

Folke Andersson, Elisabeth André Turlind, Eric Sjöberg, Åke Wiss

# **The Character of Future Conflicts**

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## **Partial Report 3**

**Factors which Shape Power and Mass Movements**

Folke Andersson, Elisabeth André Turlind, Eric Sjöberg, Åke Wiss

# **Framtida konflikters karaktär**

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## **Delrapport 3**

### **Maktfaktorer och massrörelser**

<b>Issuing organization</b> FOI – Swedish Defence Research Agency Defence Analysis SE-172 90 Stockholm	<b>Report number, ISRN</b> FOI-R--0685—SE	<b>Report type</b> User Report
	<b>Research area code</b> 2. Military Defence and Civil Emergency Planning	
	<b>Month year</b> December 2002	<b>Project no.</b> E1418
	<b>Customers code</b> 5. Contracted Research	
	<b>Sub area code</b> 22. Assessment and Operational Research	
<b>Author/s (editor/s)</b> Folke Andersson Elisabeth André Turlind Eric Sjöberg                      Main Author Åke Wiss	<b>Project manager</b> Elisabeth André Turlind	
	<b>Approved by</b> Jan Foghelin	
	<b>Sponsoring agency</b> Swedish Armed Forces	
	<b>Scientifically and technically responsible</b>	
<b>Report title</b> The Character of Future Conflicts, Partial Report 3		
<b>Abstract (not more than 200 words)</b>  <p>Previous partial reports within the project The Character of Future Conflicts have demonstrated the connection between the flow of funds, the growth of organisations and the occurrence of armed conflicts. These reports have also illustrated how cognitive models affect the analysis of the conflicts, whether consciously or unconsciously.</p> <p>This report includes examples showing the connections between territory, technology, the flow of funds, institutions and, above all, self-replicating social processes. These processes are of a type that could constitute the underlying factors for the growth of mass movements and their radicalisation, the arms race in political correctness as well as the emergence of informer-systems. A speculative example is also presented, showing how the phenomena of self-replication could be applied to so-called apocalyptic violence.</p> <p>Some sections of this report describe social phenomena in terms reminiscent of biological processes. The spread of an ideology has for instance been likened to an epidemic. The report claims that this could be more than metaphoric, and that models derived from biological science, such as evolutionary epidemiology, can also be relevant when studying conflicts and their causes.</p>		
<b>Keywords</b> Scenarios, power, institutions, flow of funds, self-replication, territory, technology, social contagion, imitation, ideological movements		
<b>Further bibliographic information</b>	<b>Language</b> English	
<b>ISSN</b> 1650-1942	<b>Pages</b> p. 36	
	<b>Price acc. to pricelist</b>	

<b>Utgivare</b> Totalförsvarets Forskningsinstitut - FOI Försvarsanalys 172 90 Stockholm	<b>Rapportnummer, ISRN</b> FOI-R--0685—SE	<b>Klassificering</b> Användarrapport
	<b>Forskningsområde</b> 2. Utformning av totalförsvaret	
	<b>Månad, år</b> December 2002	<b>Projektnummer</b> E1418
	<b>Verksamhetsgren</b> 5. Uppdragsfinansierad verksamhet	
	<b>Delområde</b> 22. Metod och utredningsstöd	
<b>Författare/redaktör</b> Folke Andersson Elisabeth André Turlind Eric Sjöberg                      huvudförfattare Åke Wiss	<b>Projektledare</b> Elisabeth André Turlind	
	<b>Godkänd av</b> Jan Foghelin	
	<b>Uppdragsgivare/kundbeteckning</b> Försvarsmakten	
	<b>Tekniskt och/eller vetenskapligt ansvarig</b>	
<b>Rapportens titel (i översättning)</b> Framtida konflikters karaktär, Delrapport 3		
<b>Sammanfattning (högst 200 ord)</b>  <p>Föregående delrapporter inom projektet Framtida konflikters karaktär har dels visat på kopplingen mellan ekonomiska flöden, organisationers framväxt och väpnade konflikter, dels hur mentala modeller, medvetet eller omedvetet, påverkar analysen av konflikterna.</p> <p>I denna rapport ges exempel på kopplingar mellan territorium, teknik, finansiella flöden, institutioner och, framför allt, självreplikerande sociala processer av det slag som kan ligga bakom framväxten av massrörelser, radikaliserings av massrörelser, kapprustning i politisk korrekthet samt uppkomsten av angiverisystem. Ett spekulativt exempel ges också på hur fenomenet självreplikering skulle kunna utnyttjas för så kallat apokalyptiskt våld. De modeller och tankesätt som presenteras i rapporten och som ligger till grund för analysen av exemplen, verkliga såväl som hypotetiska, kan bilda utgångspunkt vid den fortsatta framtagningen av scenarier.</p> <p>I rapporten beskrivs sociala fenomen i ordalag som kan föra tanken till biologiska processer. Spridningen av en ideologi har exempelvis liknats vid en epidemi. I rapporten görs gällande att det kan röra sig om mer än bara en metafor, och att modeller hämtade från biologin, såsom evolutionär epidemiologi, kan ha relevans också vid studier av konflikter och konfliktorsaker</p>		
<b>Nyckelord</b> Scenarier, makt, institutioner, finansiella flöden, självreplikering, territorium, teknik, social smitta, imitation, ideologiska rörelser		
<b>Övriga bibliografiska uppgifter</b>	<b>Språk</b> Engelska	
<b>ISSN</b> 1650-1942	<b>Antal sidor:</b> s. 36	
	<b>Pris:</b> Enligt prislista	

## **Abstract**

Previous partial reports within the project The Character of Future Conflicts have demonstrated the connection between the flow of funds, the growth of organisations and the occurrence of armed conflicts. These reports have also illustrated how cognitive models affect the analysis of the conflicts, whether consciously or unconsciously.

This report includes examples showing the connections between territory, technology, the flow of funds, institutions and, above all, self-replicating social processes. These processes are of a type that could constitute the underlying factors for the growth of mass movements and their radicalisation, the arms race in political correctness as well as the emergence of informer-systems. A speculative example is also presented, showing how the phenomena of self-replication could be applied to so-called apocalyptic violence.

Some sections of this report describe social phenomena in terms reminiscent of biological processes. The spread of an ideology has for instance been likened to an epidemic. The report claims that this could be more than metaphoric, and that models derived from biological science, such as evolutionary epidemiology, can also be relevant when studying conflicts and their causes.

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# 1. Introduction

## 1.1 Background and objective

The project, “The Character of Future Conflicts”, was initiated in the spring/early summer, 2000, by the Division of Defence Analysis, which is part of the Swedish Defence Research Agency. The intention was to strengthen knowledge concerning conflicts, social processes and actors that can develop into serious threats against society. The first partial report was published in December 2000.<sup>1</sup> This was followed by the second partial report in December 2001.<sup>2</sup>

The project highlights the connection between the flow of funds and the use of violence, as well as how cognitive models, consciously or unconsciously, affect the interpretation of armed conflicts. During 2002, work focused on studying the connections between territory, technology, the flow of funds, institutions and self-replicating processes. Self-replicating processes are found in a number of contexts, such as in the spread of computer viruses, epidemics in the medical sense, chain letters and rumours.

A characteristic of self-replicating processes is the huge potential to amplify patterns, with the result that an apparently insignificant cause or change can have dramatic consequences. This characteristic can award self-replicating processes a central role in significant, sometimes revolutionary, changes in society. The effects of plague in the 14<sup>th</sup> century and AIDS in recent history are obvious and well-known examples. This report addresses the issue of whether self-replication also constitutes the underlying factor for a number of social processes such as those that enable the growth of small groups into mass movements. If this appears to be the case, then the next issue concerns the mechanisms on which the self-replication of behaviour is founded.

In 2002 the project was conducted by Folke Andersson, Elisabeth André Turlind (project leader), Eric Sjöberg (the report’s main author) and Åke Wiss, all based at the Swedish Defence Research Agency (FOI). Section 3.2 was written by Aaron Lynch, Independent Researcher from the USA, and slightly revised by Eric Sjöberg. The report, excluding Section 3.2, was translated into English by Patricia Murray, Independent Language Consultant. Technical concepts have been developed in an attempt to broaden the way of thinking about the character of future conflicts and possible means of prevention. The concept presented in the appendix to this report has been developed in co-operation with the FOI-project, “Command and Control in Future Warfare”.

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<sup>1</sup> Andersson, Folke, André Turlind, Elisabeth, Görnerup, Emil, Sjöberg, Eric & Wiss, Åke (2000)

<sup>2</sup> Andersson, Folke, André Turlind, Elisabeth Sjöberg, Eric & Wiss, Åke (2001)

## **1.2 Basis and method**

This study has focused on factors which, on the whole, can be associated with slow, not to say insidious, social change. The project group has been inter-disciplinary in character. The range of subject areas embraced neurology, psychology, sociology, history and technology. The report has been based on text and Internet searches, private conversations and a seminar. Chapter 4 constitutes a synthesis of research findings, which have been reported by others in scientific articles or in summaries of such articles. Work has been conducted from a perspective based on evolutionary theories. Hypotheses have been discussed with colleagues inside and outside the project group. Section 2.1 is based entirely on this perspective and way of working hence the absence of references.

The seminar, which dealt with social contagion, took place on 6 September 2002 and was followed by talks with the lecturer, Aaron Lynch. Material from the seminar has been published in a separate report.<sup>3</sup>

## **1.3 Reading guidelines**

This report is structured so that, step by step, it narrows into what may be the key issue concerning the character of future conflicts.

Chapter 2 aims at giving a general overview. Five factors having key significance for the development of power structures and consequently for the origin of conflicts are identified. This simple model can be used as a checklist when analysing both social change and social conflicts, as well as when drawing up scenarios. Some examples are presented to clarify how those factors can interplay.

Chapter 3 focuses on one of the five factors – self-replicating processes. Three scenarios are used to illustrate the very different contexts in which these processes can occur. The chapter deals primarily with circumstances which can favour the self-replication of certain behaviour.

Chapter 4 goes one step further and gives an account of research findings concerning mechanisms on an individual level, which can be the basis for self-replication of behaviour. Knowledge at this level is required in order to determine whether certain models derived from biology, such as evolutionary epidemiology, can have relevance when studying conflicts and their causes.

Chapter 5, Conclusions, returns to the issue concerning the significance self-replication has for social change. The conclusions drawn are speculative but if they prove to be correct can be all the more interesting.

In the appendix we have outlined an intelligence unit dedicated to dealing with the social processes presented.

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<sup>3</sup> Dahlberg, Marcus (2002)



## 2. Five Factors which Shape Power

### 2.1 Factors which change and are changed

In the first report of the project it was assumed that conflicts are about “the rules of the game”. The financial, social and legal rules in society affect every individual’s life. When individuals adhere to the rules, efficient working patterns can emerge, benefiting those involved.<sup>4</sup> Unwritten codes of conduct, denoting group affiliation and regulating group loyalty give rise to *institutions* in the concept’s most basic sense. In more developed institutions roles and patterns of obedience, based on authority, reward and punishment, are established. Institutions constitute one of the factors which shape power.

Institutions can contain and constitute hubs for the *flow of funds*, another factor which shapes power. This is particularly evident in developed institutions such as companies and governmental institutions. The flow of funds contributes to the institution’s power of attraction, since the individual securing a role in the institution also receives a share of this flow. The bigger the flow and the more it branches off, the greater the number of individuals, inside and outside the institution, that can be committed to preserving or expanding the institution. This can be done through the purchase of services, privileges and technology. The resources, on which the flow of funds is founded, can set a limit for the institution’s durability and expansion.

The flow of funds is not the most essential factor in all institutions. Institutions can also be sustained by individuals whose actions are dictated by a strong conviction concerning how the world is or should be constituted and which rules should be followed. When a conviction evokes strong emotional commitment, the individuals act as volunteers, and this reduces the dependence on the flow of funds. Institutions based on conviction are exceptionally capable of lasting and growing if the conviction is founded on a combination of rules, conceptions and patterns of behaviour favouring their own spread. When this is the case we are dealing with *self-replicating social processes*.

Self-replicating processes are of central importance for the development of mass movements as well as for the spread of epidemics. There are in fact striking similarities between these two processes. Characteristics of self-replicating processes are that an insignificant cause can have dramatic consequences and that the processes, once started, are difficult to stop. The spread of computer viruses, ordinary cold viruses, rumours and business ideas are phenomena that have eluded few people. Individuals are perhaps less aware of the role that they play in spreading a myth, attitude or conviction, which can emanate from a friend, colleague or someone else who has aroused attention. The pyramid game in Albania, which led to economic chaos, the fall of the regime and the appearance of a haven for criminal activity within Albanian territory, is but one example of a self-replicating social process having dire consequences for national security.

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<sup>4</sup> Andersson, Folke, André Turlind, Elisabeth, Görnerup, Emil, Sjöberg, Eric & Wiss, Åke (2000)

*Territory* constitutes the fourth factor which shapes power. Precious resources as well as rules and populations usually have a territorial connection, a locality. The fact that a population is gathered within an area is significant for the presence of self-replicating social processes. When the population is divided into various factions standing for mutually irreconcilable sets of rules, these processes can develop into violent confrontations. Furthermore, control over a territory gives control over the natural resources and thus the flow of funds founded on those resources. The value of this control changes with time and is determined by the spread of new *technology*.

Technology constitutes the fifth factor. Technology has significance for the level of wealth attained and thus affects the volume of the flow of funds generated and redistributed. Technology also affects the sorts of institutions that develop and the interdependencies evolving between them. If it were possible to mass-produce solar cells inexpensively in a process akin to printing newspapers, there would be far-reaching consequences. The value of oil would plummet and control over territories with oilfields or the infrastructure used for transporting oil would lose significance, as would political and financial alliances aimed at this control. Military resources maintained for this control would also lose significance, as would the governmental institutions whose legitimacy is based on maintaining welfare by ensuring the free flow of oil.

It is worth emphasising that the above factors to a great extent can be associated with slow, even insidious societal processes. The processes work over several years and can, amongst other things, result in gradually mounting tensions between different groupings and institutions turning into open violence as well as institutions ceasing to function or gaining near enough unlimited power. Some examples are given below, showing how the five factors can interplay in small local conflicts as well as in the formation of the world's strongest institutions. Each example is followed by a short commentary which reconnects to the five factors described above.

## **2.2 The forward shift of power**

In Nigeria approximately half of the country's 120 million inhabitants are Muslims. Muslims constitute the majority in the country's northern areas and it is here that adherents are working for the adoption of Muslim law, Sharia. Being forced to live according to Sharia is perceived by the Christian section of the population as a severe encroachment of personal liberties. A couple of years ago this resulted in an outbreak of violence in which two thousand people were killed. The violence resumed when the Miss World beauty contest was due to take place in Nigeria, in 2002. In a commentary on the contest the fastest growing independent newspaper in Nigeria, *This Day*, published an article in which it was stated that had the prophet Mohammed lived he would certainly have fallen for the beauty queens.

The contest brought the collision between secular Christian and Islamic fundamentalist systems of values to the fore. The contest was supported by the President and was protected by the country's armed organisations. Nevertheless, indignation among Muslim groups against the contest and the article in *This Day* became so great, that the most radical adherents went on to attack one of the newspaper's offices and individuals opposed to the radical Muslim norm. Violent riots

broke out and churches were burnt to the ground, followed by reprisals against mosques. In excess of one hundred people were killed and several thousand were driven from their homes. In this predicament, the President chose to accuse the newspaper, which had expressed a secular opinion, of being responsible for the riots.

The violence was said to be caused by irresponsible journalism which had offended Islam, and the newspaper's publisher was arrested.<sup>5</sup> In practice, this meant that the President conceded to individuals who upheld their values by killing those holding different opinions. Thus, the radical element, by means of the power of their emotional rage and their aggressive behaviour, shifted their position forward. Setting a precedent, the probable consequences of this incident will be that secular journalists in Nigeria will refrain from expressing opinions which could displease the radicals among the Muslims. The newsagents, without whom This Day could not be distributed, are an exposed group in this conflict. The newspaper's future revenues can therefore necessitate the newspaper's content being brought into line with the Islamic system of norms. This, in turn, benefits a continued spread of Muslim norms.

The above incident can be perceived as a number of *institutions* (religious institutions, the office of Presidency, the state's armed organisations, the newspaper) becoming parties in a conflict ultimately concerning which rules are to apply. Indignant adherents belonging to one of the religious institutions incite each other to attack, amongst other things, the *technology* which one of the other institutions, the newspaper, uses in order to spread opinions. Violence is spread by a *self-replicating process* and leads to reprisals. A number of people are killed and others are forced to leave the *territory* in which they have lived. The President, in an attempt to safeguard his position, takes sides against the newspaper, which is the institution appearing to be the least dangerous opponent. Consequently the newspaper cannot count on the President's protection. In addition, it is dependent on the *flow of funds* that the sale of the newspapers creates. In order to avoid ruination, the newspaper is supposedly forced to alter the content of future editions in order to avoid being perceived as provocative by the indignant and aggressive followers of one of the two religious institutions. Consequently, the environment becomes even more favourable for spreading, by means of self-replicating processes, the conceptions which this religious institution stands for.

### **2.3 Undermining of power**

In countries having a weakly developed monetary economy, a single natural resource can account for a significant portion of the state's revenues. These revenues are essential for the payment of salaries. If salaries are not paid or are inadequate, the incentive for government employees acquiring incidental earnings increases and this can result in widespread corruption. Furthermore, the government cannot count on its armed organisations remaining loyal. Having control over that part of the territory where the valuable natural resource is located is therefore a high priority for ensuring the state's functions and long-term survival.

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<sup>5</sup> Pettersson, Christer (2002)

When the natural resource is easy to extract and export, competition with the state for the territory can be fierce. Competition can come from rebel organisations as well as deserted army units. If any of these succeed in gaining control over a part of the natural resource, the state's revenues will diminish and thus, to an equivalent extent, the ability to pay salaries. At the same time, the organisation having control over the natural resource can increase its strength, both in terms of personnel and materials.

In this type of power struggle it is common that rebel organisations recruit child-soldiers, using coercion, in order to increase the organisation's striking power and as a resource for particularly hazardous assignments. Children lacking other means of support and, frequently, kidnapped children are compelled to undergo a socialisation process which turns them into ruthless rebels who themselves kidnap children. The socialisation process includes severe punishment for the display of compassion, and reward, in the form of security and power, for brutality. When children are socialised to child-soldiers over a period longer than one year, their identities become tied to the movement.<sup>6</sup> Adopting this form of recruitment, the movement can grow progressively stronger and consequently gain control over ever-increasing parts of the natural resource. Ultimately they can take over the state's progressively weaker institutions.

The above description is rather like the development in Sierra Leone. The example shows how an *institution*, the rebel organisation, can redirect a *flow of funds* by taking control over a specific *territory*. When the flow of funds is redirected, competing institutions, in this case the government and its armed organisations, are weakened. This creates favourable conditions for the rebel organisation's continued growth by means of *self-replicating processes*, of which the socialisation of child-soldiers is an example.

## 2.4 Consolidation of power

The five factors also apply to internal affairs in the USA. Political stability is attained as a consequence of the constituencies being drawn up so that, in the majority of cases, the outcome is evident in advance. Furthermore the financing of re-election campaigns has a design that favours the official already in power.<sup>7</sup> A gradual shift in the balance of power, in favour of the Republicans, appears to be connected to nationalistic and eschatological conceptions. Nationalism gained strength with the attack on 11 September 2001.<sup>8</sup> The Christian eschatological conceptions, i.e. belief in the biblical myths of the world's destruction and the return of Christ, have spread to such an extent that they now influence the foreign policies of the USA.<sup>9</sup>

The Christian right-wing, which is considered to be the core voters of the Republican Party, has for some years worked closely together with the Israeli right-wing party, Likud. For the Christian fundamentalists, the existence of the Israeli State is a necessary pre-requisite for the fulfilment of biblical prophecies. For this reason the fundamentalists are anxious that the Israeli State be protected from all conceivable threats. This resolution can entice the important Jewish voters from the Democrats,

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<sup>6</sup> Boothby, Neil & Knudsen, Christine M (2000)

<sup>7</sup> Patterson, Thomas (2002)

<sup>8</sup> Lieven, Anatol (2002)

<sup>9</sup> Simon, Bob (2002)

which would increasingly assume the character of an impoverished party for minorities. Thus the Republicans' possession of power could be long-standing.<sup>10</sup>

The example begins with the assertion that *territorial division* and *the flow of funds* have forms, which favour those already in control of governmental *institutions*. A shift in the electorate can be seen and this shift is, in part, a result of certain conceptions spreading through self-replication. The spread has resulted in new patterns of co-operation between institutions, which evokes new decisions and arguments for them. These new arguments and attitudes also spread through self-replicating processes, and in this particular instance the effect can be a consolidation of the possession of power.

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<sup>10</sup> Lieven, Anatol (2002)

### **3. Social Contagion, Conscious Imitation and Coercion**

#### **3.1 Self-replicating processes in focus**

As the heading suggests, the aim of this chapter is to highlight one of the five factors which shape power. The courses of events used as examples have been selected because they differ on essential points. The emergence of Nazism illustrates how conceptions which have long traditions and are widespread can experience a rapid radicalisation, which promotes conformity. The Serbian student movement, Otpor, demonstrates the contrary, i.e. how a mass movement, based on humour, a well thought-out doctrine and resolute commitment can be initiated. The third very hypothetical example shows how advanced technology, available to anyone having enough money, could perhaps be used in order to coerce people to imitate a certain form of behaviour. This example constitutes an advanced technology equivalent to the forced recruitment of child-soldiers.

#### **3.2 The emergence of Nazism**

This section should be regarded as a compilation of hypotheses concerning different selection processes which may have benefited the spread of the conceptions that Nazism stood for and stand for. The processes dealt with below can, of course, be found in many other contexts not having any connection to Nazism. An account of the approach behind the hypotheses is to be found in a separate document.<sup>11</sup>

The pre-war spread of Nazism bears striking similarities to an epidemic and can thus be discussed in terms of the transmissibility, receptivity, and longevity of beliefs. Transmissibility is the rate at which adherents of a belief express the belief to others. Receptivity is the rate at which people being exposed to the expression of a belief go on to adopt that belief. Longevity is the measure of how long an adherent remains an adherent before dropping out or dying. Because much has been recorded about the pre-war Nazi movement and the war it started, it serves as a good example of thought contagions in mass conflict.

The Aryan-supremacy tenets of Nazism gave adherents a convenient and indirect route to self-praise. Directly announcing one's own superiority usually meets with scepticism and dislike. But Nazis could bypass this problem by simply voicing the ideology. Doing so implied both that the adherent was Aryan and that Aryans were "superior." Many people listening to the message were made more receptive by its flattering content. They also realised that they too could indulge in self-praise if they adopted the ideology and started voicing it. This helped the thought contagion spread.

Nazi ideology also led adherents to intimidate people with contrary opinions into silence or reduced willingness to speak. Beliefs about a master race being cheated by inferior races made Nazis angry. The ideology also specified that its opponents

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<sup>11</sup> Lynch, Aaron (2002)

should be ruthlessly and violently defeated. Even in a social setting with only one Nazi present, that one Nazi could therefore intimidate others into silence. Few people would want to have an argument with an angry member of a movement known for its violence, even in the early days when Nazism was a tiny fringe movement. This gave more airtime to the Nazi. The airtime allowed him to advance his views more effectively to any undecided people who were present. Those who converted would eventually find themselves voicing the ideology in separate social settings, and the belief system would spread. The intimidation that came from a hostile ideology thus helped the ideology to spread. As it spread, it became even more dangerous and intimidating to dissenters due to the power of crowds.

The Nazis not only intimidated disbelievers into silence, but in some cases they intimidated people into pretending to believe in Nazism. That added still more voices to help transmit the belief itself. It also caused more people to adopt the idea of feigning Nazism.

The idea of a master race cheated by inferior races also implied that large masses of people needed to be converted in order to stop the superior race from being “victimised.” The ideas did not need to have any truth at all in order to spread this way. The nature of the belief itself is what implied that the belief needed to be retransmitted. Nazism thus achieved a potent mix of peer persuasion, believer retention, and suppression of contrary opinions.

Wearing the swastika further helped spread early pre-war Nazism by provoking people to ask what it meant. The resultant answers to questions then become an opportunity to retransmit Nazi ideology without being perceived as proselytising. In other words, the swastika induced greater receptivity to hearing Nazi beliefs explained. That in turn led some listeners to eventually wear the swastika themselves. After the party became widely known, swastikas conveyed Nazi affiliation without need for explanation. This still helped to spread the idea that there was an advantage to announcing Nazi affiliation. Swastikas may thus have helped spread Nazism even to people who knew what the symbol meant.

Much historical evidence indicates that German Nazism and anti-Semitism were indeed mass movements, rather than collections of terrible orders handed down from above. In particular, beliefs in the intellectual and general superiority of a supposed Aryan race may have spread as mass thought contagions in pre-war Germany.

Once someone gave tentative acceptance to Nazism and joined the movement, the party’s intimidating tactics tended to suppress ideological wavering and dropping out. To drop out could have been taken as a grave betrayal calling for a violent end. This would have added to the longevity of Nazi adherence. A movement grows more effectively when conversion is generally a one-way event.

The conspiracy tenets in Nazi ideology added to the level of Nazi anger, which strengthened its capacity to intimidate opponents into silence. That silence extended to a variety of settings, such as leaving Nazis unopposed in passing out leaflets or inviting people to political rallies. Conspiracy tenets could also have helped the Nazi dismiss contrary beliefs as products of the supposed conspiracy, and the people who held contrary beliefs as either co-conspirators or unwitting conspiracy victims. As with

many grand conspiracy ideas, those held by Nazis conferred refutation-resistance to the ideology. This would have added to the longevity of Nazism in its average host. It would also have further stigmatised non-adherents, thereby adding to the silencing effects of Nazism on non-Nazis. Conspiracy tenets would have made non-Nazis feel further deterred from expressing their own beliefs by the possibility of being regarded as co-conspirators with Jews and other supposedly inferior groups. Easily created and hard for most people to disprove, the Nazi conspiracy tenets intensified the thought contagion.

But the Nazi thought contagion also told its hosts that the fate of the world depended on spreading the ideas. The ideas implied that the Aryan Nazi, being superior intellectually and otherwise, was far more qualified than anyone else to spread his or her ideas. This helped rationalise crimes against anyone who stood in their way, including the murder of people who opposed them politically. Murdering non-adherents tends to raise the relative prevalence of the Nazi belief system, at least in the short run. It also contributes to the intimidation of non-adherents into silence. But less extreme competitive propagation acts, such as defaming or bodily attacking political opponents and disrupting their public presentations, also helped Nazism spread long before Nazis rose to power. A desire to confiscate wealth from Jews and others added a financial dimension of motives for retransmitting Nazism and sabotaging other political movements.

Nazi ideology contained intensely nationalistic ideas from the outset. This gave the movement further emotional appeal, a factor easily seen using noncontagion analysis. Yet a nationalistic emotional appeal was more evolutionarily adapted to spread in some population sectors than others. The sector to which it was most adapted was the large contingent of defeated World War I veterans. And while attracting the war's losers might normally seem disadvantageous in expanding the movement to society at large, these particular losers were the men most capable of violence and intimidation. Therefore, their presence in the movement amplified the belief-system's ability to propagate by intimidating nonhosts into silence or weakened expression. German Communism, in contrast, was poorly adapted to spreading among nationalistic German veterans. It thus acquired less ability to spread by scaring disbelievers into silence.

During the early 1930s, a large unemployed population felt the wealth confiscation motive more acutely, adding to the infectiousness of Nazi anti-Semitism. However, the unemployed also had a good deal of free time for spreading beliefs. For these reasons, the world-wide depression helped decide when the Nazi thought contagion could replicate much faster than the epidemic threshold of infection rate exceeding removal rate.

Financial hardship, which is often cited as the factor that makes conspiratorial, hateful ideologies credible and emotionally attractive, also motivates adherents to retransmit. For example, a desire to announce, "I am not to blame for my poverty" can become an added motive for retransmitting ideologies that formally place the blame on others. Therefore, the financial insecurity that creates a desire to say something positive about oneself may be subverted by thought contagions like Nazism. While financial trouble helps to decide when such thought contagions spread, the actual spreading mechanism is much more complex than a simple



principle that trouble causes Nazism. In this respect, Nazism resembles an influenza virus: though the onset of winter helps set the timing of outbreaks, the weather itself does not explain how the virus spreads.

Some ideological precursors that eventually combined into Nazism may have spread for similar reasons. Anti-Semitism has its origins in the cultural evolution of Christianity. Yet the more extreme pre-Nazi forms of anti-Semitism and nationalism, because they inspired so much anger, also gained propagation advantages by intimidating nonadherents into silence. As with overt Nazism, these earlier forms of anti-Semitism probably promoted feelings of superior belief-spreading qualification on the part of adherents. Once the specifically racist forms of anti-Semitism arose through erroneous nineteenth century biology, they may also have spread by spawning a new form of intimidation that was not possible for earlier anti-Semitism. Anyone who challenged the new racist anti-Semitism could be branded as possibly having Jewish blood, with all the inferiority implications for the racial anti-Semite. For those who did not consider themselves Jewish, it would therefore have been much easier to leave racial anti-Semitism unchallenged, giving it a higher longevity factor. Indeed, an insecure desire to prove to oneself and others that one's blood could not be called "tainted" may have unconsciously motivated racial anti-Semites to voice their opinions more intensely and more often. This would have added transmissibility advantages to racial anti-Semitism over other forms of anti-Semitism.

The wealth confiscation motive would also have intensified proselytism for racial anti-Semitism more than for other forms of anti-Semitism. The most racist forms viewed theft of Jews' possessions as taking or even taking back from the inherently and irredeemably undeserving. So hosts may have felt stronger motives to proselytise racist variants of anti-Semitism as a stronger rationalisation for plundering Jewish wealth.

Ideologies of racial superiority before, during, and after World War II motivated adherents to have more children. Holding such ideologies led believers to conclude that it was their duty to propagate their "race" for the betterment of nation and the world. Because the extra children would have been heavily exposed to the belief systems of their parents, such an effect could have helped spread pre-Nazi anti-Semitism, as well as overt Nazism and other racist ideologies around the world.

As the proto-Nazi thought contagions of extreme nationalism and racial anti-Semitism spread to hundreds, thousands, and millions of people, the odds increased that one of those infected would have exceptional oratorical skills. And the beliefs themselves, by arousing such intense passions, tended to intensify the oratory that eventually flowed from Adolf Hitler.

While extreme "master race" nationalism and racial anti-Semitism enjoyed all these propagation advantages, the ideologies also had an inherent tendency to incite adherents to war once the host population was large enough to control an entire country. This immediately limited and set back the movement in countries forced into alliance against Germany. The intensity of passions arising from the Nazi belief set were apparently so great that Hitler could not resist going to war on multiple fronts, too. This fact ultimately slated him and his movement for military defeat. Therefore, the contagion forces that gave rise to the Führer and his movement happened, in this

case, to bring on a drastic fall in host population as defeated and disillusioned adherents dropped out en masse.

The contagion mechanisms of Nazism serve as examples of how thought contagions spread. The Nazi movement had other contagion mechanisms as well. Overall, this epidemiological analysis does not replace the findings of other established lines of investigation in history, sociology, psychology, and other social sciences. The contagion analysis does, however, cover important aspects of hostile mass ideologies that are not fully addressed in prior social science work. In the case of Nazism, contagion factors that were at work in the pre-war period can be found operating again in neo-fascist movements in Europe, North America, and elsewhere. Nazi contagion factors such as intimidation-enhanced belief transmission can also be seen in the ideologies behind today's mass conflicts.

The long history of Anti-Jewish thought contagions in Europe not only helped start the Nazi movement, but they also helped start the Zionist movement. Under conditions of adversity, many Jews were highly receptive to the idea of forming their own separate nation. Those who accepted this idea probably also felt a need to spread the word to others. Motives for retransmission could include such things as a desire to help fellow Jews. But any Jew who already accepted the idea of Zionism would have also known that the idea needed to be imparted to millions of other Jews in order for the plan to be implemented. That would have increased the desire to persuade others. Thus, transmissibility and receptivity factors combined to spread the Zionist movement – a movement that eventually led to further conflict in the Middle East. By helping to create this movement and raising its retransmission rate, the earlier anti-Semitic ideas thus continue to affect major world events.

### **3.3 Otpor**

The atrocities against civilians, which took place in the former Yugoslavian Republic during the 1990's, are generally considered to be the worst in Europe since World War II. At an early stage the Serbian leader, President Milosevic, was identified as responsible for the atrocities, and economic sanctions were introduced against Serbia. The sanctions weakened the Serbian economy, but violence against civilians outside Serbia continued despite extensive efforts of International Peacekeeping Forces. The conflict received a great deal of attention, with the result that Serbia was regarded as a disgrace in Europe.

The combination of economic recession and international isolation meant that many youngsters, especially students, felt that they did not have a future in Serbia. For them the choice was between emigrating and changing Serbia so that it would once again be considered normal. The latter alternative meant that Milosevic had to be removed. The Serbian student movement, Otpor, which was established on 10 October 1998, soon adopted this objective. Those taking the initiative were half-a-dozen students who had experience of the failed student-protests a couple of years earlier.

On the basis of previous experience, a doctrine was developed, outlining how a new student-movement could emerge and how this could undermine Milosevic's authority.

Central to this doctrine was that everyone in the movement had the task of spreading the political message further, thereby avoiding a hierarchical organisation and its susceptibility to attack from Milosevic's side. Furthermore, those spreading the message would also constitute courageous role models for others to emulate. The message would be presented in the form of funny pranks performed in public, and everyone in the movement would adhere strictly to the use of non-violent means.

The message was that Milosevic's era in power was over. Humour was a means of both gaining attention and undermining the respect commanded by Milosevic. The movement's peaceful character meant that brutal attacks against the students backfired against the regime. When Milosevic stated that the movement was a terrorist organisation, it became clear to everyone that he was untruthful, which led to an overall reduction in confidence in the regime's statements. The students who participated in the pranks were strongly committed and their resolve to reach their goal gained strength from the public sympathy they met. For many youngsters the movement satisfied both a political and a social need.

The followers who were particularly committed and had the most effective slogans recruited most new followers, who in turn used the same slogans and approach. Everyone was allowed to invent new pranks, as long as they remained within the frame-work of the doctrine. This meant that a particularly effective repertoire, adapted to the political environment of the time, was selected and developed further. The successes were noted by foreign state and non-state institutions, including the United States Agency for International Development, all of which, like Otpor, wanted Milosevic removed.

Having operated for barely a year, Otpor received support from the USA, not only financial but in the form of training and campaign material. New followers could now be equipped with cellular telephones and T-shirts, leaflets, posters and spray-cans of paint, in order to spread the movement's symbol. Particularly in the early stages of a movement's development, when the number of followers is still very limited, graffiti and posters are important instruments for communicating its symbol and arousing attention. In later phases this spread is significant for emphasising the movement's proportions and strength.

With time famous people also joined Otpor, which attracted attention and made it easier for those who were doubtful about taking the step to support the movement. Sympathisers included more and more key individuals from within various authorities. These constituted an important complement to Otpor. In secrecy, key individuals made sure that various agreements with decision-makers within the armed forces were put into effect. The armed forces would accept orders from above but, in practice, rather than obey them, would remain passive. And this happened.

Otpor grew to become a mass movement by virtue of the fact that new followers, in turn, recruited new followers. Within two years Otpor had almost 70 000 followers, who constituted the core of the mass demonstration that took place on 5 October 2000. Without Otpor this mass demonstration, which put an end to Milosevic's tenure

of power, would hardly have been possible. However, without the support of key individuals in various authorities, the outcome could have been less successful.<sup>12</sup>

Frequently the perception that it was the USA's bombing of Serbia in 1999 which resulted in the fall of Milosevic is communicated by security policy analysts. The fact that such a perception is spread can provide an indication of and gain significance for the way in which the USA, in particular, will act in future conflicts.

### **3.4 Cortés II**

This section contains an introductory discussion concerning the possibilities open to small actors for achieving extensive results. A scenario follows, which spans several years. Self-replicating processes constitute a spectacular feature at the end of the scenario. However, the majority of the text deals with the series of events that could lead to this spectacular end. The scenario deals with a future equivalent to Hernán Cortés, as far as effect in relation to resources invested is concerned.

On 22 April 1519, Hernán Cortés landed, together with approx. 500 armed men and a number of horses, in what is now Mexico. By means of kidnapping, or at least the taking of hostages, extortion and local recruitment of allies as well as, which later proved to be more significant, the unintentional utilisation of prevailing myths and contagion (smallpox) carried with them, Cortés and his men set about annihilating a civilisation.

The question is whether such a remarkable and terrifying feat can be repeated 500 years later, i.e. in 2019. In order to answer this question, it is necessary, first of all, to establish whether a set of principles exist, i.e. a doctrine, which can provide a handful of people with an almost inconceivable ability to bring about death. One hypothesis is that the following principles could constitute the essential elements of a doctrine for a handful of people:

- Dematerialization
- Self-replication
- Swarming

Dematerialization, in an environmental context, means achieving better welfare while consuming fewer resources. In a military context it can mean that a modest number of precision weapons are used instead of huge quantities of unguided munitions. In a doctrine document, written by two Chinese Colonels, they argue that civil resources available in the intended target area should be utilised as weapons. This is exactly what happened on 11 September 2001.

Self-replication is the process underlying the spread of computer viruses on the Internet and the spread of smallpox in a population. Self-replication also lies behind the spread of ideas and conceptions, in the form of rumours or the imitation of behaviour. Examples include chain letters, the pyramid game in Albania at the end of the 1990's, the emergence of street gangs and genocide.

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<sup>12</sup> Cohen, Roger (2000)

Self-replication means that one can start from next to nothing, which is compatible with the intention to dematerialise, but that this “next to nothing” can grow to a considerable quantity, which constitutes a prerequisite for swarming. Swarming can be used as a principle for overloading various systems.

To summarise, there are three processes or principles, which are very compatible. With those as the basis, the next question concerns the resources with which a handful of people could achieve devastation to the same extent as that for which Hernán Cortés was responsible. Since the example below concerns testing the limits of what could be plausible, there are a number of reasons for limiting the resources to the following:

- < 10 people
- < 100 million US dollars
- < 80 000 kgs of equipment

A handful of people usually means a group consisting of four or five. The devastation of a continent can appear to be a difficult challenge for such a small group. There are, however, three strong reasons for choosing such a small group. The first concerns probability. The probability that a few smart but unscrupulous individuals join forces and develop a lasting alliance is significantly higher than the emergence of a new al-Qaida or a new Aleph (formerly Aum Shinrikyo). The second reason deals with driving forces and motives. The smaller the group, the more bizarre the group’s driving force or motive can be. The third reason is that a small group of this type can be entirely independent but it can also constitute a cell in a larger organisation or be a proxy for a state.

The motive for limiting financial resources to 100 million US dollars is that an amount of this size provides significant freedom whilst being contained within the scope of what certain individuals have succeeded in acquiring over a short period of time, either legally or illegally.

The amount of material has been limited to that which can be accommodated by four standard containers. This constraint is motivated by the requirement that the stock on hand must be small enough to be concealed within the confines of an apparently legitimate business activity.

It is extremely unlikely that a future equivalent to Cortés would appear in the form of a group of people building up financial and technological resources aimed at annihilating a country. It is more plausible that a future Cortés emerges as an unintended consequence of another activity, for example a gang of young and smart but ruthless men looking for quick money. A detailed scenario adopting this premise follows below.

The opportunity of earning quick money appears in the form of a member of such a gang having an acquaintance who has an acquaintance who is a badly paid border patrol guard, in a country being used as a transit area for drug smuggling. This border patrol guard and his colleagues happen to have access to a consignment of

unregistered confiscated drugs. Having low or non-existent salaries, the temptation to sell the consignment is great. The gang bids for the consignment and purchases it.

Now the challenge is finding customers and a discreet way of taking payment for the goods. The people in the gang with computer and financial skills fix this. They seek out computers that have been infected by so-called Trojans, take control of these computers and use them as servers in order to enable covert communication and to publish pages on the Internet, giving instructions concerning the ordering of drugs and how payment should be effected. In order to make it possible for prospective customers to locate these pages, an advertising campaign is conducted at some of the Internet's popular meeting sites, where people can create their own homepages anonymously. The owners of the hijacked computers can be in different countries and are rarely aware that their computers have been hijacked.

In order to avoid being discovered by their competitors as well as the police, the gang intends to deliver the drugs industrially packed by means of domestic mail. What is called for is a secure way of transporting the industrially packed drugs into the country. One way of transporting the drugs and, at the same time, avoiding the middleman is by means of unmanned aerial vehicles. Such vehicles have been developed for a variety of purposes. One type, used as a replacement for weather balloons over the oceans, is capable of carrying a load weighing a couple of kilos and can fly several thousand kilometres. The gang would therefore like to gain access to such craft. Again, one member has an acquaintance that has an acquaintance who, for payment, can steal a couple of craft of this type from a meteorological station.

Now the gang has the resources required to run a very profitable business. The income flows in and the gang receives offers to purchase new consignments from the border patrol guards. With time an alliance also develops between the guards and the smugglers, who are close to the drug producers in the distribution chain. The smugglers sell consignments to the guards, and in this way are better paid than when they constitute a link in a long distribution chain. To avoid discovery of the alliance, the smuggling continues following the same pattern, with the guards' approval. The guards in their turn demonstrate increased efficiency by reporting greater amounts of drugs confiscated. Everything is facilitated by increasing the total production of drugs. At a local level everyone wins, at least in purely financial terms.

When both the gang's market share and access to drugs increase, the gang faces the problem of transporting all of the drugs. The method used has worked well and therefore they would like to continue using it. More unmanned aerial vehicles are required. Since they need about one hundred units, they opt to produce more of them, using the stolen units as the technical basis. The components can, generally, be purchased ready-made, but they themselves must take care of the manufacture of certain parts and the assembly of the craft. Earlier profits enable them to purchase a workshop and the resources required for production. After a number of years the business has expanded so that the gang earns tens of millions of US dollars per annum and has hundreds of small craft at its disposal.

The member in the group having financial skills has organised things so that the money appears to be earned by legal means. To this end a number of IT and biotechnology companies have been created as façades for money-laundering

activities. Money is transferred to the owners, i.e. the gang, by means of arranged share purchases. Part of the profit is used in order to give credence to the façade: laboratories are built, equipment is acquired and staff are employed and work in good faith. Thus the business results in the emergence of a group of ruthless men with substantial financial assets, laboratories which, in principle, facilitate the production of biological agents and unmanned aerial vehicles, which are ideally suited for the dispersal of biological agents.

Just when the gang has acquired resources for further expansion, the conditions change, resulting in the fall of the business idea. The change can be the legalisation of drugs, a new drug outdoing the type of drug which the gang has gained access to, the discontinuation of production in the producing country or that measures taken against corruption hit the gang's suppliers. The gang is now sitting with considerable assets, including a thousand unmanned aerial vehicles, but without a going business. Faced with the choice between simply relaxing with the very considerable wealth they have already amassed or finding a new, even more lucrative and challenging business idea, they opt for the latter.

For the, by now, rather callous men to perceive a business idea as a challenge, it must be capable of producing profits reaching the hundred million US dollar mark. It is actually no longer the profit that is essential but the feeling of succeeding in something big. The new business idea involves the gang pulling off a mass kidnapping in the form of a pyramid game. The idea is that the gang will seize hostages and fit each one with a so-called Colombian collar. This consists of a strap around the neck, securing an explosive charge and equipment which determines whether the charge is to be actuated. The hostages are divided into groups of four and they are instructed that each explosive charge is connected to its own timer. One of them will be detonated after an hour, the next after two hours and so on. In order to survive they must either deposit a large ransom in a designated account, whereupon they will be given a code via the Internet which will enable the removal of the collar, or they must seize four new groups of hostages. They know that the first explosive charge will be detonated after an hour but they do not know which one of them is wearing it. They know that the new hostages can be set free in the same way and furthermore that the ransom for each new hostage will be a quarter of their own ransom. The pyramid game is planned to grow until it includes tens of thousands of individuals.

Once again the gang uses a combination of producing components themselves and purchasing ready-made components in order to mass-manufacture advanced Colombian collars. Each collar is equipped with a built-in pulse measuring device, camera and processor for image analysis and so on, in order to issue instructions to the hostages and automatically check whether the instructions have been obeyed. Certain collars are also equipped with cellular telephones. The collars are packed in groups of four in small bags, which in turn are packed in groups of four in backpacks and so on, to enable efficient distribution when the pyramid game-like kidnapping is underway. Each bag also contains a stun gun in order to make the kidnappings easier.

Having come so far in the planning stage and acquisition of materials, the members are struck by an almost unchecked megalomania. A crime which can give tens of

millions of US dollars appears uninteresting compared with the opportunity to influence the history of the world. Consequently they begin to plan an attack reminiscent of apocalyptic violence. They already have a great deal of resources at their disposal which can be used to this end. However, these resources need to be complemented in order to cope with the new objectives: spreading pest bacteria, in aerosol form, over numerous large cities and at the same time taking measures which obstruct the distribution of antibiotics.

The gang has laboratories in which they can cultivate the pest bacteria and unmanned aerial vehicles capable of transporting the bacteria anywhere. These vehicles can sense the direction of the wind, facilitating optimal spreading. They also have a workshop in which to assemble the spreading equipment as well as special warheads. After spreading its load of biological agents, each unmanned aerial vehicle flies automatically towards a power line and severs this with a specially made warhead. This constitutes one of the measures for creating chaos, which obstructs the distribution of antibiotics. The mass kidnapping, with the aid of the manufactured collars, constitutes another. The kidnapping will most likely create panic, resulting in blocked emergency telephone lines as well as deterring people from going out. The kidnapped individuals can be used as forcibly recruited labour, charged with the task of creating further chaos. For example, they can be forced to place time bombs under parked cars and to create false car bombs.

An attack in line with that described above could also be the consequence of the gang's members joining a religious sect advocating apocalyptic violence.<sup>13</sup> In that case they may believe that the people murdered have been helped towards a better existence.

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<sup>13</sup> Lifton, Robert J. (1999a)



## 4. Research Concerning Imitation and Selection

In particular section 3.2 of this report describes social phenomena in terms reminiscent of biological processes. The spread of an ideology is for instance likened to an epidemic. If the phenomena are examined more closely one might find that the similarities are not just metaphoric. The spread and concurrent radicalisation of an ideology have biological equivalents within the field of evolutionary epidemiology.<sup>14</sup> Another social phenomenon having its biological equivalent is portrayed by people attempting to overshadow each other, for example in political correctness. This phenomenon is called runaway evolution and can give rise to extreme attributes and behaviour.<sup>15</sup>

The idea that evolutionary processes can also pertain to social phenomena is not new, but it is and will, in all probability, continue to be extremely controversial.<sup>16</sup> When Darwin and others launched the idea that evolutionary processes could account for the origin of new species it aroused strong opposition. These thoughts contradicted the predominant worldview and the elevated self-image which religion, its institutions and advocates offered. Despite an abundance of evidence, including experiments supporting the theory of evolution, it is still rejected today by many fundamentalists. By means of legislation they attempt to weaken the position to which the theory of evolution has risen.<sup>17</sup>

A social equivalent to the gene must exist if the theory of evolution is to be of relevance to social processes. A form of behaviour must be capable of being spread, varied and subjected to selection. It is obvious that behaviour can be spread and that this can occur via various processes. Sometimes yawning and emotional states are cited as examples of forms of behaviour which spread as though they were contagious. This behaviour is reflexive. Actions based on the observation of others and preceded by some form of decision can also spread extensively.<sup>18</sup> Financial bubbles constitute such examples. In between there are numerous forms of imitation which are neither based on simple reflexes nor decisions. Learning a native language falls into this range, as do the adoption of different poses and rituals.<sup>19</sup>

It is evident that there is an inherent ability to imitate.<sup>20</sup> This can be seen when newborn babies imitate facial expressions despite the fact that they have never seen their own faces. The transformation of observed behaviour into own brain processes corresponding to this behaviour may very well continue into adulthood, even if the connection is not normally so visible. The existence of echolalia and echopraxia i.e. the involuntary imitation of someone else's speech, movements or body posture, found in cases of dementia and schizophrenia, speaks in favour of this. The phenomena described may indicate that an observed behaviour is automatically

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<sup>14</sup> Ewald, Paul W. (1994)

<sup>15</sup> Colby, Chris (1996)

<sup>16</sup> Dawkins, Richard (1976)

<sup>17</sup> The Economist (1999)

<sup>18</sup> Bikhchandani, Sushil, Hirshleifer, David & Welch, Ivo (1996)

<sup>19</sup> Meltzoff, Andrew N. & Prinz, Wolfgang (Eds.) (2002)

<sup>20</sup> Meltzoff, Andrew N. & Moore, M. Keith (1999)

transformed into patterns of activity in the observer's brain and thus that the observer himself or herself is brought to the verge of carrying out the observed behaviour.

Structures in the brain enabling the above-mentioned transformation may have their origins in cross-wiring between different brain regions.<sup>21</sup> Another basic process is the ability to assess an action before it is carried out. This ability may be the result of a mental simulation.<sup>22</sup> This mental simulation may have the form of a repeated interaction between sensory areas and motor areas of the brain. In this simulation process the neural activity will not result in completed overt behaviour, as the activity does not extend all the way to the muscles. However, the activity in the motor area affects perception as if a movement had in fact been carried out, thereby creating the thought of the action. In reverse, the thought of an action is a virtually completed action. The point is that the observation of someone else's action gives rise to the same activity in the observer's brain as if he or she, consciously or unconsciously, was on the verge of carrying out the action. The discovery of the so-called mirror neurons gives some support to the idea that processes of the type mentioned can in fact occur.<sup>23</sup>

Thus far the study of mirror neurons has been confined to motor activities. It is not out of the question that equivalent processes can also apply to emotions. During the sixties some experiments with monkeys produced results that could be interpreted in this way. In the experiments a monkey in a cage learned that, by pulling a lever, it could receive a reward in the form of food. Having learnt this, the conditions were altered slightly. Another monkey was placed in a cage in proximity and view of the trained monkey. The experiment was subsequently designed so that every time the trained monkey pulled the lever in order to obtain food, the other monkey received an electric shock. The consequence was that the trained monkey stopped pulling the lever and forfeited the food. Of course this could be interpreted as monkeys having a very highly developed sense of compassion. Given the hypothesis concerning mirror neurons, this compassion could be literal. When the trained monkey sees the other one being tormented, the equivalent neurons in the trained monkey are activated so that it also experiences discomfort. Incidentally, it is worth mentioning that the effect was greatest when the trained monkey and the monkey subjected to electric shocks were cage-mates. The least effect was produced when it was a rabbit that was subjected to the electric shocks.<sup>24</sup>

If observed behaviour, including expressions of emotions, produces the same imprint in the observer's memory as though the observer had in fact behaved that way, it is not far-fetched to assume that this behaviour can be revived and re-used. A memory, as is the case in this instance, is generally revived by associations. Associations can be generated by factors in the external environment, for example in the form of a situation arising which resembles that prevailing when the behaviour was observed. Processes of this type have been put forward to provide a possible explanation as to why someone subjected to abuse as a child becomes the perpetrator of similar abuse in adulthood.<sup>25</sup>

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<sup>21</sup> Ramachandran, V. S. & Hubbard, E. M. (2001)

<sup>22</sup> Hesslow, G. (2001)

<sup>23</sup> Di Pellegrino, G., Fadiga, L., Fogassi, L., Gallese, V., & Rizzolatti, G. (1992)

<sup>24</sup> Hauser, Mark D. (2002)

<sup>25</sup> Bråten, Stein (1999)

The essential element in the above reasoning is the hypothesis that a behavioural pattern which has aroused attention is stored in the observer's brain as if the observer had personally carried out the action, or was on the verge of carrying out the action. The stored pattern can be seen as a program module which can be activated by associations. If this reasoning holds true, it implies that the brain stores quantities of these more or less complex program modules, which could constitute the social equivalent to genes.

When an action is performed it equates to a program module being activated to the full. An observer seeing the action usually also sees the outcome of the action. If the observer sees that the person performing the action experiences difficulties, or that the action arouses disapproval, this negative result can be associated with the program module equating to the action. This is because the programme module is also activated in the observer's brain. Repeated observations can supposedly affect these associations so that they are reinforced if the result is always negative.

With this in mind, let us return to the hypothesis that the ability to assess an action before it is carried out is the result of mental simulation. Faced with a situation, the brain will produce, by association, a number of alternative courses of action, referred to above as program modules. The process described, corresponding to learning by observation, results in certain modules acquiring a more negative or positive value than others. This value determines which of the possible alternative courses of action will be selected and transformed into overt behaviour.<sup>26</sup> If the action performed is observed by others, then a program module corresponding to this particular action, but not the alternative actions, will be reproduced and stored in the observers' brains. Thus a fundamental criterion for evolution is fulfilled – differential reproductive success.<sup>27</sup>

The everyday experience that our will seemingly controls the phrases we utter and the movements we perform may be an illusion associated with the phenomenon we call consciousness.<sup>28</sup> A thought-provoking experiment, in this context, was designed whereby a test subject was induced to turn his head involuntarily. The experiment was set up so that certain muscles were stimulated by electrodes in the brain of this test subject. He was not informed of the real purpose for the attached electrodes. When asked why he had turned his head, the test subject always offered an explanation which depicted his behaviour as self-chosen. If we can experience involuntary movements as self-chosen, we may also experience other mental processes as self-chosen, even when this is not so.<sup>29</sup>

The speculative reasoning presented in this paper indicates that it may be the case that behaviour and social environments develop according to the same basic principles as Darwin used in order to explain the origin of species and consequently ecosystems.

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<sup>26</sup> Hesslow, Gernund (2002)

<sup>27</sup> Colby, Chris (1996)

<sup>28</sup> Blackmore, Susan (2002)

<sup>29</sup> Delgado, Jose M. (1969)

## 5. Conclusions

The report elucidates how five factors - territory, technology, institutions, the flow of funds and, above all, self-replicating social processes - interplay, sometimes resulting in the consolidation of power structures. An example is pre-war Nazism, which gained so many followers that they were able to take over the formal institutions by means of democratic elections and subsequently use this authority and these resources to eliminate dissidents and consolidate their power. The Brezhnev doctrine, which can be regarded as a product of communism, had a similar objective. Fear of this kind of institutional and cultural lock-in has in recent times found expression during elections in countries where an Islamic party has gained growing support. Thus, knowledge about the development of mass movements and why they are sometimes radicalised appears essential.

Imitation is the process, which lays the foundations for mass movements. Imitation constitutes such an obvious part of everyday life that its significance is easily ignored. For example we all acquire a native language without choosing it or even reflecting on it. With the same ease we adopt conceptions and behaviour which do not contradict that previously learnt. If there is a dissonance between learnt and new conceptions one of them will be suppressed. Several processes affect this selection, consciously or unconsciously. It is when a set of behaviour gains the advantage in this selection process that a mass movement develops.

Discontent, fear and existential needs are factors which motivate individuals to adopt conceptions generating positive expectations or feelings. The way in which ideas are promoted is significant. Highly committed and decisive role models give rise to highly committed and decisive followers. This tends to facilitate the spread of the behaviour and conceptions that these people stand for. Rapid shifts in values, radicalisation and extreme behaviour as well as an arms race in political correctness may arise out of people's endeavours to outdo each other. As this happens, the level of reference is shifted.

Social behaviour moulded by effective rhetoric can, in certain circumstances, silence the opposition as effectively as weapons. In the so-called war against terrorism any form of collaboration with anyone said to have connections to terrorism can have very severe implications. Ascribing such a connection to someone could easily isolate that individual politically, socially and financially. Another example is currently of interest in Europe; in a secular society upholding religious freedom, it is risky to level criticism at a movement which does not differentiate between religion and politics.<sup>30</sup>

The speculative reasoning presented in this report suggests that it may very well be the case that behaviour and social environments develop according to the same basic principles which Darwin used to explain the origin of species and consequently ecosystems. However, it is not necessary to take this reasoning that far. The models and way of thinking which are presented in this report and lay the foundations for the analysis of the examples used, real as well as hypothetical, can still be applied when drawing up scenarios which meet the needs of the armed forces.

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<sup>30</sup> Anderberg, Thomas (2002)

## 6. Reference List

Where possible, references have been selected that are readily accessible via the Internet. All links verified as being up-to-date as of 10 December 2002.

**Albinsson**, Pär-Anders (2002) Systems Analysis and IT Security, FOI. Information obtained verbally.

**Anderberg**, Thomas (2002) "Religionskritiken kvävs med tystnad", Dagens Nyheter, 12 November 2002, p. B2.

**Andersson**, Folke, André Turlind, Elisabeth Sjöberg, Eric & Wiss, Åke (2001) "The Character of Future Conflicts, Partial Report 2", Division of Defence Analysis, Swedish Defence Research Agency, Sweden, December 2001, FOI-R--0443--SE.

—, Folke, André Turlind, Elisabeth, Görnerup, Emil, Sjöberg, Eric & Wiss, Åke (2000) "The Character of Future Conflicts, Partial Report 1", Division of Defence Analysis, Defence Research Establishment, Sweden, December 2000, FOA-R--00-01822-201--SE.

**Bikhchandani**, Sushil, Hirshleifer, David & Welch, Ivo (1996) Informational Cascades and Rational Herding, An Annotated Bibliography. Working Paper, UCLA/Anderson and Ohio State University and Yale/SOM, June 1996.  
<http://welch.som.yale.edu/cascades/>

**Blackmore**, Susan (2002) "The Grand Illusion: Why consciousness only exists when you look for it", New Scientist, 22 June 2002, p. 26ff.

**Boothby**, Neil & Knudsen, Christine M (2000) "Children of the Gun", Scientific American, June 2000.

**Brooks**, Michael (2002) "Face-off", New Scientist, September 2002, p. 38ff.

**Bråten**, Stein (1999) "From intersubjective communion in infancy: virtuous and vicious circles of intergeneration re-enactment", University of Oslo. Paper presented at "Past and future of the field of psychotherapy at the Millennium change", Aarhus, Denmark, 3-5 December, 1999.  
<http://www.intersubjectivity.com/abstracts.htm>

**Carley**, Kathleen M. (2002) Biografi, Department of Social and Decision Sciences, Carnegie Mellon University, Pittsburgh.  
<http://www.epp.cmu.edu/people/bios/carley.html>

**Center on Social and Economic Dynamics** (2002) The Brookings Institution, Washington DC.  
<http://www.brook.edu/dybdocroot/es/dynamics/default.htm>

**Cohen**, Roger (2000) "Who Really Brought Down Milosevic?", The New York Times Magazine, November 2000.  
[http://news1.bograd.com/english/articles\\_and\\_opinion/new\\_york\\_times/001126\\_who\\_really\\_brought\\_down\\_milosevic.html](http://news1.bograd.com/english/articles_and_opinion/new_york_times/001126_who_really_brought_down_milosevic.html)

**Colby**, Chris (1996) "Introduction to Evolutionary Biology, Version 2", The Talk.Origins Archive.  
<http://www.talkorigins.org/faqs/faq-intro-to-biology.html>

**Dahlberg**, Marcus (2002) "Proceedings from the FOI-Seminar 'Imitation - hot eller löfte'", Stockholm, 6 September 2002, Division of Defence Analysis, Swedish Defence Research Agency, Sweden, FOI-R--0745--SE.

**DARPA** (2002b) "Human ID at a Distance (HumanID)", Information Awareness Office.  
<http://www.arpa.mil/iao/HID.htm>

**Davison**, Malcolm (2000) "Language: no barrier to business", Knowledge Management magazine, July/August 2002.  
<http://www.rightwords.co.uk/lang.html>

**Dawkins**, Richard (1976) "The Selfish Gene", Oxford, Oxford University Press.

**Delgado**, Jose M. (1969) "Physical Control of the Mind: Toward a Psychocivilized Society", Harper and Row.

**Di Pellegrino**, G., Fadiga, L., Fogassi, L., Gallese, V., & Rizzolatti, G. (1992) "Understanding motor events: A neurophysiological study", Experimental Brain Research 91, p. 176ff.

**Ewald**, Paul W. (1994) "Evolution of Infectious Disease", Oxford University Press.

**Gulden**, Timothy R. (2002) "Spatial and Temporal Patterns in Civil Violence: Guatemala 1977-1986", Working Paper No. 26, Center on Social and Economic Dynamics, the Brookings Institution, Washington DC, February 2002.  
<http://www.brook.edu/dybdocroot/es/dynamics/papers/guatemala/guatemala.htm>

**Hauser**, Mark D. (2002) "Swappable Minds", in "The next fifty years : science in the first half of the twenty-first century" edited by John Brockman, Vintage Books.

**Hesslow**, Germund (2002) "Thinking as Simulation of Behaviour: an Associationist View of Cognitive Function".  
<http://www.mphy.lu.se/avd/nf/hesslow/philosophy/ShortSimulation.htm>

—, Germund (2001) "Medvetande som simulering av beteende och perception", I H. Lagercrantz (red) Hjärnan och medvetandet. Nya Doxa, Nora.  
<http://www.mphy.lu.se/avd/nf/hesslow/philosophy/HW-medvet.htm>

**Leth**, Göran & Thurén, Torsten (2002) "Revolutionen i Belgrad 2000 - Fakta och förklaringar i några svenska medier", National Board of Psychological Defence, ISSN 1401-2383, Stockholm 2002.

**Lieven**, Anatol (2002) "The Push for War", London Review of Books, Vol. 24, No. 19, October 2002.

**Lifton**, Robert J. (1999a) "Destroying the World to Save It", Speech before the Los Angeles World Affairs Council, November 1999.  
<http://www.lawac.org/speech/lifton.html>

**Lynch**, Aaron (2002) "Thought Contagion in the Dynamics of Mass Conflict"  
<http://www.thoughtcontagion.com/TCDMConflict.htm>

**Meltzoff**, Andrew N. & Prinz, Wolfgang (Eds.) (2002) "The Imitative Mind, Development, Evolution and Brain Bases", Cambridge University Press.

— & Moore, M. Keith (1999) "Resolving the Debate about Early Imitation", Department of Psychology, University of Washington. From: A. Slater & D. Muir (Eds.), Reader in Developmental Psychology, p. 151ff, Oxford: Blackwell, 1999  
<http://cmbl.washington.edu/meltzoff/publications.html>

**Patterson**, Thomas (2002) "Amerikaniseringen borde bekymra Sverige", Dagens Nyheter, 17 November 2002. The article has been translated by Ingmar Nevéus.

**Pettersson**, Christer (2002) "Oroligheterna fortsätter i Nigeria", Dagens Nyheter, 24 November 2002.

**Ramachandran**, V. S. & Hubbard, E. M. (2001) "Synaesthesia--a window into perception, thought and language", Journal of Consciousness Studies, 8, p. 3ff.  
<http://psy.ucsd.edu/chip/pdf/Synaesthesia%20-%20JCS.pdf>

**Simon**, Bob (2002) "Falwell Brands Mohammed A 'Terrorist'", 60 Minutes, CBS News, 6 October, 2002.  
<http://www.cbsnews.com/stories/2002/10/03/60minutes/main524268.shtml>

**The Economist** (1999) "The origin of the stretch-limo", 21 August, 1999.

## 7. Bibliography

All links verified as being up-to-date as of 10 December 2002.

**Armstrong**, Karen (2000) "The Battle for God", Alfred A. Knopf Incorporated.

**Axtell**, Robert L. (2002) "Non-Cooperative Dynamics of Multi-Agent Teams", Working Paper No. 27, Center on Social and Economic Dynamics, the Brookings Institution, Washington DC, April 2002.

**Bekkering**, Harold, Kerzel, Dirk & Wohlschläger, Andreas (----) "Kognition und Handlung, Imitation"  
[http://www.mpipf-muenchen.mpg.de/CA/RESEARCH/imitation\\_g.html](http://www.mpipf-muenchen.mpg.de/CA/RESEARCH/imitation_g.html)

**DARPA** (2002) "Babylon", Information Awareness Office.  
<http://www.arpa.mil/iao/Babylon.htm>

— (2002c) "Translingual Information Detection, Extraction and Summarization (TIDES)", Information Awareness Office.  
<http://www.arpa.mil/iao/TIDES.htm>

**Demiris**, Yiannis & Hayes, Gillian (2002) "Imitation as a dual-route process featuring predictive and learning components: a biologically-plausible computational model", Institute of Perception, Action and Behaviour, Division of Informatics, University of Edinburgh. To be published in "Imitation in Animals and Artifacts", Chapter 13, MIT Press, 2002.  
<http://www.iis.ee.ic.ac.uk/~y.demiris/mitpress2002.pdf>

**Gabora**, Liane (1997) "The Origin and Evolution of Culture and Creativity", Journal of Memetics - Evolutionary Models of Information Transmission, 1.  
[http://jom-emit.cfpm.org/1997/vol1/gabora\\_1.html](http://jom-emit.cfpm.org/1997/vol1/gabora_1.html)

**Gardell**, Carl Johan (2002) "Al-Qaida – ett medieföretag i livsstilssektorn", Svenska Dagbladet, 22 May 2002.

**Hjärpe**, Jan (1983) "Politisk islam", Förlagshuset Gothia, Göteborg.

**Hooper**, Judith (1999) "A new germ theory", Atlantic Monthly, February 1999, p. 41ff.  
<http://www.theatlantic.com/issues/99feb/germs.htm>

**Hurford**, James R. (2000) "Social Transmission Favours Linguistic Generalisation", Language Evolution and Computation Research Unit, Linguistics Department, University of Edinburgh.  
<http://www.ling.ed.ac.uk/~jim/articles.html>

**Krebs**, Valdis E. (2002) "Uncloaking Terrorist Networks", First Monday, April 2002.  
[http://www.firstmonday.dk/issues/issue7\\_4/krebs/index.html](http://www.firstmonday.dk/issues/issue7_4/krebs/index.html)



**Lifton**, Robert J. (1999b) "Destroying the World to Save It: Aum Shinrikyo, Apocalyptic Violence and the New Global Terrorism", Metropolitan Books, New York 1999.

**Marsden**, Paul (1998) "The Selectionist Paradigm: More Implications for Sociology", Sociological Research Online, Vol. 3, No. 4.  
<http://www.socresonline.org.uk/3/4/6.html>

**Mirsky**, Steve (2001) "A Host with Infectious Ideas", Scientific American, May 2001.  
[http://www.sciam.com/print\\_version.cfm?articleID=000DBEA5-16B4-1C70-84A9809EC588EF21](http://www.sciam.com/print_version.cfm?articleID=000DBEA5-16B4-1C70-84A9809EC588EF21)

**Nesse**, Randolph M. (2001) "Evolution and the Capacity for Commitment", Russel Sage Press, New York.

**Vanechoutte**, M. & Skoyles, J.R. (1998) "The memetic origin of language: modern humans as musical primates", Journal of Memetics - Evolutionary Models of Information Transmission, 2.  
[http://jom-emit.cfm.org/1998/vol2/vanechoutte\\_m&skoyles\\_jr.html](http://jom-emit.cfm.org/1998/vol2/vanechoutte_m&skoyles_jr.html)

## **Appendix: Social Skill – The Social Intelligence Unit**

### **The transparent battlefield as a model**

In studies concerning territorial combat, the vision of the transparent battlefield is promoted. The vision is important because it can constitute the basis of a re-examination of the ways of combat as well as the means chosen. The vision is an intellectual experiment providing for speculation concerning the solution of problems if information, which is currently unavailable, became accessible with the aid of new technology. Speculation need not be limited to territorial combat. The significance of being able to render the social environment transparent is a wider issue. Very often armed conflicts are the culmination of social processes which have persisted for several months or years before receiving media attention.

### **How early can forthcoming news attract attention?**

When media attention is devoted to armed conflicts and other incidents which could have significance for national security policies, reports tend to focus on a few prominent individuals rather than the processes giving rise to their elevation.<sup>31</sup> One reason for this could be that even professional observers have a limited ability, individually, to discover and survey social processes. Another reason could be that attention tends to be directed towards what seems to be most spectacular at that particular moment in time, which is generally an incident rather than the social processes giving rise to it. Notwithstanding the fundamental reason behind the focus on individuals, reports initiated by incidents can reinforce the conception that conflicts are primarily a question of unreasonable leaders and that handling conflicts is synonymous with armed intervention.

The fact that the underlying social processes do not receive attention until they manifest themselves in the form of a mass movement, organisation or incident, thus constitutes one of the obstacles for the purposes of taking preventive measures against conflicts. If social processes could be observed and analysed at an earlier stage, some of the information currently classed as news would instead be seen as anticipated consequences of observed processes. The outline below describes how a unit could acquire an extraordinary capacity for gathering and using information concerning individuals, social processes and structures. It is likely that, with such a capacity, the prerequisites for international efforts of a policing or supervisory nature will change. It is hoped that such a unit can pave the way for new methods of preventing conflicts and other societal problems in the making, using modest means.

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<sup>31</sup> Leth, Göran & Thurén, Torsten (2002)

## Co-operating individuals provide information

The method for obtaining data is based on conversations. Each and every member of the unit tries to talk to as many members as possible of the population to be followed up. This procedure requires that the members of the unit possess highly developed social skills and the ability to conduct structured interviews. In addition the conversation must be conducted in the local language. A unit deployed internationally must be able to speak a number of languages. Since the number of multi-lingual social geniuses in the world is extremely limited, these requirements can seem to render recruitment to the unit impossible. One solution to the problem could be personal translation equipment capable of translating spoken language in real time.<sup>32</sup> Over and above this, the unit could be connected, using telecommunications, to one or more interpreters ready to listen in to and assist during particularly important conversations.

The conversations may provide more valuable information when the contents can be related to individuals. Memorising everything said over the period of a month or several months can be rather demanding. In addition, memorising the several hundred strangers with whom the conversations were conducted requires an exceptional memory. This is yet another reason for using technical aids. In all probability the aid for memorising individuals must include a combination of several biometric systems.<sup>33</sup> This is because individual systems are unreliable when there are a considerable number of people in the environment.<sup>34</sup>

Using a camera and microphone, faces and movement patterns can be recorded, as well as voices. It is an obvious advantage if the camera can be incorporated into special spectacles, which can also serve as a display. Such positioning facilitates a good correlation between image reproduction and visual impression during the conversation in progress. Image and sound are analysed in real time for the extraction of biometric data. This data is instantly compared with previously gathered biometric data, held in the database which the unit member carries around. If the person is already included in the database, notification of this appears in the display.

The contents of the conversations conducted are stored together with other details including time and place as well as biometric data for the person with whom the conversation was held. The contents of the conversation are analysed in real time with regard to the occurrence of words and word combinations which form part of the individual's signature. Furthermore, information is extracted about individuals and social relationships. This information is compared with and tentatively connected to previously gathered information held in the database. When contradicting details are supplied, notification of this appears in the display. Thus, the database can be used to steer the course of the conversation in progress.

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<sup>32</sup> Davison, Malcolm (2000)

<sup>33</sup> DARPA (2002b)

<sup>34</sup> Brooks, Michael (2002)

## Co-operation in networks provides insight

Using the technology outlined above, each unit member becomes highly accomplished at gathering information. A considerable amount of information can be gathered when numerous unit members operate in the same area. However, there is still the drawback that each individual unit member surveys only his/her small sample of the population. When small samples are analysed individually the discovery of networks and phenomena involving less than one per cent of the population can be difficult. A large sample is desirable but cannot be achieved if all information must be communicated manually between the unit members. Using the technology outlined, communication will not pose a problem since all of the information gathered is well structured and stored in digital form.

After each shift the information collected by the unit members is transferred to a single database. Thus, the information is available for statistical analysis and for processing with a view to charting different relationships between the individuals. At best, the conversations provide each unit member with a fragmented picture of prevailing relationships. When the fragments from the entire unit are gathered in a single database and made available for analysis, in the ideal case the outcome can be a complete picture of the relationships within the community. In reality, the result obtained will, to a great extent, be determined by the population's willingness to co-operate. If the unit is deployed in order to investigate disappearances following genocide, willingness to supply details concerning relationships will probably be considerable. In other situations the contrary can be expected.

When a unit member starts a new shift, all the information contained in the single database is copied into the database which the individual unit member carries around in the field. Thus, each individual member benefits from the unit's collective memory. In concrete terms, this means that a unit member can look at a person whom he or she has never seen before, and yet know who the individual is. The personal particulars and biometric data collected by another unit member enable identification. The display indicates that the individual is known. If applicable, other available details concerning the individual are presented in the display or via an earpiece. This information can be used, for example, for targeted collection of relational data. Another use, which has been suggested, is that this function be used in order to draw the unit member's attention to bands of individuals belonging to a certain grouping.<sup>35</sup> In critical situations, such a band can be an indication and forewarning that something is brewing.

The statistical analysis of all information gathered is thought to facilitate the early discovery of phenomena spread through imitation. Rumours, conceptions, pyramid games and movements organised into cells constitute examples of such phenomena. When this information is combined with information concerning relationships, it might, in certain cases, be possible to trace the source. The statistical analysis also shows changes having other causes than imitative processes. In addition, the analysis may pertain to data collected with the task of investigating disappearances following genocide. The statistics concerning disappearances and murder can be used to

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<sup>35</sup> Albinsson, Pär-Anders (2002)

deduce the underlying instructions for the use of violence in a civil war, according to one hypothesis.<sup>36</sup>

### **Wild speculation**

The above reasoning is, to say the least, speculative. It is based on the assumption that development of the technology to support the gathering of social information is possible. It also assumes that the technically well functioning unit also functions socially and therefore obtains the information sought. These assumptions should, of course, be treated as intellectual experiments of the type mentioned initially. One of the decisive questions is whether theoretical models for social processes exist, which can make good use of the information that the unit is presumed capable of supplying. In this context there is reason to keep an eye on research being conducted at Carnegie Mellon University, concerning networks.<sup>37</sup> At The Brookings Institution research is being carried out regarding how social phenomena and structures can arise as a result of repeated interaction between numerous individuals.<sup>38</sup> Furthermore, models have been developed for the spread of ideas, conceptions and behaviour.<sup>39</sup> The overall impression is that, within this field, a great deal of knowledge exists and that it might very well be the case that it is the gathering of information which sets limits for how early we are able to discover and stop conflicts in the making.

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<sup>36</sup> Gulden, Timothy R. (2002)

<sup>37</sup> Carley, Kathleen M. (2002)

<sup>38</sup> Center on Social and Economic Dynamics (2002)

<sup>39</sup> Lynch, Aaron (2002)