

Swarms, Networks and Strategy:
The Transformation of the Geo-Politics of Security

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Introduction

Globalisation has been a prominent theme for international relations scholars since the end of the cold war. Though the roots of this phenomenon lie far earlier in history, and its scope, structure and effects are contested, it has come to occupy a central position in thinking about the nature of world politics in the post cold war era. It is possible to argue that the prominent position accorded to globalisation in the past decade arises from the dissolution of the bi-polar structure of power that characterised international relations in the period following the second world war. As the superpower confrontation, and the structure of international relations attendant to it, receded after the events of 1989-91, scholars began to acknowledge a larger number of actors and issues in the international order and to examine the structures in which they might be embedded. Given the common perception that bi-polarity had given way to a multi-polar world order, the theme of globalisation was one that easily captured such trends.

As the nuclear stand-off that had characterised bi-polarity receded, the relentless globalisation of neo-liberal capitalism emerged as one possible structure for world politics. Indeed, as military security slipped down the agenda of issues, the economic interdependence that was becoming increasingly apparent was taken to represent the new order of international relations. This led to much hyperbole regarding the demise of the nation-state and the emergence of global structures and norms. Much of this thinking has been shown, over the past five years, to be deeply problematic. However, what is not in dispute is that certain trends towards global interdependence, transnational – or translocal – interconnection, and the broadening of the issue agenda of world politics have been shown to be very much a feature of the present era and, as such, must be taken seriously by international relations scholars. Thus despite mixed results, thinking about globalisation has had a significant and lasting effect upon the conceptualisation of world politics.

What is interesting, however, is that much of this thought has focused on the economic and socio-cultural aspects of globalisation, thus neglecting the security questions raised by the interdependence that such a process embodies. Indeed, it seems that the euphoria surrounding the end of the cold war almost displaced security

as an important aspect of the study of world politics. In the haste to declare a New World Order – of humanitarianism, transnational solidarism, global capitalism and democracy – many scholars relegated the question of security to the status of history. To ask questions concerning security seemed, in some sense to hark back to an era of confrontation and fear that had been left behind. This seems even more curious insofar as the final decade of the twentieth century saw significant instances of political violence (including genocide), economic insecurity (including the collapse of several national currencies), environmental damage, and migration.

Perhaps some of the blame for this lacunae can be put back onto security studies insofar as it is often tempted to hark back to models of the national interest that have their roots in the much discredited realist models that were developed during the cold-war. These theories, which were predominantly models of American power, rested on overly abstract propositions concerning the nature of international relations that are simply not realistic in an era of transnational interdependence.

And yet, in the wake of 9/11, the Afghanistan and Iraq wars, ongoing conflict in Africa, the Middle East and Chechnya, and insecurity arising from economic, environmental, social and political sources, it seems proper to assert that the question of security should be central to the study of globalisation. It was partly in relation to such an assertion, that so-called ‘critical security studies’ emerged (Krause & Williams, 1997). Whilst not so much a school of thought as an ethos of enquiry, critical security studies attempted to broaden the concept of security in order to take account both of the enlarged issue agenda that characterises a globalised world and to act as a remedy for the overly narrow, theoretically impoverished traditional of thinking regarding security.

I want to take this ethos of critical security – which essentially asks what the ‘referent object’ of security (that object or value to which the concept of security refers in any given theoretical statement) is – and approach the question of the changing nature of western strategic conceptions in a globalised era. I want to do this for two particular reasons:

1. The relationship between globalisation and security has often been explored in relation to what could be called the ‘human security’ dimension. That is to say a good deal of writing has looked at the insecurities that affect individuals in a global age. This writing has often been inflected by a strongly normative feeling that globalisation – understood as the global expansion of neo-liberal capitalism – has harmful consequences for many sectors of the world’s population. Thus thinking about economic, environmental and cultural matters has often tended to concentrate on the way in which globalisation could be said to be a westernisation against which indigenous ways of life must struggle. Moreover, even in the cases where scholars have turned their attention to the relationship between armed conflict and globalisation, it has often been in terms of either the disintegration of so-called failed states (e.g., Kaldor, 1999) or in terms of the threat posed to the west by terrorism and rogue regimes (e.g., Rogers 2002). In the former case the focus of this writing has been to note how globalisation produces certain transformations that create new forms of war in the developing world and the periphery of the west. In the case of the latter the focus has been upon the manner in which globalisation – taken as a process of westernisation – is generating a backlash (of which 9/11 is taken as prime evidence). *Much less attention is paid to the manner in which globalisation may be effecting certain transformations in the nature of warfighting in the west.* That is to say, much less attention is paid to the need for new analytical tools to understand the manner in which security, conceived in the traditional sense as the deployment of force to secure certain interests, is being transformed by globalisation. If this question has traditionally been the preserve of the sub-field of international relations called strategic studies, we might say that there has been relatively little attention paid to the manner in which globalisation is transforming western *strategy*. Now you might ask why this is important – after all, wasn’t strategic thinking discredited by the transformations that marked the end of bi-polarity? To a certain extent this is correct – and I would not argue that we need to return directly to the narrow categories of *classical* strategic scholarship. However, whilst the nature of security has broadened, the strategic deployment of force by western states and the organisations to which they belong has not declined – if anything it has expanded. However, whilst we explore new tools for a critical

understanding of the broadened agenda of security, we leave the language of strategy virtually untouched.

2. This becomes apparent insofar as there is a dawning realisation that the nature of American strategy – the manner in which America deploys organised violence – is undergoing certain transformations. Often referred to as ‘imperial(ist)’ (Mann, 2003; Harvey, 2003), there is an awareness that this transformation is closely tied to the manner in which America is influenced by globalisation. Indeed, much of this transformation is concerned with bringing a truly global dimension to American strategy (Shalickashvili, 1997; Bush, 2002). We should not take this transformation of the American strategic imaginary as an aberration as its elements filter through to other western, or Atlantic community, states and the organisations they belong to. Whilst these states and organisations may show wide ranges of political opinion, the transformation of strategy that characterises American projection of power is having a profound impact on the manner in which the west responds to the threats it perceives as arising out of globalisation. A rash of books, starting with Michael Hardt and Antonio Negri’s *Empire* (2000) and taking in David Harvey’s *The New Imperialism* (2003) and Michael Mann’s *Incoherent Empire* (2003), have attempted to examine this emergent strategy in terms of its cultural roots, its political forms, and, importantly, its effects. I want to locate myself in this literature, but to ask a slightly different question, namely, *how the transformations of strategic thinking rest upon a rewriting of global space in order to allow certain projections of force*. That is to say, the principle transformation, effected largely because of changes in the nature of warfighting and the battlefield in an era of globalisation, is in the conception of the space in and through which power must be projected.

It is this transformation that I want to examine here. We could start in a number of places, but since I have defined strategy as the projection of force in and through space, I want to start by looking at the manner in which the force deployed by western states has been transformed. I will start therefore, by examining the so-called ‘Revolution in Military Affairs’. This examination should determine the manner in which this transformation is both a *consequence* of globalisation and *allows a*

distinctive form of engagement with the threats that western states perceive as emerging in a globalised world.

The consequences of the Revolution in Military Affairs

The concept of the so-called 'Revolution in Military Affairs' (RMA) has been used to identify the possible transformations in the nature of the force deployed by western states and the organisations to which they belong. It applies principally to the force wielded by America and NATO. The RMA refers to a mode of war fighting that has evolved out of the application of new technologies to the battlefield. I will argue, however, that the consequences of the RMA are far wider in scope than the transformation of battle.

Revolutions in military affairs have occurred at various stages in history. The emergence of gunpowder and cannon as potent battlefield forces or the development of nuclear arsenals, for example, changed the nature of warfare (Latham, 1999, 211-212). The question of whether such a revolution is occurring at the present time began to be raised in the context of the 1991 Gulf War. In particular the use of so-called 'smart' weapons, along with technologies such as stealth aircraft, special forces and battlefield communications led some observers to ask whether the manner in which America deployed and used its armed forces was changing. Moreover, within military circles, planners and commanders were already talking about the evolution of military doctrine beyond the thinking of the cold war era (Arquilla & Ronfeldt, 1997).

We should, however, be cautious. Whilst the 1991 gulf war seemed to be a high-tech war, much of it actually involved traditional, old fashioned military forces. The tank regiments on which the defence of western Europe against communism had been premised, were the back-bone of the assault on Saddam Hussein's forces. More importantly, only a small percentage of bombs dropped were so-called 'smart' weapons like the tomahawk cruise missile. However, it does appear that a change with far reaching consequences had been put in motion.

According to Andrew Latham, the Revolution in Military Affairs is characterised by three dimensions: *lethality*, *visibility* and *agility* (Latham, 1999, 219). **Lethality** refers

to both the accuracy with which force can be brought to bear and the destructiveness of this force. In simple terms it can be measured by the fact that American tanks deliver larger shells over a greater distance with improved accuracy. For example, 'in the second world war a tank took an average of seventeen shots to destroy another tank at a range of 700 yards. By 1973 this had been improved to two shots per kill at 1800 yards. During the gulf war single shot kills at ranges of greater than 3000 yards were not uncommon' (Latham, 1999, 234, footnote 65) Similarly, as we all know from the recent war in Iraq, cruise missiles are now capable of hitting a specified floor in a building and leaving the rest of the structure standing. The importance of this technological change can be seen in the way in which western nations have become able to fight wars at a distance (Rogers, 2002, 4-8). If it is possible for a tank commander to destroy an Iraqi tank before the Iraqi tank commander can even see his opponent, this leads to a deadly imbalance in the nature of warfare.

These weapons are what might be called 'stand off' weapons – enabling the delivery of destruction from a great distance. They have been enabled by technological developments that have brought about so called C⁴I (command, control, communications, computing and information) technologies. It is these technologies that have led to the second aspect of the revolution in military affairs – **visibility**. Investment in satellite based technology has allowed commanders to view their forces and data about their opponents in real time. This allows continual feedback between forces on the ground and their commanders. The use of computer networks and imaging devices allows information to be relayed back and forth instantly. In this sense forces can be deployed faster and with more accuracy.

And this leads to the third aspect of the revolution in military affairs: **agility**. The new technologies have encouraged a movement away from the massive deployment of mechanised forces towards the use of smaller units and airborne force able to cover greater ground and strike targets with high accuracy.

However, before we get carried away by the fetishisation of technology we should step back and ask what difference this has made to western *strategy*. I would contend that it has had two central effects:

1. The battlefield has become virtual. I don't mean that the battlefield does not exist – this is patently not true. Rather, I mean that real-time modelling, enabled by advances in information technology, has enabled the creation of real-time maps of the battlefield. To a certain extent this allows those doing the modelling to create the battlefield. This is not to say that virtualisation abolishes geography, but that the image of the battlefield is controlled by those doing the imaging. The space of battle is now much more determined by the maps generated on western computers, than by the extant geographies in which fighting is occurring. The most important element here is that fighting seems to have moved away from the domination and possession of territory towards the pinpointing of points of strategic weakness. Forces are not deployed in large numbers to occupy land, but rather directed towards the points of maximum impact. In this sense the map of battle is no longer a map of a given territory, but a map of the network of the opponent's command and control structure. This can be seen in engagements in both Kosovo and, to a lesser extent, Iraq. Stand-off force is used to disable the opponent's command and control structure through the destruction of key network nodes. This has also had the effect of changing battle from an action of attrition to one in which the disabling of command and control is foremost.
2. As Eyal Weizman has noted, strategy has been verticalised (Weizman, 2003; Weizman & Segal, 2003). This is a key transformation in battle arising out of both the RMA and certain empirical trends in a globalised world. Strategy has typically been horizontal in its organisation. That is to say, strategy has focussed on the manner in which forces engaged on a horizontal plane. The classic example of this is the air-land war doctrine that governed NATO's cold war strategic thinking (see Biddle, 2002). In this model, air-power was used to support the advance of mechanised land forces. The goal of these forces was, through attrition, to repulse, dominate, or hold at bay the enemy. At stake was the occupation of territory. This form of strategic thinking accords with the traditional realist understanding of international relations as a zero-sum game between territorial powers. Underlying this school of thought is a vision of the world that takes the surface of the globe to be divided into territorial parcels of sovereign government. The globe is thus seen as a flat map divided into competing states who govern the land inside their borders. Globalisation has,

of course, problematised this model with its disregard for borders. As transnational events – for example, the flows of money, people and terror – contest sovereignty, this simple model is harder to maintain. Moreover, the verticalisation of the battlefield has led to the deployment of air-power not simply in support of land forces, but as a force in its own right. This verticalisation rests on the deployment of satellite technology that looks down onto the battlefield. In this sense the projection of force is no longer about the projection of force across a horizontal plane, but about the projection of force down onto the nodes of an opponent's command and control structure. This has transformed battlespace into a properly three-dimensional space – by adding, and, to some extents, privileging, the vertical vector of force. Simultaneously, empirical circumstances have forced ground forces to acknowledge this verticalisation. Globalisation has compounded the increasing urbanisation of the world's population. Urbanisation poses many challenges for strategists, not least the question of how war will be fought in an environment that makes the application of the laws of war – such as the rights of non-combatants – to warfighting problematic. One of the principle challenges of urbanisation is, as American strategists working on Military Operations in Urban terrain (MOUT) have noted, that the urban environment is verticalised and thus, different to the classic, horizontal terrain of warfighting (Graham, 2003). The urban space poses the challenge of both encountering force from both horizontal and vertical vectors, and deploying force in both vectors. As debates about the possibility of being forced into urban warfare in Iraq show, these problems are at the forefront of strategists' minds.

What these two points show is that the projection of force is being transformed into the application of *agile* force against *networks* of command and control. Moreover, this application will, more often than not be projected in a *vertical*, rather than *horizontal* manner.

Networks

This leads me to argue that the *network* has become the predominant model for the space of battle. Networks are a profoundly different form of space to the classical territorial state. Moreover, it is no accident that battlespace has become networked. Globalisation itself could be characterised as the emergence of a number of *translocal networks* (Appadurai, 1996). Translocality refers to the fact that globalisation ties a number of localities together without regard for the territorial borders that might have historically divided them. Thus the global financial centres in New York, London and Tokyo are tied closely together, arguably sharing more in common than with the territories in which they are located. In this sense the networking of strategy is an apt response to the transformed circumstances under which force must be projected that globalisation has brought about.

Networks, as Arquilla and Ronfeld (2001, 7-10) point out, are characterised by non-linear forms of connection. That is to say networks do not rely upon classical, hierarchical chains of command in which communication must occur in a regulated, linear manner. Rather, networks can connect nodes together in a way that allows more flexible and decentred forms of communication and information exchange. Moreover, networks allow for greater flexibility insofar as nodes can be removed without impairing the functioning of the network. In this sense the cell-like structure of Al Qaeda is a good example. Removing individual cells does not stop the network from functioning. Moreover, information need not be passed down the hierarchical command tree, but can pass from cell to cell. This means that it is not possible to stop the organisation by removing its central command.

Moreover, networks demand a different form of domination. And here, I think, we begin to see some answers emerging about the nature of American strategy in the present era. Networks demand a non-territorialised form of dominance. Applying force across a network necessitates the location and destruction or pacification of nodes of control. This means that force needs to be directed at a number of discontinuous locations across what would have formerly been a number of territories. The so-called 'war on terror' has been characterised by this approach. American interventions have attempted to remove nodes in a supposed network of threat. Whether these nodes are located in the Philippines, in Afghanistan, or in Pakistan is not important in the way that it used to be. This doctrine has been evolving throughout

the past decade. One of the reasons it has led to such vociferous objections is that it is completely at odds with international law insofar as this is territorial in form.

One of the consequences of a networked strategy is the emergence of so-called 'swarming' (Arquilla & Ronfeld, 2001, 12-14). Swarming refers to a simultaneous attack from a number of directions and sources upon a node in a network. The idea of the swarm can be seen behind much of the public discourse surrounding transnational terrorism. It is believed that the nodes of western life – its major cities – are in danger of being attacked from a number of directions and sources: hijacked airliners, dirty bombs, computer hacking, the contamination of water, and even biological or chemical attacks. Moreover, it appears as if western states fear that this could occur simultaneously. Insofar as this creates fear it does so through the image of overwhelming multidirectional attack overwhelming a key node in the global network.

On a smaller scale we can see that the deployment of force by American strategists is beginning to learn some of these lessons. Air-power, stand-off weapons, and special forces are directed in multi-directional, multi-source attacks upon key nodes. The combination of special forces and AC-130 gunships is a case in point. If we add to this the possibility of using computer viruses and human intelligence, the swarm becomes a model for the projection of force in a networked global space.

I would suggest then that the space in which America, the Atlantic community states that share its technological advantages, and the organisations to which they belong, projects force is changing. We could say that the virtualisation that has been brought about through technological advances has been extended to change the way in which global space is conceived.

The geo-politics of contemporary strategy

We could refer to conceptions of global space as *geo-politics* (O Tuathail & Agnew, 1998). Much of international politics – including the projection of force – can be explained by examining the model of global space that is being used since the kind of space that is envisioned by any party will determine the manner in which they attempt

to resolve any problems that arise. Geo-politics could thus be said to be the way in which the geographical space of the world is conceived – some would say imagined – by the actors in internal relations. The geo-politics of American power are now very much oriented towards the idea that they face threats from a networked set of sources that must be treated as such.

We should note that not only is the conception of global space as a network at odds with the conception of global space that underlies international law, but that it has led America in particular to augment its capacity to project force in an alarming manner. For example, its swarming in the case of Iraq seemed, in its overwhelming projection of force, inhumane. In this sense, I am not simply preoccupied with a set of narrow, descriptive problems here, but, for those who wish to follow them up, there are a large number of normative – or moral/ethical – questions raised by this emergent geo-political strategy. Some of these concerns are captured well by those who argue that American power is a form of imperialism. Whilst I would agree with some of their moral criticisms, I would argue that they have mis-understood the geo-politics – and the transformation of strategy – that has led to this particular way of projecting force.

Therefore, in regard to the manner in which the geo-politics, or space of strategy is changing in an era of globalisation, we can say the following:

- Space is three dimensional but discontinuous.
- Force is a mixture of presence and absence (stand-off).
- Dominance must be seen differently to the imposition of horizontal power.
- Empire then will be the application of force - swarming - at key network nodes.
- It will encounter battle in a three dimensional space and will have to swarm its opponents.
- But it will not rule territory as before.
- Security will be less about dominance and conquest, but more about a flexible disposition towards the swarming of nodes central to the emergent global networks.

I have argued that this leads to the projection of a specific type of power – that others have called empire – on the part of American in particular. I have also alluded to some of the normative challenges such strategy may pose.

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