

# John Boyd

## and strategic theory in the postmodern era

*By Frans Osinga*

### **The first postmodern strategist**

We live in the postmodern era, the French sociologist Francois Lyotard told us in the early eighties. Postmodernism has come to signify a break with traditional modes of behavior. This includes warfare. Two dominant strands of strategic thought have both earned the label of postmodern warfare: Network Centric warfare (NCW) and Fourth Generation Warfare (4GW). One takes its inspiration from the postmodern information society, the other from the eroding authority and power of the modern-era political institutions. Both are also unified in a common conceptual father: the late USAF Colonel John Boyd, the first postmodern strategist<sup>1</sup>. Few people in the past three decades have surpassed his influence on western military thought, but, like Sun Tzu and Clausewitz, he has also often been superficially read and understood.

Boyd is most often associated exclusively with one key notion: the OODA loop, indeed the OODA loop picture has become iconic and has also become ‘shorthand’ for defining Boyd’s work. The idea of the rapid OODA loop holds, in the popular interpretation that significant operational advantage will accrue to the side that can complete the decision cycle – Observation-Orienta-tion-Decision-Action – in the shortest time span. It asserts that information superiority is a decisive advantage, allowing for a greater tempo of operation. This suggests that disrupting the enemy’s C2 process and improving one’s own, is a key imperative for success. This notion of rapid-OODA looping, out-thinking the enemy, or getting inside his decision cycle, has become main-stream, and from Desert Storm to Iraqi Freedom US commanders such as Norman Schwarzkopf and Tommy Franks could be heard explaining their actions through these terms. This is an important idea and that concept alone suffices to demonstrate Boyd’s continuing influence.

But this view is also too limited. The ‘rapid-OODA loop’ idea too is too narrow an interpretation of the general OODA loop construct as Boyd employed it. His work *A*

*Discourse on Winning and Losing* moreover harbors many other ideas beyond the OODA loop, including an argument on organizational culture. Boyd's work in fact constitutes a theory of strategic behavior in general, or in more precise terms, the dynamics of survival and growth of competing complex adaptive systems. A discussion of NCW and 4GW (although neither can be exclusively traced to Boyd's ideas) will serve not only to demonstrate the continuing influence of his work, but also to show what other arguments Boyd made beyond the OODA loop concept, ideas that continue to be of relevance today.

### **Maneuver conflict refined: Network Centric Warfare:**

Network centric warfare has been one of the fashionable buzzwords since the first article coining the term appeared in 1998. It lies at the heart of the Transformation program initiated by former US Defence Secretary Donald Rumsfeld, and since 2002 in only slightly different wording, the concept has entered NATO lexicon too as part of NATO Military Transformation.

NCW has a long lineage though and Boyd stands at the beginning of it. NCW is a direct extension of the maneuverist approach to warfare, which was 'rediscovered' during the 1980s and early 1990s in the US military. Boyd's ideas and his advocacy were very influential in this process, which involved a change away from the attritional mindset. It found its articulation in the AirLand Battle doctrine and the revised US Marine Corps Doctrine, which regards war as a non-linear phenomenon, and harps on Boydian themes such as uncertainty, initiative, tempo, and adaptability, and agility. During the 1990s most western military doctrines started to display similar notions.

Three Boydian ideas in particular have found their place in NCW: (1) the idea of maneuver conflict; (2) the image of a swarm-like organization of netted but relatively autonomously operating units, acting in 'synch' through an 'auftragstaktik'-based command and control set up and sophisticated information systems; and (3) the idea that information superiority will offer a decisive advantage because it allows a more rapid and accurate completion of the famous OODA loop, or decision cycle.

Boyd's longest presentation 'Patterns of Conflict' included an oft overlooked categorization of conflict models. The first model was the attritionist model, which Boyd

rallied against. The second is the model of maneuver conflict. This holds that success comes not from firepower and destruction of the opponent but from the physical and mental dislocation of the enemy's units. What matters in planning actions is the expected cognitive impact of surprising, rapidly unfolding and varied physical lethal actions, and non-lethal threats and feints. One wants to create confusion, splinter the units, alienate the environment, inspire fear and uncertainty, and induce a lack of information so as to degrade trust, cohesion, and courage, and thus the ability to cohere and respond collectively, i.e., to adapt adequately as an organization. Affecting the ability to adapt in such a menacing and ever uncertain and dynamic environment, is one of Boyd's key themes, as is the focus on the cognitive features of the enemy's system..

Boyd's advice for organizational culture, structure and communication processes, is consistent with his emphasis on adaptability. The key challenge is maintaining cohesion while conducting fluid, varied and rapid actions, despite uncertainty and threats. In his presentation 'Organic Design for Command and Control', Boyd advocates an agile cellular organization - networked through ideology, shared ideas, experience, trust, goals and orientation patterns - that thrives in uncertainty and fosters innovation, creativity and initiative. Finding confirmation of his science-inspired ideas on adaptability and learning in historic works on command and morale and studies on individual and organizational learning, he considered trust and open communications between commander and troops vital, as well as a reliance on social bonds formed by implicit communications, training, shared experiences, doctrine, and clear objectives, combined with low level initiative and an tolerance for failure.

Whereas standard Pentagon solutions to uncertainty involved increasing investments in C4ISTAR equipment, Boyd aimed for creating adaptable and learning organizations consisting of informally networked teams that could comfortably operate in an insecure environment, due to their reduced information requirements. If everyone understands clearly, and is attuned to, the organization's purpose and/or the commander's intent, explicit communication beyond the objective is superfluous. Because of the shared outlook one knows what to do and what one can expect of others, be it supporting units, higher commands etc., implicit communication will suffice. Self-organization will be the result, a key NCW tenet.

In such an organization, command, Boyd indicates, is a wrong term, as is control. Boyd advocates lateral relations and continuous open two-way communication between hierarchies. Higher command levels must restrain themselves in their desire to know all that is going on at lower levels and to interfere. Higher commands must shape the “decision space” of subordinate commanders. They must trust and coach. They must encourage cooperation and consultation among lower levels. They must accept bad news and be open for suggestions, lower level initiatives and critique. It is thus more a question of leadership and appreciation of what is going on and comparing this to what is expected.

Such a set-up would enable rapid and varied actions in non-linear fashion – distributed operations is the term that is en vogue these days – all unified (“in harmony”) - across the theater through a shared implicit perspective on the environment and an awareness of what is expected by higher commands due to the use of *Auftragstaktik*, and doctrine. While Clausewitz saw friction as an impediment, Boyd emphasized the creation of friction among the enemy units, and his proposed organizational set-up and mode of operations are geared to effectuate such a scheme.

In the literature of NCW we find these ideas applied to the military dimension of strategy<sup>2</sup>. NCW came about after a decade of discussions of the implications for warfare emanating from the changes in the economy, discerning a transition from the industrial age to the “Information Age”. The transition to the Information Age implied, and was manifested in, the awareness that information was becoming the driving factor in warfare. Zooming in on particularly the information side of Boyd’s OODA loop idea, many noted that information age technologies allowed for compressing the time to complete an OODA cycle. On the organizational and doctrinal level, these developments implied an empowerment of small units and the ability of armed forces to cover larger distances quicker, to influence events over larger swaths of territory, and to do more things in a given period of time. It offered a transition from attrition warfare to precision warfare or knowledge intensive warfare. With information the key weapons and target of the information age, the focus during a conflict must lie on disrupting, if not destroying information and communication systems on which the adversary relies in order to know itself: who it is, where it is, what it can do when, why it is fighting, which threats to

counter first, etc. It means turning the balance of information and knowledge in one's favor.

The close parallels with Boydian military thinking also come to the fore in the consequences for organization and command and control philosophy. Arguing that the information revolution disrupts and erodes the hierarchies around which institutions are normally designed, several analysts predicted that for adaptive organizations would evolve from traditional hierarchical forms to new, flexible, network-like models of organization. The information revolution would favor the growth of such networks by making it possible for diverse, dispersed actors to communicate, consult, coordinate, and operate together across greater distances, and on the basis of more and better information than ever before. Adopting a network structure is not an option but an imperative, for case studies strongly suggest that 'institutions can be defeated by networks and it may take networks to counter networks.

Several years later they explored the idea that small units now had access to unprecedented levels of situational awareness, and could call in stand-off precision firepower offered new possibilities. They offered the "Swarming concept" as the logical emerging paradigm in warfare, following three earlier paradigms in military history: the melee, massing, maneuver. The central idea is that information technology offers the potential for small networked units to operate as a swarm in a 'seemingly amorphous but deliberately structured, coordinated strategic way to strike from all direction, by means of a sustainable pulsing of force and/or fire, close in as well as from stand-off positions. It works best if it is designed mainly around the deployment of myriad, small, dispersed maneuver units that are tightly interconnected and capable to communicate and coordinate with each other at will and are expected to do so'.

Introduced in the latter part of the nineties, NCW incorporated many of the concepts developed in various studies on the impact of the information age on warfare, including swarming and the network structure. With explicit reference to Boyd's OODA loop, NCW documents note that the advantage for forces that implement NCW lies in gaining and exploiting an information advantage. The network structure is essential, not a specific weapon or support system, the NCW Report to Congress states. NCW derives its power from the strong networking of a well-informed but geographically dispersed

force. Such forces must have the capability to collect, share, access, and protect information, as well as the capability to collaborate in the information domain, which enables a force to improve its information position through processes of correlation, fusion, and analysis. This will allow a force to achieve information advantage over an adversary in the information domain. Importantly, in the “Cognitive domain” the force must have the capability to develop and share high quality situational awareness’ and the capability to develop a shared knowledge of commander’s intent. This will enable ‘the capability to self-synchronize its operations.

Boyd would likely not agree with the way technology has come to be such a dominant factor and with the expectations of some proponents that NCW would ‘lift the fog of war’. On the other hand, he would agree with its organizational tenets and operational aspirations. In any event, it is not difficult to recognize key elements of Boyd’s category of maneuver conflict and his preferred organizational characteristics.

#### **Moral conflict refined: 4GW**

The literature on 4GW emphasizes another dynamic but is equally deeply influenced by Boydian ideas, indeed, the first 4GW article published as early as 1989 was authored by one of Boyd’s close associate, Bill Lind, and a group of like minded officers<sup>3</sup>. While it shares the theme of adaptability and networked organizations with NCW, it is rooted more in guerrilla warfare theory and derives its inspiration from three additional ideas embedded in Boyd’s work: (1) the image of war as a pendulum of action-reaction; (2) the concept of moral conflict; (3) the dynamic of interaction and isolation. In addition, it does not employ the narrow interpretation of the OODA loop but Boyd’s own, more comprehensive rendition of it.

In Boyd’s own view, the OODA loop is much less a model of decision making than a model of individual and organizational learning and adaptation. In the words he used in the 1970s, it is a model of a “meta-paradigm”, a “theory of intellectual evolution and growth”. The first piece of *A Discourse on Winning and Losing* is an abstract investigation into cognitive processes, and the first key theme to emerge from this work is the fundamental uncertainty of our knowledge concerning our environment, with the subsequent need to continuously evolve our mental models so as to cope with the ever-changing environment. We need to learn and adapt, and be comfortable with the idea

that our view of reality is only partly correct, and only for a while. Each action or decision we take in that respect is just a test to see if our hypothesis concerning reality is correct. At heart the OODA loop is an epistemological model that is informed by the likes of Darwin, Heisenberg, Godel, Popper, Bronowski, Kuhn, Polanyi, anthropologists such as Geertz, information theorists and cyberneticists such as Wiener and Neumann, system theorists such as Bertalanffy, and a host of others. French sociologists such as Lyotard, Derrida and Braudillard would feel quite comfortable with Boyd's postmodern view.

It follows that the abstract aim in any conflict is to render the enemy powerless by denying him the time to cope with the rapidly unfolding, and naturally uncertain, circumstances of war. The major overarching theme throughout Boyd's work is *the capability to evolve, to adapt, to learn and deny such capability to the enemy*. Boyd regards the contestants, the armies, their headquarters and societies in terms of living systems, as organisms, that aim to survive and prosper. To that end they – individuals, platoons, brigades, divisions, army corps, nations, and any other type of social system - observe, learn and adapt. The strategic aim, he asserts in *Patterns*, is 'to diminish adversary's capacity to adapt while improving our capacity to adapt as an organic whole, so that our adversary cannot cope while we can cope with events/efforts as they unfold'. At the most abstract level these efforts to survive and adapt resemble a game of 'interaction and isolation': isolate an opponent and in due course it will lose internal cohesion and external support, its delayed and misinformed reactions will be ineffective and it will fail to adjust correctly to the changed environment. The aim is to change the opponent from an open into a closed system which slowly suffers the fate of all closed systems and the second law of thermodynamics, notions that found their place in his work: entropy. The corollary is the imperative to maintain constant interaction between the units of an organization and between the organization and its environment.

At the *tactical and operational levels*, adaptation can be seen as a function of speed of action and reaction and of information availability. At the *strategic level*, Boyd notes, adaptation is more indirect and takes longer time intervals. It revolves around adjusting doctrines and force structures and disorienting the opponent's orientation patterns, or mental images. At the *grand-strategic level* adaptability revolves around shaping the political and societal environment, including an attractive ideology, and adopting a mode of warfare the

opponent is ill-suited to wage. Leaders should develop attractive and inspiring national goals and philosophies that unite and guide the nation as well as attract the uncommitted. Meanwhile they should demonstrate the ruling government is corrupt, morally bankrupt, disconnected from the population, and provoke enemy actions that are considered disproportional and ineffective.

Whereas NCW is geared toward the tactical and operational levels, and the conventional military realm, 4GW focusses more on these strategic and grand strategic levels of adaptation, on moral interaction and isolation and non-traditional modes of warfare. 4GW is part of a stream of publications that study non-western modes of warfare and asymmetric warfare, in which the political and moral aspects dominate over the tactical and technological. It is informed by Boyd's category of moral conflict: war is often played out in the moral dimension and is a contest of ideas and ideologies. Whereas NCW sees units bound by shared military relevant information, common tactics and procedures and doctrine, 4GW warriors are bound by shared ideology, values and worldviews. Their aim is to destroy the moral bonds that permit the adversary to exist.

4GW also follows as the next logical next step in the dialectic process that Boyd laid out in his overview of military history. His overview in *Patterns of Conflict* describes a continuous dialectic process of action-reaction, a constant interplay of offensive versus defensive measures, tactics, weapons and doctrines, and innovative responsive countermeasures. Following this dialectic process, 4GW authors assert that warfare has evolved through four generations:

- 1GW: smoothbore weapons; line and column; conscription, rigid discipline with top down control. Example: wars of Napoleon.
- 2GW: rifled weapons, automatic weapons, indirect fire artillery; tactics still basically linear (esp. on defense), but firepower replaced manpower as predominant element; attempts to use "élan" to overcome firepower were now suicidal; nation-state alignment of resources to warfare. Example: industrial age warfare such as the US civil war and WW I.
- 3GW: same weapons; but: non-linear tactics (infiltration/pull; surfaces & gaps); time rather than place as basis of operational art; emphasis on collapsing enemy

rather than closing with and destroying him. Example: WW II, Blitzkrieg, armoured and maneuver Warfare.

The next – fourth - generation comes not from promises that civilian technologies hold for the military (NCW for instance), but from contemporary societal phenomena that constitute more dominant influences on the nature of contemporary and future conflict, the reasons and motives they start or continue, the actors involved, the methods employed and parameters of success, for instance:

- the increasing vulnerability of modern open western societies and the loss of the nation-state's monopoly on violence
- the low entry costs for waging 4GW in and against open societies
- the eroding effect of globalization on the sovereignty of nation-states,
- the decline of the west, concurrent with the rise of Asia and the rise of the Islam,
- the rise of cultural, ethnic and religious conflict and the threat of radical Islam
- the increasing irrelevance of old style hierarchies such as Western high tech armed forces.

Based on this view of trends, in 1989 4GW authors posed the hypothesis of Fourth Generation Warfare. First, the highly visible pattern of operations makes the West predictable and a deliberate response can be expected. They point out that precisely because the West has been highly successful in a certain style of warfare, other countries or groups will not abide by those rules. It goes beyond tactics and includes turning the Western conceptualization of war – its orientation pattern - against itself. The Western mode of thinking and waging war, which is founded on Clausewitzian principles, is giving rise to non-Clausewitzian styles of warfare. Instead of countering the West in the military dimension, nations but in particular non-governmental actors respond in the moral dimension. Arguing that the West has only ever been beaten in unconventional wars, practitioners of 4GW wage protracted asymmetric war. Regarding war not as a military but as a political struggle, they focus on the political will of western politicians and polities; exploit their impatience and casualty-sensitivity.

Second, the global societal developments push and enable this shift from high-technology industrial age manoeuvre war, focussed on the destruction of the enemy's

armed forces to an information age focus on changing the minds of the enemy's political decisionmakers through unconventional warfare. Small non-state entities increasingly gain options to generate destructive and disruptive power traditionally the privilege of nations. 4GW warriors combine guerrilla tactics or civil disobedience with the soft networks of social, cultural and economic ties, disinformation campaigns and innovative political activity to direct attack the enemy's political will. It is an evolved form of insurgency.

Politically 4GW involves transnational, national and subnational organizations and networks to convey a message to target audiences. Strategically it focusses on breaking the will of decision-makers. The message serves three purposes: to break the enemy's will; to maintain the will of its own people; and to ensure neutrals remain neutral or provide tacit support to the cause. Operationally it delivers those messages in a variety of ways from high-impact, high profile direct military actions to indirect economic attacks such as those designed to drive up the price of oil, or assassinations of specific government and company officials. Tactically, 4GW forces avoid direct confrontation if possible, while seeking maximum impact. They use materials present in the society under attack, be it industrial chemicals or fertilizers.

This idea-driven fourth generation warfare will be a war fought at the ideological and moral level, with small highly maneuverable and agile cells employing standard guerrilla and terrorism tactics in a dispersed decentralized way, their actions informed, inspired, glued, and gaining coherence by shared programs, ideals and hatreds. 4GW opponents will deliberately not sign up to the Geneva conventions and use whatever means are available in a theater. There is a blurring of the distinction of peace and war and of the distinction between civilian and military. There will be no definable battlefields or fronts, instead the battlefield is highly dispersed and includes the whole of society. Terrorists use a free society's freedom and openness against it. Finally, 4GW warriors plan for long wars – decades rather than months or years. It is the antithesis of the high technology, short war the west favors.

4GW theorists find justification in a line of development that started with Mao's idea of *The People's War*, continued with Ho Chi Minh and Vo Nguyen Giap in Vietnam, and has reached a new stage with the Palestinian Intifada, which indicated 4GW warriors have

now developed the ability to take the political war to their distant enemy's homeland and destroy his will to continue the struggle. The dire warning is that many countries will evolve 4GW on their soil, in fact, 9/11 brought the changing nature in our living room, it is asserted. Most recent 4GW literature points at radical Islamist groups as the most immediate challenge, expanding outward as it does in every direction from its traditional heartland, including into Europe and the US. Other examples include Hezbollah's successes against Israel in the conflict during the summer of 2006, the murder on Theo van Gogh, the Dutch filmmaker and the resurgence of the Taliban in Afghanistan, this time fighting NATO troops. Meanwhile Chet Richards, a key 4GW proponent and Boyd acolyte, has analyzed the 4GW insurgency in Iraq using Boyd's interaction-isolation dynamic and moral warfare model to show the strategic dilemmas facing US troops<sup>4</sup>.

4GW is not the end stage; 5GW is coming. The increasing use of easy to come by chemical toxic agents such as ricin or anthrax by 'super-empowered individuals' or small groups is seen as symptomatic of it, which once more promises to make current western forces structures and defence policies irrelevant<sup>5</sup>. This is '*Open Source Warfare*'. As John Robb asserts in *Brave New War*, terrorism and guerrilla warfare are rapidly evolving to allow nonstate networks to challenge the structure and order of nation-states. It is a change on par with the rise of the Internet and China, and will dramatically change how we will view security. The same technology that has enabled globalization also allows terrorists, criminals and violent ideologues to join forces against larger adversaries with relative ease and to carry out small, inexpensive actions—like sabotaging an oil pipeline—that will generate a huge return. It is part of a trend in the process of putting ever more powerful technological tools and the knowledge of how to use them into an ever-increasing number of hands. The rise of malicious 'smart mobs' is the downside of the Friedman's flattening world. From Pakistan to Nigeria to Mexico it creates a new class of insurgents John Robb calls *global guerrillas*. The new granular level, the realm of superempowered groups is where the seeds of epochal conflict now reside.

### **Boyd's continuing influence**

There are clearly many differences between 4GW and NCW, but the previous discussion also clearly highlighted that in their conceptual roots they share a common author. Both have many elements in common. Boyd actually made an effort in showing the underlying

similarities in dynamics of maneuver and moral conflict. In his quest to fathom the dynamics of winning and losing, he stated that the essence is to<sup>6</sup>:

- penetrate an adversary to subvert, disrupt or seize those connections, centers, and activities that provide cohesion (e.g., psychological/moral bonds, communications, lines of communication, command and supply centers,...).
- exploit ambiguity, deception, superior mobility and sudden violence to generate initial surprise and shock, again and again and again.
- roll-up/wipe-out, the isolated units or remnants created by subversion, surprise, shock, disruption and seizure.

These actions aim to:

- exploit subversion, surprise, shock, disruption and seizure to generate confusion, disorder, panic, etc, thereby shatter cohesion, paralyze effort and bring about adversary collapse.

For Boyd the message lies in the fact that in both concepts one operates in a directed yet more indistinct, more irregular and quicker manner than one's adversaries. This enables one 'to get inside their mind-time-space as a basis to penetrate the moral-mental-physical being of one's adversaries in order to pull them apart and bring about their collapse'.

This discussion has demonstrated that Boyd's influence on contemporary strategic thought has been and continues to be significant, but also that for a full appreciation of that influence, one needs to go well beyond the narrow 'rapid-OODA loop' concept and fully engage with him in his *Discourse on Winning and Losing*.

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<sup>1</sup> For a full discussion of the postmodern aspects, chapter 7 of my book *Science Strategy and War, The Strategic Theory of John Boyd*, Routledge, Abingdon, 2007, from which this articles draws frequently, also for the various references to Boyd's work. This articles also draws from 'Boyd, Bin Laden and 4GW as String Theory', in John Olson (ed), *New Wars, New Theories; Prospects and Problems*, Oslo, forthcoming. This article allows for only a brief overview of some of Boyd's ideas, and not for critical remarks.

<sup>2</sup> This discussion of NCW draws from Zalmay M. Khalizad and John P. White (eds), *Strategic Appraisal: The Changing Role of Information in Warfare*, Santa Monica: RAND, 1999; John Arquilla and David Ronfeldt,

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'Cyberwar is Coming', *Comparative Strategy*, Vol.12, No.2 (1993), 141-56; John Arquilla and David Ronfeldt, *Swarming and the Future of Conflict*, Santa Monica: RAND, 2000; *DoD Report to Congress on NCW*, Washington D.C.: Department of Defense, CCRP publications, July 2001; David S. Alberts, John J. Gartska, and Frederick P. Stein, *Network Centric Warfare*, Washington, D.C.: U.S. Department of Defense, CCRP publications, 1999; David Metz, *Armed Conflict in the 21<sup>st</sup> Century: The Information Revolution and Post-Modern Warfare*, Carlisle Barracks, US Army Strategic Studies Institute, April 2000; and Chris Hables Gray, *Postmodern War, The New Politics of Conflict*, London, Routledge, 1997.

<sup>3</sup> This discussion of 4GW draws from William Lind, Keith Nightengale, John Schmitt, Joseph Sutton, Gary Wilson, 'The Changing Face of War: Into the Fourth Generation', *Marine Corps Gazette*, Oct. 1989, 22-26; Greg Wilcox and Gary I. Wilson, 'Military Response to Fourth Generation Warfare in Afghanistan', at <http://www.emergency.com/2002/4gw5may02.htm>, accessed April 9 2007; *The Sling and the Stone*, Zenith Press, St.Paul, Mn, 2004; William Lind, 'Understanding Fourth Generation War', *Military Review*, September-October 2004; William Lind, Maj. John Schmitt and Col. Gary Wilson, 'Fourth Generation Warfare: Another Look', *Marine Corps Gazette*, December 1994, 34-37; and Thomas Hammes, 'War Evolves into the Fourth Generation', *Contemporary Security Policy*, Vol 26, Nr. 2, August 2005, 189-221.

<sup>4</sup> See Chet Richards, *Conflict in the years ahead*, presentation, at <http://d-n-i.net>, accessed 10 October 2005.

<sup>5</sup> See for instance John Robb's website, <http://globalguerrillas.typepad.com/globalguerrillas>; This section draws in particular from John Robb, *Brave New World, The Next Stage of Terrorism And The End of Globalization*, John Wiley & Sons, New York, 2007.

<sup>6</sup> John Boyd, *Patterns of Conflict*, p. 98.