media channels and this penetration positively related to the possibility of the information effect. In the following section I will present a suggestion on how this relationship might be demonstrated.

1 Leth & Thuren 2000, p. 25.
2 Furustig 2005, p. 54f.
3 Wade, Green & Nash 2009.

# 6. Conclusion

Following important citizen contributions to news-gathering, e.g. footage and first hand witness reports from the 2004 Indian Ocean tsunami, the killing of Neda Agha-Soltani in Iran 2009 as well as the Haiti earthquake in 2010, media networks have become proactive in soliciting citizen created content.[1] As has been noted by Simon Cottle[2] citizen journalism "now assert[s] [its] presence *outside, through,* and *within* today's mainstream news media". While the Steve Jobs news event originated in the realm of converged produsage-professional news media, it was nevertheless redistributed *outside* traditional media channels. It is difficult to imagine the impact had the story managed to slip through the gatekeeping mechanisms of traditional media networks as well. The increased ripple effect through which the new media impacts the external world through traditional media is also apparent however, and there have been many examples such as the 2006 resignation of the Swedish Minister of Trade, Maria Borelius as a direct result following the unearthing by a private blogger of alleged involvement in an intricate tax-planning scheme.

In short, we have ascertained that the Internet constitutes an increasingly important source of news and information; this is especially true for a small but important group of "online influentials". Within the wider context of citizen journalism I have exemplified how blog and produsage content may have significant impact under certain circumstances. Because produsage news, like other news, purport to describe *reality*, they potentially compose a crucial force in shaping opinions. Finally, the advent of the Network society has entailed new strategic values, new threats and a shift in national security strategies.

We have seen how the skewed properties of the blogosphere have several implications for the dissemination of IO messages. In general, the blogs with the most links are the most influential and will most likely be primary IO targets. One reason for this, as has been noted by Friedkin and referenced by Kinniburh and Denning,[3] is the linkage structure of the blogosphere that makes a well-connected blog accessible, because fewer steps are required to reach that blog from any other position within the blogosphere. This is important because individuals are rarely aware of what happens in a network a few steps away, outside their "spheres of observability".[4] Also, search engines such as Google usually use algorithms that consider incoming links as important variables when ranking websites in search results.

There are three main exceptions to this rule of influence. Firstly, following the concept presented in the Granovetter theory,[5] peripheral blogs may have influential roles acting as "liaisons" between different sections within the blogosphere or even between different media strata. Imagine, for example, how seemingly insignificant blogs administered

1 Béen 2010; Allan & Thorsen 2009.
2 Cottle 2009, p. xi.
3 Friedkin 1983 qtd. in Kinniburgh & Denning 2006, p. 213-215-
4 *ibid.*
5 Granovetter, 1973.

by Iranian immigrants in Europe or US can broadcast reports from Iran in which Internet communication is heavily restricted. That was the case in the aftermath of the Iranian election in 2009.

Secondly, while small blogs generally have a limited ability to become influential, they may quickly gain influence by activating different media strata levels. For this to happen, the story must contain narrative elements of immoral injustice, a protagonist and an antagonist. Thirdly, the blogosphere is highly dynamic, a quality that obstructs reliable identification of influential blogs. In the 2010 study of the blogosphere, Technorati presents the "Top Rising Blogs of 2010" [1]. From the data presented in this study we can resolve a clear manifestation of this dynamic. Technorati annually assigns each tracked blog an authority score based, among other things, on its number of incoming links. Two high-ranking blogs in 2010 are "Vulture" on place 56 and "Buzzfeed" on place number 73. In 2009, these blogs were ranked on place number 1,404 and 14,205, respectively. This suggests that an attempt to disseminate an IO message by creating a new blog is unlikely to be successful in the short term because the process of creating network ties is slow and requires much effort. Even if the message meets other criteria of cogency such as narrative structure, relevancy, urgency perceived accuracy etc., if using a zero-degree network node the sender would be "talking to deaf ears". It can be argued that the Tass.com example that was presented above contradicts this notion, but it is likely that the Pol Pot deception was presented directly to Reuters rather than stumbled upon by the news agency journalist. Moreover, the Internet was very different back in 1997; more specifically, nodes were much less dependent on network connections, and high search engine ranking was more easily achieved because of less online competition.

## 6.1 *Preconditions of IO in LDC versus MDC Settings*

The blogosphere is not constrained by spatial proximity, which means that a Web based IO may originate from any place with Internet access. However, Internet IO may not be able to disseminate as easily in Lesser Developed Countries with substandard Internet infrastructure. In large parts of the world, Internet access is unevenly distributed among the population. In these cases, information operations will depend on diffusion through the two-step flow model. On the other hand, LDC societies could possibly be more vulnerable to blog IO than MDC, given that the range of political blogs may be quite small and thus the local section of the blogosphere would be more easily penetrated; if successful, dissemination to traditional media would presumably be more easily achievable because these blogs would constitute relatively important focal point. This can be coupled with fact that the local mass media communication will most likely be more in line with the communication flow models than the network communication models, i.e. segments of the population may be illiterate or have limited access to mainstream media and be more dependent on opinion leaders

1 Sobel 2010d.

whom in turn are more likely to use Internet as a means of retrieving news information.

## 6.2 *New Media Network Flows and IO Dissemination*

I have deviced a theoretical model through which we may analyse the diffusion of information throughout the blogosphere; this was motivated by the ambition to translate the structure and processes of the blogosphere to other new media and to the interconnected interpersonal communication. I have theorized that the network flow model of communication becomes even more relevant as it simultaneously depicts the technological and social dimensions of networked communication when hardware, software and wetware[1] in practice become inseperable for the purpose of analysis. But how does the networked structure of "new" media impact our understanding of information operations? In order to answer this question I must return to the concept of mediated globalization. The process of globalization has entailed the transformation of space-time through networks of flows, a "placelessness"[2] of communication and social relationship. Indeed, Anthony Giddens defines the concept of globalization as "the intersection of presence and absence, the interlacing of social events and social relations 'at a distance' with local contextualities"[3]. In order to maintain "displaced" or "placeless" social relations, the technological media of horizontal communication thus becomes an integrated if not transparent component of the human networks. The new media holds a key advantage, because it can incorporate functions from both vertical and horizontal media. Micro-audiences within interpersonal communicative contexts merge with meso-audiences such as blog readers, conference attendants or concert-goers; all of these merge with the macro-audiences of the mass media. Because messages disseminate more effectively through the macro- and micro-levels of the media strata and because opinions form on the micro-level, the crucial component of IO vulnerability lies in the progression towards the dominance of the mediated interaction over the nonmediated experience.[4]

In order to analyze the concept of IO from a MCS perspective we must abandon the concept of vertical transmission of information. I have argued that the transmissive view based on a hypodermic model of communication does not account for the crucial aspects of sensemaking and interpretation in the communicative process. Beyond this however, is the overall difficulty in separating between vertical and horizontal processes of communication as they become progressively integrated. Finally, information can emanate from any level of the media strata and disseminate from there to any other or all other levels.

These arguments may be summarized in the following points that supplement the existent definitions of IO:

- The communication process involved in the implementation of an IO can neither be understood as vertical nor horizontal. IO content will dissemi-

1 I.e. the human brain.
2 Coined by E. Relph, 1976.
3 Giddens 1991, p. 21.
4 The dicothomy of mediated/nonmediated is developed in Thompson 1995.

nate and most likely travel in a two-dimensional direction, i.e. through interpersonal and semi-vertical or vertical channels of communication. It follows that the communicative effects of an IO most likely cannot be contained to any specific network.

- The reception of IO content is, similar to its dissemination, unpredictable. It is contingent on several contextual factors of interpretation, interpersonal sense-making and other aspects of perspective and culture.
- An IO activity may be set in motion through technical, psychological, mediated or non-mediated interventions but will shift form through dissemination, a circumstance that may obstruct tracing of its origin.
- The dissemination of IO content depends on factors of perceived source reliability outlined above. It also depends on immediacy and relevance of the message.
- While military definitions of Io emphasize the dualistic relationship between IO defense and assail, this in fact does not refer to the techniques employed but the military context; this aspect can therefore be excluded from an academic IO analysis.
- I will not imply that media in its unaltered state is entirely truthful or objective; I believe however, that there is an obvious discrepancy between media skewedness, dominating discourse and tortious penetration of media systems.

*Information operations consist of an array of activities directed towards a segment of a mediated communication network. These activities are intended to modify the mediated flow of communication through the injection, alteration or blocking of a communication message, in order to yield a cognitive or emotional responsive effect in the subject's (collective) mind; the fundamental objective is to influence the subject's decision-making in a somewhat predefined way. The IO content may propagate throughout different levels of the media strata. This process of dissemination may coincide with the overall objectives of the agent or result in blow-back effects.*

## 6.3 *Societal, Medial and Individual IO Readiness*

SAF has identified the main processes of IO defense, these include: detection, prevention, informing, protection and safeguarding.[1]

### Detection

A successful safeguarding requires active gatekeeping at as many levels of communication as possible. This requires that media networks prioritize high standards of publication and source criticism. Secondly, it depends on responsible bloggers or in at the very least some responsible users that at least some of them so that erroneous information can be quickly

1 Försvarsmakten 2008, p. 124

contradicted and alert others. This was, as has been noted, the case of the Jobs story on Digg.com. Finally, there must be exist some level of "mental gatekeeping" in the individual citizen's mind. A rule of thumb states that "[each source in who would stand to gain from lying or otherwise distorting the truth must also be suspected of doing so.]"[1] I do not believe that most people would trust a posting on a random blog or participatory news site, but because stories can slip through, there must be an equal amount of source criticism when facing the other media strata. In the words of blogger Arnold Kim:

> People post random crap — much of which could be fake or made up — but you know this when you read a site like that. You do *not* take these reports at face value. But, if you run a prominent and influential site, [...] just by posting it, you add credibility to it.

### Prevention

In some ways citizens of the media-centric world have an unprecedented mental training in source criticism, accustomed to sort out irrelevant information in a constant stream of media communication. Breton postulates that modern societies are made up of an "[overly educated public]"[2] that has been so exposed to manipulation from marketing communication that it has developed a citizen gatekeeping.

It must be the case that citizen involvement through participatory journalism greatly improves individual consciousness of source reliability and information bias. IT has created new means of linking to original documents, technologies that could provide an unprecedented possibility of transparent sources in news production.[3] It has in fact been suggested that *transparency* be adopted as a new journalistic standard.[4] This could entail an increased citizen contribution to the news process as well as transparent media organization communication the elements behind the news making process. Moreover, news media must openly and clearly communicate any errors that may have been published and what caused it.[5]

### Response: Protection and Safeguarding

Once an information operation has successfully penetrated the blogosphere, the responsive course of action will depend on how soon the operation was detected and the magnitude of the information dissemination up to that point. Information cannot simply be "extracted" from the blogosphere. The problem is not merely technical in nature although it is difficult to withhold information since the sender can effortlessly move between servers. Rather, a shutdown of the message origin could, due to the interconnectedness of information flows in the blogosphere, easily cause the rate of information dissemination from secondary sources to increase, especially in the case of messages that would appear to oppose dominant views.

1 Leth & Thurén 2000, pp. 25ff

2 Breton 2000, p. 73 (Author's translation, see original excerpt in **Appendix B**).

3 As an example, this essay uses the DOI source indexing system which allows instant tracking of the original source referenced, see next section.

4 Overholser 2006, Karlsson 2009, p. 7

5 *ibid*

An effective counteraction would be based on preparedness based on constant awareness of significant information flow patterns within the blogosphere. The method would be similar to corporate Issues Management techniques but would be easily implemented. There are several examples of RSS-based and blog-crawling applications that can search and aggregate common keywords. This information would facilitate swiftness in response and the ability to develop strategies by which to counter the effects of a IO.

## 6.3 *Future Implications: Mouse-click Insurgency and Mental Gate-keeping*

The 20th century has been called "[the century of persuasion]"[1] because it involved the emergence of an abundance of sophisticated manipulation techniques. There are indeed many possible adversaries. It is my conviction that citizen journalism and blogging, while offering an uncomplicated method of publishing potentially manipulative information, counteracts this by engaging citizens in a new form of active news media consumption, selecting and contrasting different sources, increasing critical awareness. Simultaneously however, there are some indications of a a different future of gatekeeping. As has been visible in the diffusion of the recent WikiLeaks publications, source criticism appears to have been substituted by content criticism. Voices have been raised in disapproval of the publications and in critique of the content of the disclosures, but there seems to have been little questioning of the accuracy of the material; in this case, source anonymity appears to signify authenticity. WikiLeaks raises yet another vexing question: Do news media take the possible consequences of publication into consideration or is journalism appealing to the old "publish and be damned" slogan?

We have already witnessed the birth of the net-centric society, now about to enter its early teens. The increasingly networked nature of technological and physical communication has had great impact on human culture, but has also changed the threat environment dramatically. It seems probable that new threats are emerging; nations, corporations and private citizens must consequently reevaluate the very nature of mediated information that persist throughout the "human web" of communication networks, and how it relates to the physical world.

1 Breton 2000, p. 65

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## Additional Data Sources

Technorati, www.technorati.com. Alexa, www.alexa.com.

*Citations linked with Digital Object Identifiers (***DOI***) can be resolved at* www.doi.org.

# *Appendix A. Abbreviations*

| ***Abbreviation*** | ***Full word*** |
|---|---|
| App. | Appendix |
| CEO | Chief Executive Officer |
| CDF | Center for the Digital Future |
| CNN | Cable News Network |
| CNO | Computer Network Operation(s) |
| EDT | Eastern Daylight Time |
| EU | European Union |
| EW | Electronic Warfare |
| IT | Information Technology |
| Info Ops | Information Operation(s) |
| IO | Information Operation(s) |
| ITU | International Telecommunications Union |
| IW | Information Warfare |
| LDC | Less Developed Countries |
| LTC | Lieutenant Colonel |
| MCS | Media and Communication Studies |
| MDC | More Developed Countries |
| MSB | Myndigheten för Samhällsskydd och Beredskap (Swedish Civil Contingencies Agency) |
| NASDAQ | National Association of Securities Dealers Automated Quotations |
| OPSEC | Operations Security |
| PSYOPS | Psychological Operation(s) |
| SAF | Swedish Armed Forces |
| SAI | Silicon Alley Insider |
| SEC | US Stock and Exchange Commission |
| SNA | Social Network Analysis |
| SPF | Styrelsen för Psykologiskt Försvar (Former Swedish Psychological Defense Agency) |
| US | United States |
| USD | United States Dollar |
| USDoD | United States Department of Defense |
| USG | United States Government |
| WII | World Internet Institute |
| WWW | World Wide Web |

# Appendix B. Translated Quotations

**Askelin 2006**

”[...]övertyga eventuella motståndare om att inte angripa svenskar[...]”

**Breton 2000, p. 65; p. 73**

”[...]le «siècle du convaincre»[...]”

”Un public trop éduqué”

**Breton 2000, p 79**

Mobiliser les affects semble avoir pour objectif de conditionner l'auditoire de telle façon que celui-ci accepte le message sans discussion.

**Breton 2000, p. 102**

Le cadrage manipulateur connaît trois grandes variations possibles: soit il consiste à transformer un façon ou d'une autre le vrai en faux en réciproquement, soit il consiste à orienter les faits de telle façon que la réalité s'en trouve sciemment déformée, soit il consiste à masquer une partie des faits the telle façon que soient cachées les conséquences de l'acceptation d'un cadrage donné.

**Swedish Government Proposition 1999/2000:86, p. 36**

Informationsoperationer är samlade och samordnade åtgärder i fred, kris och krig till stöd för politiska eller militära mål genom att påverka eller utnyttja motståndares eller annan utländsk aktörs information och informationssystem. Det kan ske genom att utnyttja egen information och egna informationssystem samtidigt som dessa också måste skyddas. Ett viktigt inslag är att påverka beslutsprocesser och beslutsfattande.

Det finns både offensiva och defensiva informationsoperationer. De genomförs i politiska, ekonomiska och militära sammanhang. Exempel på informationsoperationer är t ex informationskrigföring, massmediemanipulation, psykologisk krigföring och underrättelseverksamhet.

**Försvarsmakten 2008, p. 14**

Med informationsoperationer koordineras verkan på informationsarenan genom att påverka data och information i syfte att påverka motståndarens eller andra aktörers agerande, samtidigt som egen verksamhet på informationsarenan skyddas.

**Stütz 2002, p. 7**

Utvecklingen i vår omvärld har under senare år medfört att de säkerhetspolitiska hoten förändrats och nu också inrymmer hot av icke-militär art. Till dessa senare hot hör bl a den psykologiska krigföring i form av informationsoperationer som, i termer av avsiktlig vilseledning, skulle kunna riktas mot vårt land. Hur sådana operationer faktiskt skulle gestalta sig är inte lätt att föreställa sig och förutse. Det empiriska materialet är knapphändigt varför en analys av problemområdet i långa stycken blir både teoretisk, hypotetisk och kanske spekulativ.

**Stütz 2005, p. 16**

"Det moderna mediesamhället är till synes den perfekta terrängen för informationsoperativa bakhåll