

The Uses of Planning and the Decay of Strategy

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At the start of the 21st century, American military leadership in the international system is based on popular promises of quick and painless military victories. Whether they are expressed as the Revolution in Military Affairs, military transformation, network-centric warfare, this promise is translated more popularly into 'quick strike', 'overwhelming force', or 'shock and awe'. Such tactical innovations rely on the coordination of violence with fast-moving, networked personnel. In recent years, critics of the American military orientation towards tactics and operations have testified to the inability of these terms to drive towards long-term success in a political context. Their work has refuted the link between these technologies and clear victory, and will demonstrate that excessive trust in these methods dangerously imperils the larger military strategy for success.

Drawing attention to 300 years of military history, this essay points to the particular traditions from which American tactics- and operations-heavy reasoning emerged. It will trace the legacy of surprise-oriented planning as it diverged from classical strategy during a 19th century period of decay. Inherited and adopted with increasing enthusiasm, the particular institutions and prioritizations of this period of decay now predominate in American military institutions, brutally sabotaging the knowledge and control of those who would fight for a larger political agenda.

The essay contextualizes American coordination technologies and quick strike deployment by reviewing 300 years of military theory about the place of planning in strategy. From the first use of advanced military planning – in 18th century strategy – military strategists have classified both its proper and problematic applications. Classically, the theory of good application rested on political diplomacy as the larger aim of military endeavour. The development of mapping, anticipation, and quick response are dominant themes within this context, manifestations of the anthropological, social, and historical knowledge that tempered pure enthusiasm for technology and guided classical military reasoning.

Only in the 19th century did enthusiasm for quick in-and-out strikes and coordinated anticipatory signals intelligence trump strategically guided prioritizations of tactics within military institutions. This essay reviews the reasons for the decline of *strategy* and the rise of *stratagem*, as contemporaries referred to this orientation to quick tactics for hasty success without a wider context.

Calling upon 18th and 19th century observations, this essay exposes the false prioritization of these three factors. It shows how military institutions have increasingly privileged technologies that aid the potential for surprise, even when quick-strike, anticipatory tactics have been at odds with a greater peace-building strategy. Reviewing 20th-century American military theory, especially after World

War II, America adopted these same flawed priorities as its gospel and single road to victory.

Reviewing the actual weapons and tactics at use in the contemporary American military, the essay extrapolates from the reasoning of classical strategy to prove that contemporary American practice produces deeply flawed structures for observation and orientation, especially in contemporary forms of virtual training. Military reprisal thus depends not upon a response to actual conditions on the ground but on a limited and predetermined array of factors. Under such conditions, response can never achieve more than a tactical victory. No attempt to tweak the system to reference cultural data or 'human intelligence' will refine the fundamental information-gathering systems, and nothing short of wholesale reformation can realign the military with longer-term political stability.

America would benefit from a return to classical strategic thinking, as embodied by Clausewitz and Jomini. The classical tradition insists that strategy cannot depend on the mere maintenance of a monopoly of force; it must also encompass cultural knowledge of the enemy, internal restraint, and a plan focused on keeping the peace among fragile, warring peoples. Military success abroad and the pressing issue of intelligence reform thus both depend upon the reform of contemporary American strategy throughout the military institutions. To ensure political stability and the long-term success of military operations, technological coordination must be subordinated to a larger strategic understanding of how human elements produce future outcomes. That reform of strategy in turn requires nothing less than challenging the last 150 years of military thought.

A New Science of Prediction

Since the beginnings of the modern period in the Renaissance, military planning was predicated upon an ideal of war as the insurer of future political stability. From at least as early as Machiavelli's *Art of War* (1520), military theorists had pointed to the historical and social context of nations for understanding how and why men fought. In the 18th century, a series of technological innovations would allow the strategist to visualize complex data so as to generalize about ever more complicated factors that might determine the outcome of future events. By the late 18th century, the new science of strategy – including territory analysis, and increasingly sophisticated historical and psychological reasoning – aimed to minimize the violence of military confrontation and enable quick thrusts of minimal engagement, all in the name of long-term stability, insured by moderated, accurate control.

This quest to understand the future depended on an understanding of terrain and history, tempered by heightened standards of rigour for handling data. The result was a military enthusiasm for extremely detailed maps, accounting practices, and a markedly precise habit of describing the course history had taken and was likely to take in the future. Each level of data fixed the constraints of the possible future, and reassured strategists that they could predict future events with some degree of rigour. Speculation about history, psychology, and anthropology advanced in lock step with cartographic and actuarial invention.

The Mapping of Information

Cartographic historian Jean-François Pernot claims that the systematic and continuous gathering of intelligence marks the first extension of war into full-scale preventative and planning measures.¹ In the 16th century, the major innovation of war planning was a systematized understanding of the relationship between battle and the landscape. Knowledge of terrain allowed strategists to describe the possible formations a future battle might take.

Pernot dates the next innovation in the 17th century, noting how early maps brought together information about shelter, food, escape, and attack into a single document.² According to Pernot, the next stage was to link the map with an advanced system of accounting. The correct accounting of armies entailed reckoning the logistics of weight to be carried by the soldiers, the need for provisions and other supplies.³ Accounting demanded weighing road and pass against each other to judge which possible path determined a future better matched to resources and needs. With the new disciplines of logistics and cartography conjoined, as happened in France under Henry IV's chief minister the Duke of Sully's leadership, knowledge of topography meant control over the paths that future battles might take.⁴

By the end of the 18th century the quest for increasingly sophisticated systematizations of battle led to the development of even more nuanced models. Frederick the Great broke the battle down into stages or 'echelons', and theorized the artillery manoeuvres appropriate to each. Each echelon opened up new forks in the battle for the general swift-moving enough to capitalize on the arrangement. These stages formed the systematic projection into the future of one tactic to the next: they were a first step therefore in conceptualizing a longer series of events in a plan. By the 19th century, generals planned the course of war while surrounded by account books and atlases of different scales. They often employed some form of 'sandbox' where an officer could mark the real and possible movements of different armies.

These advances in projecting alternate futures progressed in lock step with progress in mapping. Not until the 1760s did the 'quantifying spirit' begin to apply to measurement of relief, longitude, and accurate distances between cities.⁵ The new science flourished under military patronage, especially that of Napoleon. Under the Emperor's instructions, a small collection of three-dimensional wooden maps by the Boitard brothers expanded into the war-machine-scale catalogue of international maps; the Galerie des Plans-Reliefs, housed in its own gallery in the Invalides.⁶ Napoleon's memos to the director indicate that the maps' use for planning went hand-in-hand with historical reconstructions of past battles from which he could learn. The collection emphasized relief maps of countries he planned to invade, countries which he might invade in the indefinite future, French outposts that might have to be defended, *and* sites of previous battles like Austerlitz whose location might assist later study.⁷ Napoleon played with the battlefields of his own history, turning counterfactual thought into a weapon.

The thicker detail of relief maps helped to enrich the modelling of alternate paths. A mere garden wall could form part of a commander's plan of action, showing where an advancing army might slow down, or where another part of a force might be hid.⁸

With a more detailed map it was possible not only to consider one's own movements, but also how one's enemy might move at the same time. To a greater degree than ever before, the general could anticipate hiding, surprising the enemy, or sneaking part of his force around from behind, all tactics employed by Napoleon. Mastery of landscape allowed the chess-player theorist to define differently shaped futures from several possible retreats, operations, and modes of attack, rather than a choice of mountain passes culminating in a single pitched battle on more or less favourable territory.⁹

Planning ahead so as to cut off the opponent involved such a complex analysis of landscape that parsing information into useful generalizations also became important. Thus Clausewitz's terminology for landscape categorized military knowledge more generally than simple knowledge of passes and rivers. For Clausewitz, mountain territory became a playing board of possible dead-ends, useful to those who knew how to anticipate an enemy's movements but deadly to those who were too slow. Swampland meant slowing down one's movements, or operating only on a narrow road. Unlike previous military theorists who had generalized about roads as tunnels that could be cut off, Clausewitz offered a formula for considering territory on a national scale. Each type of landscape corresponded to an analogous array of possible movements, and to a degree of haste or slowness with which manoeuvres could be accomplished.¹⁰

Equally, each type of landscape corresponded with a psychological profile of its inhabitants: libertarian rebels tended towards the mountains; republican communes to rich valleys. Mapping allowed the sophisticated general to understand his enemy's goals and probable movements, as well as the political risks of military engagement. By the early 19th century the precise mapping of territory for the social, political, and military potential it held had become a major metric of success in planning.

Anticipating Enemy Action

A second characteristic of modern military strategy developed with the refinement of the theory of anticipating enemy decisions by reflection on historical battles and their counterfactuals, or possible results as they might-have-been. As Azar Gat has shown, the earliest theorists of 'strategy' per se attempted to refine their methods for anticipating the future by deriving invariable rules of warfare from historical experience.

Writing in 1805, the British engineer William Thomson argued for such a use of ancient and modern history to prove the existence of unchanging precepts of battle. Typical of the genre, Thomson focused on the 'stratagem'; a cunning surprise sprung on the enemy, as the sort of manoeuvre that can be effectively derived from understanding the past.¹¹ Thomson's text began with a long series of the stratagems of the Persians against Egypt and continued through Rome to his own era. Battle, Thomson asserted, turns not on the will of God, nor even on greater numbers, but on 'the astonishing effects of surprise': the zeal of the troops, and the general's use of an accident as an advantage. The good general is therefore very sensitive to change. He is characterized by 'coolness, discernment, and prompt contrivance'.

By schooling himself in history both ancient and modern he may deepen his sensitivity to both what the enemy expects and what kinds of developments are possible.

From 1801 to 1805 the Prussian *Militarische Gesellschaft* began to emphasize the study of history as a training ground for the projection of alternate military possibilities. But the Prussian school still predominantly excluded nonmilitary factors in their histories and analyses; these were counterfactuals about territory and logistics. Their generals were trained to analyse only what could be mathematically calculated.¹² Strategy only developed into formal military theory in the aftermath of Waterloo as theorists attempted to characterize Napoleon's victories.¹³ Under the two most prominent theorists, Henri Jomini and Carl von Clausewitz, the task of understanding the future through a series of formalizations gained a new richness that had been excluded by 18th century reliance on strict metrics. Historical training thus became a staple of military education. Sandhurst officers were instructed to travel with works of history, although cautioned that the books are too 'heavy and inconvenient in the carriage' to be taken on campaigns.¹⁴ Campbell's suggested reading included a list of some 100 books, from Herodotus and Livy down to Jomini and the campaigns of Wellington.

Strategy sharpened the effects of the last century's technologies through a new way of modelling alternate futures from a more subjective, nuanced, and experiential level. Essentially this was an innovation in language and psychology rather than of technology. Machiavelli narrated Roman wars without going into the counterfactual. We can date an innovation in historical writing about battles to some time between 1760 and 1805, with a further development between 1805 and 1813. The first development was to specify exactly what had harmed generals on the field. Writing of the Battle of Fontenoy (1745) in the 1790s Admiral Grimouard cited the British commanders' errors.¹⁵ The formula consisted of statements like, 'Lamentably, Hannibal did not know about x.' These histories stressed the actual conditions that circumscribed the decisions of generals. The task of the general was to gather as much information as possible and to respond systematically, the task of the historian to understand actual conditions as they had been, including existent conditions unknown to the general.

As military theory embraced history, writers differentiated one era from another with increasing nuance. William Thomson's *Memoirs* divides the history of warfare into three stages of technological advance: before artillery, after artillery, and the guerrilla warfare of the American Revolution. History now taught what abysses separated one epoch from another and one culture from another. Winning might involve adopting the newer technology before one's enemy, but such anticipation also required understanding the technology most appropriate to fighting one's opponents. Impressed by Napoleon's accomplishments, Major General Gerhard von Scharnhorst pressured his Prussian officers to study national character and the personality of the French infantryman.¹⁶ The general trained in history then had to approach ages and cultures different from his own with sensitivity. Full understanding of actual conditions in the past, including a general's constraints by time, culture, and ignorance, implied being able to consider the likely course of his decisions with sympathy. This implied guessing where the enemy would move in time, offering the possibility of a

subversive trap like those employed by Napoleon. Second-guessing generals also demanded a different way of writing history.

By the early 19th century the counterfactual subjunctive opened up clauses with statements along the formula of 'had the general done *x*, then *y* would have resulted'. The antecedent *y* could be developed in some detail as to how the general would have approached the landscape and what other problems might have intervened. The formula differs from that employed by Admiral Grimouard and others in the 1790s, for it employs the subjunctive voice for the verb, implying the writer's ability to distinguish the possible futures that unfold from a certain point, as if the writer himself had been there. It is in this spirit of sensitivity to the stratagem that William Thomson employed the counterfactual subjunctive in his military memoirs of 1805, arguing about what such a general 'would have' done had he only known that the endless mountains he imagined before him were in reality a last pass before a great plain.¹⁷

The previous generation had thought in terms of various pathways through actual conditions. Different mountain passes could be taken to a certain territory, different battlefields would privilege different kinds of battle – thinking expanded in space rather than in time. By the early 19th century, thinking like a general became a question of identifying possible conditions that could be established by one's actions. These were projections that demanded an imagination of choices as they expanded in a sequence of causes over a period of time. The military historian writing to advise generals about how to learn lessons from the past now played a game of truly alternate histories. Painstakingly researched theory about possible enemy responses therefore offered a second major metric to the legacy of modern strategy.

Information and Rapid Military Response

By the 19th century, most of Europe was planning for the future. To a far greater degree than the 18th century 'war of posts', Napoleonic strategy transferred the battle to the library and war room. Beginning in the 19th century there came the possibility of virtual war. Rational battle could be played out in a hypothetical future, a war of deterrence and veiled threats on the one hand, and of secret plans withheld on the other hand. Early 19th century theorists toyed with the dream of the 'war of posts', an Enlightenment fantasy of bloodless war conducted entirely by virtual means. Governed at a distance, battle lost the immediacy of touch implied by *taxis* and was transferred to the realm of sight and visual abstraction. The result was that the planning of war now took place far from any battlefield, in the modelling of the generals, engineers, and cartographers responsible for drawing up possible futures.

As generals competed with each other for the most sophisticated anticipation of future movements, a quickly undertaken response offered the most promising possibility for controlling the future better than one's competitors. The third development in the evolution of modern strategy relates to the premium placed upon rapid response.

The logical extension of good planning was that the enemy was perforce taken by surprise. According to the 19th century military historian James Glenie, strategy's success depended on harnessing the future. He marvels at 'the astonishing effects

of surprise; the wonderful power of novelty; the vigour, impetuosity, and success of an attack'.¹⁸ In the writings of Glenie and his friend William Thomson, technology and good planning make possible the most important tool of battle, to surprise the enemy.

The term 'castramentation' appeared in the late 17th century, referring at first to the art of surveying a campsite upon the ground. Surveying grew to include methods of arranging sleeping soldiers so that they could spring into regimentally organized action 'at a minute's notice'. So crucial and arcane was this knowledge that the term eventually began to refer to whatever wisdom an old soldier used to reckon a situation.¹⁹ Knowledge of rapid response, then, became the key to the final revolution in the construction of a new science.

Napoleon's revolution was to systematically plan in advance with a mastery of the contingency of 'surprise and novelty' that the 18th century dialogues on stratagem had advocated. War by strategy depended on knowing more about actual conditions than the enemy did. Post-Napoleonic warfare benefited from the discoveries of the past: more exact cartography, abstract and generalized systems, all of which served to define a situation and to project it into the future.

As formulated by Jomini and Clausewitz, these distillations of theory from military history were what had allowed Napoleon to succeed. We have good reason to take this praise of psychology and rich modelling with a grain of salt. Of at least equal importance were the army's size and its zealous response, characteristics resultant from Revolutionary conviction and meritocratic recruiting rather than pure Napoleonic genius. John Lynn has argued that even Napoleon's speed was a product of rank-and-file enthusiasm.²⁰ Rapid response met certain needs in the 19th century, and its reception was overwhelmingly positive.

To a far greater degree than mapping or anticipation alone, the success of rapid response depended on a tight set of criteria unique to the early 19th century. Within the context of mass mobilization, against a background of a Europe where every state was planning for map-directed engagement, rapid response offered a psychologically and historically adjusted solution to a strategic problem. Thus within its proper context, rapid response was another tool among many which could be deployed by a culturally aware general intent on waging war to win the long-term peace.

Planning for Future Stability

Trained to historical and diplomatic reasoning about long-term peacekeeping, all innovations of 18th century strategy stemmed from by an obsession with political stability. That century's concern for tabulating unknown futures was expressed alike in the historical study of cultural prototypes, the mathematical search for accurate probability theory, and the projection of battles upon the map.

Modelling took the form of generalized military games that represented tendencies in real-life battlefields. Thus mathematical and topographical analyses were the first stages of a systematic knowledge that would later contribute to strategy. Detailed mapping helped to formulate war as a series of choices with different

outcomes. French generals theorized how such a battle would work in the 'war of posts', a model dating from the 17th century campaigns of Marshal Henri Turenne and Count Raimondo Montecuccoli. A general could contemplate the 'branching paths' that forked from any post, weighing possible threats and choosing the best position possible.²¹ One general posed a threat by taking one post, and the enemy general responded by taking a new post, until one was unable to move without engagement.

Such provisions for future projection gave way to a utopian prediction: ultimately, a world of generals who theorized about war could spell the end of war. The 'war of posts' could theoretically be conducted entirely in virtual reality, with generals merely predicting each battle's chance of success or failure, then conceding the war to the victor before the first shot was even fired.²² The premium on control of information lay beyond more systematic advantage over the other side: it lay with the promise of creating a more predictable, systematic way of waging war, where nations and generals would act so rationally that violence would seldom be necessary.

The modelling mindset ultimately took the form of conventions for military training that enforced generalization of and comparison between planning strategies. This was the wargame, whose adoption may explain another reason that Napoleonic strategy was welcomed as a fair and just art. Wargames, played upon two-dimensional boards with counters that represented military forces of varying might, suggested a Cartesian equality of players. Finally, military strength would be defined by mental agility, rather than sheer might, fate, or divine will. The wargame, like the innovations in mapping that preceded it, allowed the general to extract generalizations about the circumstances around a battle.²³ The wargame allowed the military to make generalizations about the relationship between players with armies positioned differently. The spread and refinement of wargames from an intellectual exercise into a deliberate abstraction of battle falls in the first decades of the 19th century. As in chess, the starting strengths of both sides were matched. Not fate, but skill and intellect and understanding unfolding alternate futures, determined success.

As the new habit of imagining possibilities at a distance spread, it became one model of polite social behaviour and for detached intellectual analysis. Despite Europeans' long familiarity with it, chess playing did not occupy a place in London's commercialized centres of leisure until the era of the Napoleonic Wars.²⁴ From 1790 onwards a proliferation of chess-oriented clubs sprung up, and 'chess clubs' flourished through the 1830s, at which point the game had acquired sufficient interest to become a general cosmopolitan and pedagogic institution.²⁵ By the 19th century the conceptualization of the wargame had expanded. Board games for training and popular amusement appeared in Britain to celebrate Waterloo and proliferated during the 1820s.²⁶ By the 1840s the Prussian school used miniature soldiers and dioramas to refigure Napoleon's battles, effectively turning all of military history into a counterfactual garden of forking paths. These games ensured that all commanders felt that their best weapon was simply knowledge of the future, relying on clever and systematic planning rather than on informers or interior betrayal of the enemy. If the Napoleonic battlefield was bloodier than any before it, the war room was less violent than ever before. Training commanders in military strategy meant

encouraging them to think of themselves as playing a game where only intellect sorted victor from loser.

The long-term effect of this convention in military training would be a mindset that reckoned each battle as a metaphorical chessboard, governed by easily generalized rules and conventions. During the 19th century, military academies like Sandhurst standardized the education of the military elite. Chess provided a model teaching-tool, clearly demonstrating spatial aspects of territorial operations in gambit. Moreover, chess was easy to study, replicate, compare, and teach. Simplicity and ease of replication offered standards for judging what aspects of military thought could be effectively conveyed within a mass education system. The war of posts, the echelon system, and other standardized methods of describing the progression of battles offered a metaphorical chessboard, linking theoretical games to real-life examples, all the while retaining the simplicity and ease of replication necessary to military professors. Eloquently satisfying the standard of teaching, chessboard type thinking became a remarkable aspect of military instruction at the academies.

Simultaneously, 19th century theorists had begun to remark that warfare had gained complications whereby battle differed markedly from the simplified rules of the chess game. Nineteenth century innovations in counterfactual history offered a tool for strategists interested in a more complicated kind of thinking about political stability. Clausewitz redacted Prussian teachings with greater nuances: more detailed understanding of the landscape and clearer degrees in reckoning the course of a battle; ideas about the psychology of generals and the study of different cultures.²⁷ Increasingly, then, the means to best one's adversary in advance was not to acquire more maps, but rather to thwart his expectations.

Napoleon did in fact engineer a major revolution in terms of the limits of violence acceptable in warfare. Modern strategy could have recreated the bloodless 'war of posts', where the threat of violence was enough to deter actual fighting in most circumstances. But this possibility was overturned by the course actually taken by Napoleon. The Emperor's thirst for a 'decisive battle' meant that Western warfare reached new heights of carnage.²⁸ By all accounts this startled Napoleon's contemporaries as well. Recent historians have argued that a major part of the French leader's innovation was to trick his opponents by descending to the 'criminal level' of statesmanship.²⁹ As John Lynn writes, 'As such, he did not so much *outfox* as *dumbfound* his foes.'³⁰ The picture that emerges, of an amoral conniver without respect for his opponents, is hardly the model of systematic analysis propagated by the later theorists.³¹

This suppression of the memory of Napoleon's connivance in favor of his more heroic qualities prefigures a problem with honesty latent in military strategy to this day. The 19th century repression of Napoleon's trickery in the name of analysis was aided by the theorists' fabrication of strategy as a morally 'clean' approach to battle in its difference from stratagem. Napoleon's innovations instead pushed warfare into an intensifying spiral of bloodshed. With the invention of the conscript army, whole nations followed their leaders into battle. Yet among contemporary military theorists, strategy was held to be more responsible, more ethical, and ultimately more just than its predecessors.

Nineteenth century strategy had progressed to a stage too complicated for the theoretical peace of the chessboard to offer any real solution. A chessboard opening of elaborate skill would theoretically be enough to deter the enemy before the first gunshot was fired. Psychological war promised bloodless war. The early theorists constructed strategy as the engagements of pure intellects, a clean war where victory would go unchallenged.

By about 1810, then, strategy was conceived of according to three criteria: (1) the use of visualized information to determine possible movements, (2) predicting enemy action, and (3) quick, decisive military action, all conceived within the control of information on behalf of future stability. Strategists had, however, in their quest to standardize the teaching of strategy, minimized many of the conditions under which victory remained secure, instead encouraging students to think of war as a chessboard in which all victories were final.

We have seen how such concerns permeated the development of strategy. In mapping, the earliest-developed of the criteria for strategic planning, concern for generalization and what empathy for the enemy was implicit; mapping defined terrain that both parties would have to encounter. In anticipation of enemy action, early theorists emphasized the use of historical and cultural knowledge to provide empathy for the enemy and knowledge of long-term stakes. In the last developed criterion, rapid response, concern for empathy and long-term planning was more tenuous: rapid response developed in the Napoleonic camps, when the actions of other European generals had become so predictable as to work like a chess game; here, rapid response could have clear effects, not at all clashing with the concerns for long-term cultural concerns. Thus the concern for generalization, cultural context, and empathy was always present in each of the kinds of planning used by classical strategy. This equilibrium on behalf of future stability lasted so long as cultural knowledge remained a major criterion of good strategy.

In classical Clausewitzian theory, control of long-term victory was defined in the form of three categories, each of which ensured constant attention to long-range goals: (1) to generalize a field of knowledge by making certain key points; (2) to include the cultural context of a situation; and (3) to empathize with one's opponent's reactions. Military academies enforced a chessboard-type mentality which emphasized generalization, diminished cultural context, and limited empathy. Despite the noble goals of educational innovators, the mentality of the chessboard produced an elision of great fields of knowledge for the sake of mass education. Future generations, increasingly raised in ignorance of other kinds of study, would lack either the cultural knowledge or the maintained emphasis on future stability that had originally ensured the success of modern strategy in the first place.

Stratagem, the New Kind of War

Traditional strategists theorized about achieving military success from the backdrop of a world composed of equal players, predictable cultures, and relatively stable technology. By the early 19th century, an increasingly intricate military and political landscape led to the destabilization and eventual collapse of strategy as it had been

traditionally practised. As a result, 19th and 20th century strategists began to make short cuts in good strategy, theorizing about dirty tricks or 'stratagems' which might win short-term goals, even while possibly jeopardizing longer-term aims.

Contemporary strategy relies on priorities formulated in the early 19th century. Then, generals were increasingly reliant on simplified metrics of control like the map, and used signals technology for quick advantage. Theorists increasingly played down the potential costs of war by stratagem. Bound to teach only the most replicable and easily standardized forms of prediction, 19th century military institutions were willing to jettison restraint, human intelligence, and holistic planning.

We enter the 21st century with military institutions whose tools, philosophy, and knowledge-gathering mechanisms derive heavily from 18th and 19th century military theory. These mechanisms emphasize the gathering of visual territorial information and place a premium on using that information to predict and control the future. They similarly envision success in terms of quick in-and-out operations, which emphasizes the mechanical elimination of all possible enemy combatants over a more holistic understanding of war as an extension of politics. Wars that meet these criteria therefore easily gain military institutions' approval. In the next sections, we shall examine how military institutions arrived at their priorities.

The roots of the new kind of warfare with its emphasis on surprise were with that generation of chess-playing generals schooled in the first military academies. The new class of military professionals, comfortable amid maps, lacked experience in diplomacy. Military theorists soon noted a different way of making war, and a shifting series of priorities, which typified the way these generals approached problems.

When traditional strategy failed, the new generals fell back on generations of medieval practice for their inspiration. Nineteenth century theorists describe these tendencies under the category of 'stratagem'. Unlike the 19th century word 'strategy', the word 'stratagem' entered modern language in the 15th century and remained a staple of military science for the whole of the modern period.

In his dictionary of 1816, Charles James contrasts 'strategy', a system of knowledge by which to arrange war from tactics to its entire shape, with 'stratagem', a feint or ruse, for which 'it is impossible to lay down any specific rules'. Like strategy, the stratagem escapes definition because it depends so entirely on context: 'times, circumstances, and occasions'.³² Both terms depended on anticipation of the future, and their etymological relation threatened a slippage.

As the two words became juxtaposed around 1800 as competing models for anticipatory knowledge, military theorists found themselves with the task of constructing each.

Struggling to explain the distinction between the words, theorists increasingly defined 'good' strategy in terms of the moral rectitude of the general in question. A.T. Gaigne's *Nouveau Dictionnaire Militaire* of 1801 gave no entry for strategy. Gaigne instead carefully marks the subtle shade between good and bad stratagem: 'Il seroit beau et louable de ne faire usage d'autres ruses que de celles procréées par l'esprit et le savoir; mais malheureusement il n'en est pas toujours ainsi [It will be fine and commendable not to use ruses other than those created by the spirit and

knowledge but unhappily it is not always thus].’ Bad stratagems of pure deceit are treason, but good stratagems make a great general.

Even worse, in the context of stratagem, many of the qualities praised by classical strategists took on a new and sinister meaning. The technologies of war necessary for trapping the future – mapping, cultural reconnoitring, spying – made many uncomfortable. As Thomson explained, training in strategy, like training at arms, depended on long exposure. Training and habit were fair and traditional means of looking into the future. In wargames like chess, after all, both players began equal, and only their comparative awareness and anticipation determined the victor.³³ Stratagem, however, trespassed onto the future by gaining knowledge without hard labour. As such, stratagem’s occasional reconnaissance of what the enemy might do threatened a whole series of dirty tricks that took warfare away from the chivalric model of skill.

Unfortunately, long exposure, training, and habit offered scant definition to those trying to nail down the difference between strategy and stratagem. As theorists excavated the terms, only two criteria by which one could distinguish good strategy from bad rose to the surface: the moral rectitude of generals and the view to the long-term future. For theorists wanting to explain proper military procedure to the rubric-oriented military academies, moral rectitude and long-range thinking were disappointingly vague concepts.

At best, theorists could point to stratagem as the breakdown of a code of honour, which ultimately threatened to diminish standards of decency between allies.³⁴ Stratagem was a polite word for trickery, and trickery was but one step away from treason, as Gaigne pointed out in his 1801 *Nouveau Dictionnaire Militaire*.³⁵ Strategy was only superior in that it claimed a relationship to masterful knowledge rather than to the deceit of pickpockets and charlatans.³⁶

Theorists could still point out that long-term thinking was definitely better than short-term thinking. Stratagem was essentially a war of spying, based on coercing deserters, deploying informers, and mastering terrain. It was knowledge that could be bought, rather than knowledge freely acquired through labour. It depended, wrote Thomson, on merely anticipating the next moment, whereas strategy depended on anticipating many events in the long future. Thinking about historical timescales and the rise and fall of nations was felt to be one marker of good strategy.

Some explained strategy in terms of the grander scale of its thinking about the future. Strategy was merely stratagem written upon historical rather than momentary timescales; strategy consists of the stratagem of mastering technology before the enemy does. Of course, such a definition was broad to the point of losing any definition of security or restraint: if good strategy merely took on historical timescales, a plan for conquering other continents and races so as to secure a German monopoly might begin to look like good strategy for holding one’s territory.

Writers like Glenie found it convenient to blur the line between strategy and stratagem. In explaining strategy, the British military historian and engineer James Glenie insisted on ‘the effects of surprise’ and ‘the power of novelty’.³⁷ Indeed this emphasis on novelty is the rationale for the three-part division of the history of war of William Thomson’s memoirs for which Glenie wrote the introduction: ancient war, modern war until the invention of gunpowder, and modern war since the

invention of Prussian discipline. Thomson insists that each of these technologies create a revolution in warfare that is used as a greater stratagem by those that understand it. Artillery expands the range of the attack, and organization of artillery into the column provides a swift and mobile deployment that surprises the enemy. In short, inventing something new means a surprise for the enemy; it works, and it breaks no major rules of classical strategy, thus it meets all sufficient criteria for good planning. If ambush and theft were still morally hazy, surprise by invention was a good plan.

These 19th century intellectual exercises exemplify an awareness that the training provided by military institutions was incomplete; they emphasize that generals were not learning about the long-term future, and that long-term thinking was necessary if present actions were to secure the peace. Glenie floundered when he attempted to define strategy, failing to come up with any decisive mechanism in war that would avert a one-upmanship of bloodletting, and would instead direct the exercise towards peace.

Increasingly, then, military theorists gave up the difficult matter of separating good history and good ethics from bad, and rested on the easily generalized, replicated, and measured principles of planning which they knew very well from classical strategy. Among 19th century generals, 'good strategy' was still framed in terms of mapping, prediction, and quick movements. Monopoly and invention quickly arose as acceptable forms of successful planning, while historical and psychological speculation about long-term stability were edited from the textbook.

By surveying the last 400 years of strategic thinking, we can glimpse exactly what fell away. The claim of planning, mapping, and anticipation lay in the ability to achieve peace. Good planning achieved peace by recognizing whatever needs or positions the enemy might eventually take, and meeting each of them in advance. To do so, soldiers and generals would necessarily enter a humanistic project of understanding the territory and the people – acting as Wellington in the Peninsula and France to dissuade their soldiers against disrupting or insulting local customs, and where necessary, punishing those soldiers who did. Cultural thinking about intelligence had similarly been implicit in all earlier phases of diplomatic moderation in war: restrained surgical cutting of supply lines rather than long occupation of territory, for instance, being the principle behind rapid response. No longer considered something that could be taught, common sense about the uses of restraint now began to rot.

Forecasting to keep the peace was indeed the end goal of planning, and the most constructive and intellectually challenging kind of planning possible. As philosopher Daniel Dauvois would later write, strategy's claim to be a noble science of truth rests on Platonic prejudices about its use of mimetic synthesis, rather than representation, to acquire knowledge. Strategy is a kind of 'representation' as opposed to a 'simulacrum'. Good strategy projects into the future by synthesizing information, rather than by merely regurgitating what exists in the present.³⁸ Pure strategy, then, as opposed to its diluted form of stratagem, could only take place with complex counterfactual thought, the kind of thought that would embrace psychology, anthropology, and history in the name of political stability. Strategy would mean rigorously applying only the particular form of violence appropriate to a particular national and

psychological situation, not necessarily the most *rapid* or merely *visualized* and *practised* tactics.

The promise of an end to war had been decisively overturned. In the 19th century world of unpredictable generals and ever-larger armies, strategy now required hard thinking about historical truths, diplomatic politics, and the psychological profile of generals and people. Only a diplomatic, psychological, critical, and historical perspective on warfare and nations could offer a strategy where victory produced peace. By the 19th century, that is, strategy's criterion of 'planning for future stability' had become markedly more difficult. By the 1830s, military theorists found themselves overwhelmed by their attempt to define these hazy, humanistic criteria. Military academies would continue to teach mapping, anticipation, and rapid response, but planning for stability, the critical keystone of strategy, was too complex for the academies. Nineteenth century strategy failed to articulate any rigorous model of appropriate tactics in the light of pure strategy. As a result, strategy entered a state of decay, and only emphasis on the decoys of stratagem (mapping, rapid action, and anticipation) survived to offer a basis for 20th and 21st century military planning.

Stratagem and 20th Century Theory

During the 18th century, military planning integrated new skills in projecting the course of battles and thus christened new understandings of when and how to deploy that knowledge. As we approach a new stage of warfare, American technologies have mushroomed without a commensurate innovation in strategy. That is, the overwhelming emphasis remains on mapping territory, modelling enemy movements, and moving quickly, three priorities inherited as relics from 18th century Europe.

The next sections will handle how much harder these forms of violence are to predict, when compared to 18th century use of strategic information.

Over the course of the 20th century, many military thinkers have analysed the new technologies and the globalized geopolitical scene, attempting to explain and react to increasing and varied forms of violence. However, a review of planning idioms from the 18th century puts many of their reflections in context. All told, most 20th century thinking about how to forecast and control enemy activity remains firmly rooted in the idiom of stratagem.

In a 1983 essay in the journal *Long Range Planning*, Roger Evered of the US Naval Postgraduate School explained how strategy had changed during the postwar era. He identified two major trends: the acquisition of weapons and technology, and the use of military force against non-military industry, raw materials, and civilians. The late 20th century ushered in an epoch of wars of technological escalation, where the battlefield extended to all quarters of life. With the expansion of war into an intelligence game came a change in the meaning of peace: like 18th century castration where the encamped army slept ready to erupt at a minute's notice, late 20th century peace was ready for war. If war was now played out in everyday time

and if the battlefield had expanded, acts of terror counted as acts of war.³⁹ Evered's thinking required new definitions of battle and of combatants.

Evered's essay extended a Cold War theory about the omnipresence of war in modern life. In a 1975 article in *Social Research*, Wolf Graf von Baudissin argued that during the Cold War the idea of victory was rendered obsolete. Peace meant only war's continuation by the constant gathering of information necessary to keep violence at bay.⁴⁰ In this framework, war by violence gives way to war by propaganda – technically quite peaceful at home in New York or Berlin. Yet as French political scientist Alain Joxe points out, the non-violence of Cold War deterrence has a corollary in the Third World. Whatever threat of violence is implicit from New York resounds because threats are actually carried out with the full force of violence in Vietnam or Kosovo, where the military actually flexes its muscles. The Third World thus becomes the battlefield where ideological wars for the fate of the planet are actually fought.⁴¹ From a Third World point of view, the chessboard of peaceful equilibrium is nowhere to be found, and the 21st century represents instead the culmination of a century of violence unlike that ever seen before in human history. Notably, both theorists and generals were concentrating on the mastery of surprise and total war indicative of stratagem; missing from both was the concern for cultural, anthropological, and social knowledge typical of strategy. The theory of constant war plays down a state of actual continuous violence without offering a plan for its solution.

The culmination of 20th century stratagem theory was to lobby for a programme of 'excessive force', which, it was thought, did promise future stability by simply annihilating the possibility of future adversaries. Strategizing against the arrangement of the enemy now took a new form, not by careful deployment of cultural knowledge to secure the shortest possible route to permanent peace, but by asymmetrical use of force at a distance. In this case, excessive force was to be enabled by the First World's superiority in technology over the Third. Such excessive force, unengaged with empathy for the enemy or generalizations about the eventual possibility for peace, deployed no strategy, but rather the quick-fix solutions of stratagem.

In their 18th and 19th century European context, the control of territory and surprise of the enemy were often enough to deter reprisal. Napoleonic war could often be won or lost by a single battle, as at Austerlitz, where the Austro-Russians effectively surrendered on the field. Within a fairly simple context like 19th century nationalism and competing land armies, this sort of outcome could be brokered between rival armies with some success. Yet the context that made stratagem successful then no longer holds. In a context of international terrorism and nuclear war, control over the enemy's possible movements never actually controls the possible spread of violence by the storing of nuclear arms, incitement of others to desperate violence, and spontaneous suicide bombs. If using surprise and violence to win a single battle could win a 19th century war, this is simply not true in the 21st century. No single surrender in Iraq or Afghanistan produces wholesale surrender of a larger, holistic nation-state. Theories of an unending state of violence insist on repeated rapid launches of stratagem, ignoring the fact that such tactics no longer suggest any resolution within a modern political and cultural context.

More recently, international observers have highlighted how the American tendency to deploy force at any cost actually creates the unending war its theorists predicted. As Gregg Easterbrook writes, 'Paradoxically, the runaway American victory in the conventional arms race might inspire a new round of proliferation of atomic weapons, because now only a nuclear state – such as, perhaps, North Korea – has any military leverage against the winner.'⁴² Living according to the unending war theorized by von Baudisson and Evered means that all parties, from Iran and North Korea to China and India, will naturally do their best to compete with the arms escalation practised by America itself.

This escalation only makes American military the more fragile, for its entire strategic success is made to depend on a monopoly of arms and information. As Iran clamours for nuclear weapons, we would do well to consider how short the US monopoly on the technology of the future may be. In October 2003 China announced that it would join the European Union in releasing Galileo, the first non-US satellite system capable of running a Global Positioning System (GPS).⁴³ Since 1993 GPS has been made available to citizens, but its control only by the US made the stratagem of total control possible, such that the US disrupted signals over Afghanistan in 2001.⁴⁴ Military theorists are well aware that in the network-enabled digital age the American hegemony of technology and information will not last.

Others writers have considered more structural dangers within the emphasis on computerized technologies for mapping, unaffected by diplomatic concerns, namely, the liability of targeting the wrong opponent. Massachusetts Institute of Technology Professor Barry Posen warns that although US strategy has adapted since the First Gulf War (1991) to understand warfare in the cities, it is just this idea of attacking civilians that is misguided.⁴⁵ He warns: 'Combat within cities minimizes American military advantages and offers the greatest possibility for the United States to make mistakes – to harm civilians and create the kind of collateral damage that can cause consternation in the Arab world and here at home.' Posen explains that such a mismatch of strategy with situation destines the US for the equivalent of World War I's endless trench warfare.

The decay of strategy in the 19th century was typified by an abandoning of the end goal of securing the peace when faced with complicated information. Twentieth century strategy has been continuous with the 19th century in its emphasis on rapid response, planning, and technology, and a constitutional disinclination to address the problems of cultural difference. The trend is exemplified by Francis Fukuyama, whose early writings in the 1990s concluded that it was impossible to conduct exactly that type of rational planning for cultural equilibrium which strategy was designed to secure. Afraid to take on Clausewitzian questions of psychology, diplomacy, and preference, such writings give up on the idea of a political equilibrium. Instead, the conclusions they offer from studies of culture are surprisingly simplistic: breaking down the world into immense incompatible zones, recommending a hasty end to cultural intelligence-gathering, and its replacement with violence. In so doing, these conclusions replicate the pattern of 19th century stratagems.

With the technological advances of the early 21st century, American warfare has access to systems for projection into the future on an unprecedented scale. Virtual

simulations allow commanders to plan for contingent futures, to drill troops in each manoeuvre before its execution, and to test designs for new weapons in virtual reality before the weapons themselves are manufactured. Like the strategic revolution of the early 19th century, this revolution built upon the concerns of previous generations of strategists. But in the trail of strategy since the mid 19th century, these technologies provide little interface with long-term planning. Instead, they advance the other goals of diluted strategy, the stratagem: mapping, anticipation of enemy movements, and rapid response. I shall now turn to analyse each of these components of stratagem as they dominate current military theory, intelligence, and training.

Modern Mapping

Late 20th century technologies advanced the ability to model a landscape with infinite detail. Developments included the birth of 'smart weapons' in World War II, the expansion of mapping techniques from radar and sonar into satellite communications at greater and greater definition, and the development of satellite signals able to communicate with weapons anywhere on the globe. These offered a background of extremely nuanced information about potential battlefields.⁴⁶ Similar to the developments of the 18th century, these innovations offer new models for conceptualizing time and space.

New to war is three-dimensional GPS, allowing strategists to differentiate enemy headquarters from a parking lot. Urban plans have been used to plan attacks in advance, and soldiers on the ground have arrived in Iraq equipped with a map of the streets.⁴⁷ To these innovations has been added an incredible specificity in targeting. The fabulous sorcery of predicting the weather is now a reality. The United Kingdom's Mobile Meteorological Office teams can predict weather of a future event enough to alter tactics, information crucial to making sure that a smart missile hits its target rather than a nearby school.⁴⁸ The laser-guided bombs of the First Gulf War have now evolved into GPS-guided bombs. Microwave bombs disable electrical equipment without harming individuals.⁴⁹ Thermobaric bombs are capable of heating storage containers to kill anthrax without damaging infrastructure. 'Hard target smart fuse' bombs can be directed to a specific floor of a high-rise building.⁵⁰ Access to landscapes dangerous to humans has increased as well. Unmanned combat vehicles like the Global Hawk and Predator, fresh from the research beds of DARPA (the Defense Advanced Research Projects Agency), appeared in Afghanistan.⁵¹ Now attacking, as well as planning, falls into the category of governance at a distance.

Human technology has followed the same concerns of planning, mapping, and anticipation. The innovations have been enabled by more sophisticated digital technology on the one hand, and increasing eagerness to employ technology towards human situations on the other. Since the first military-video game alliance in 1997 between MAK Technologies and the US Marine Corps, an injection of funding has propelled virtual reality forward and all sectors of the military have embraced immersion technology for human training purposes.⁵² Aggregated data means that soldiers training together can experience the same geographic terrain, attack and response

when undergoing training.⁵³ Entire cities have been manufactured for the purposes of training Marines in urban warfare, while the Marine Corps Urban Warfighting Laboratory has staged invasions of Chicago and Oakland to prepare the corps for foreign cities.⁵⁴

The most recent improvements in immersive simulation implement ever more varied and sophisticated models to better approximate reality. Video game partners have provided the military with simulation that offers an unpredictable, game-like course of events, and academic partners have paired with Hollywood directors and actors to provide simulations with realistic humanitarian crises in the midst of combat.⁵⁵ Technology has widened the field to include the city, the civilian, and the modelling of everyday movement worldwide.

Modern Rapid Response

The technology of the First Gulf War hastened the military trend to look for technologies that promised instantaneous knowledge of the future, as targets could increasingly be selected in advance and soldiers drilled in possible futures. With this development came a dangerous seduction for policy makers. Although the military's models offered preparation for the most probable future scenarios, the strength and breadth of modelling seemed to promise absolute knowledge of the future. Defense Secretary Donald R. Rumsfeld was wooed at the 2003 Iraq War's outset by new military theorists who pressed for incisive 'surgery'.⁵⁶ Theoretically perfectly implemented technology would cause the Iraqi regime to collapse immediately: the speed with which technology worked seemed to suggest that cultural change could come just as quickly.

Pentagon theorists fell victim to a nonsensical slippage between technological and cultural change. The illusion of the battlefield's limit was a major factor in the popularity of the war in Iraq at home. In December 2002 the *Washington Post* reported, typically, that the war would be over in a week.⁵⁷

The euphoria bought on by new technology has made room for strategy intoxicated by optimism instead of a rational reading of place and situation. In the 19th century, the great Swiss military theorist General Baron Henri Jomini warned that tactics had to be combined into completely different strategies in 'wars of conquest', those made to secure empire, and 'wars of intervention', those meant to secure a safer political alignment in another area. Of the latter, Jomini cautioned, 'the essentials are to secure a general who is both a statesman and a soldier; to have clear stipulations with the allies as to the part to be taken by each in the principal operations; finally, to agree upon an objective point which shall be in harmony with the common interests'. Jomini also cautions that for want of proper planning or policy, most wars of intervention have been disasters. In this such wars resemble 'wars of opinion', the terrifying nightmare of the strategist, which 'enlist the worst passions, and become vindictive, cruel, and terrible'.⁵⁸ This insight vanished in the face of faith in warfare as surgery, a faith occasioned by enthusiasm in new technology.

In reality, surgical air war has been followed by hand-to-hand combat in the streets. Moreover, the street interventions have been as dirty as any kind of warfare

in the past.⁵⁹ Speed, that is, only colonized the future by partial rule rather than conquering it. Speed deferred problems without solving them; as chaos theorists and historians suspicious of the counterfactual have argued, no attempt at analysing the future can account for all contingencies. Like the 10,000 unexploded bombs now buried in Kosovo, even modern technology leaves traces.⁶⁰ There is nothing surgical about this kind of war, except as it appeared in draft form from the war room.

French architect and theorist Paul Virilio is interested in the effects of digital technology and mechanical speed on contemporary culture. Virilio has analysed America's technologies of instantaneous war for the way they change decision-making. Virilio believes that fast-moving communication threatens democratic dialogue because command, commentary, and media fly too quickly for protest to matter. For Virilio, virtual technology removes battle from the spatial field to an electronic field inaccessible even to the opponent. The only realm in which such technologies can be combated, Virilio explains, is in the instant of relay and programming, a moment so removed that few opponents or observers have means to interact with it.⁶¹

Institutional Inertia

Innovations in planning have bounded forward with technologies unforeseen in 2001. Yet the dangers of counterfactual projection remain, and they deserve a quick review before we look at the strategy which these tools are to serve. Since the 19th century, military institutions in the age of stratagem have structurally minimized the importance of planning through cultural contexts, thus implicitly avoiding types of planning known to secure a peaceful future. The technologies that develop under a regime of stratagem are particular to the needs of planning, mapping, rapid response, and anticipation. Not only do the technologies of stratagem not achieve their ostensible goal of future stability, but because of their enforcement of institutional inertia, they also actually cripple other attempts at cultural analysis and holistic planning.

The key to understanding the structural damage of stratagem is understanding how stratagem permeates the institutions of military training and learning. Classical strategy transmuted into another form when 19th century military institutions found stable futures too difficult to project, calling for psychological and moral speculation well beyond the talents of many generals. The temptation is then to project only futures that can be easily mapped, plotted, and analysed with the mechanistic tools at hand. Implicitly, the kinds of reasoning allowed by post-stratagem institutions avoided complex reasoning and repeatedly enforced simplified projection of the future based on narrow sets of information.

Scholars who study planning across many fields have pointed out how simplified projection is usually inaccurate projection. As Niall Ferguson argued in his study of counterfactual history, projecting into the future is even less scientific than the act of writing history itself. In the non-science of history, scholars try to second-guess individuals (never predictable) through the pieces of evidence that have happened to survive (haphazardly).⁶² In a counterfactual projection of an alternate history, one temptation is to piece these unknowns together in a simplified chain of causes and effects: if there had been no French Revolution, there would have been no World

War I, because the France would have simply collapsed, according to British writer Hilaire Belloc. At this, Ferguson throws up his hands at a 'reductionistic' kind of inference about causation unacceptable to everyday reasoning.⁶³ After a certain point, the assumptions and elisions made by way of prediction rest upon a sea of so many unknowns that they become ludicrous.

Within military institutions themselves, the choice to pursue stratagem has lasting institutional consequences. One risk of a reductive system is to displace other, richer forms of knowledge not accounted for by the model. The Cold War emphasis on signals intelligence crippled America's preparation for Iraq by emphasizing technology acquisition rather than the training of human field agents versed in foreign languages and cultures.⁶⁴ A related problem may come from the deep discipline of soldiers' emotions, intuitions, and reflexes as they face the unknown. The British model of encouraging ground-level soldiers to converse with locals has been more effective both in terms of gathering information and for trust-building between civilians and the military. Meanwhile signals-reliant America lags behind in culture-based strategies: American propaganda techniques have progressed no further than the dropping of leaflets practised over 60 years ago.

The military has discovered how to discipline soldiers' emotions without considering how the battlefield could be moved to engage the enemy's emotional front. While the military has developed the technology of emotional training, the reports so far only demonstrate its use to further discipline the soldier, rather than in a more innovative direction of redisciplining the soldier into a tool of positive coercion by his linguistic skill, social accessibility, or peacemaking training. Positive coercion by market, propaganda, and anthropologically sensitive human technologies offer such alternatives to the present system of coercion solely by negative force of violence. With funding, research, and official support, they could grow into more powerful tools for the forecasting of peaceful human behaviour.

Instead, planning technology has several features that ultimately limit the possibilities for peacemaking within any effort engaged in by a particular military institution. By seeking to reduce habit to a set of pre-approved forking paths, technology may limit the good as well as evil paths of the future. Several generations of school children have been raised on the story of German and British forces singing carols and playing soccer during the Christmas 1914 truce. If today's soldiers are trained in an exact response, it is highly unlikely that their behaviour will reproduce such humane moments on the battlefield, even if they are saved from inexcusable atrocities. After the First Gulf War, consensus grew among cultural critics that the weapon's-eye view of destruction formed a habit in viewers of emotional numbness to the victim, similar to the euphoria of playing a video game.⁶⁵ Our standard propaganda cannot root out dictators, thus military violence becomes the only possible relief of an intractable political situation.

Finally, there is the threat that the innovations in human technology may numb the mind to new information. The new generation of immersive technology is used not only for basic training, but also for teaching officers command and control.⁶⁶ AAR (after action review) is used after training to calibrate soldiers' response to desired parameters.⁶⁷ Never before has soldiers' emotional response been so conditioned.

The strategy system, then, is being modelled to call into question a single rubric, to experience only the limited range of events that the virtual planners have accounted for. If human intelligence is limited to the collection of information about enemy whereabouts and plans, it falls into the category of extension of technology rather than innovation in strategy.

Herein lies the question: could cultural studies, history, and anthropology be wedded to military models? Knowing what we know about the success and failure of different policies in the past, would it be possible to train soldiers to enact increasingly human responses on the ground? Could the expertise of Conflict Resolution and Cultural Anthropology be added to charts of bombing patterns so as to exclude cultural icons from bombing, to train soldiers in deep, engrained patterns of reverence and dialogue? Would it be possible to win the culture war through using this technology on behalf of *cultural* policy as well as strategic violence? What limits to America's ability to seduce foreign nations into a single cultural mode would we face, and could America remain secure within a world of friendly but un-American fundamentalists? What would be the stakes in doing so? What leaders could be found, among contemporary institutions, so open-minded as to be able to construct a new strategy capable of taking classical future-modelling seriously?

A revolution in strategy capable of addressing America's new geopolitical position and tools would forcibly have to integrate long-term thinking about the long-range securing of the peace, not only in diplomatic circles, but also in the everyday training of soldiers. An entire arsenal of cultural knowledge and a complete strategy of continuous gestures would be necessary to so formidable a task as the breaking down of the natural wall between foreign cultures.

Conclusion: The Pitfalls of Monopoly

If the goal of strategy is to secure long-term peace, the culture of stratagem is designed for ultimate failure. Early strategists pointed that any exercise in planning must aim to hold territory with confidence, executing only the smallest interventions of violence possible, in the name of longer-term stability. As strategy decayed in the 19th and 20th centuries, theorists increasingly focused on the element of surprise as the pre-eminent advantage that promised military success in any given campaign.

In the classical 'war of posts', the uses of secrecy were negligible. Strategy represented competition on a chessboard where every player could theoretically anticipate the other's actions were he clever enough. Clausewitz and Jomini had both taken pains to describe the dangers of wars where victory depended upon surprise, classing them in a broader category of 'wars of ideology', where normal constraints on civilian–military difference were overturned. Jomini defined the war of ideology and the civil war as well outside the realm of common strategy. He continued to explain how strategy could do nothing to minimize violence, once such a war was underway: 'Although originating in religious or political dogmas, these wars are most deplorable; for, like national wars, they enlist the worst passions, and become vindictive, cruel, and terrible.'⁶⁸

Similarly, Clausewitz cautioned against wars where the expectations of different tribes came to a head. In *On War* Clausewitz cautioned again guerrilla fighting in the mountains, for instance, insisting that wars that depend on such a different knowledge as between the invader and the native result in extreme violence. In short, differences of ideology only rendered classical strategy useless, and forced armies to devolve to a state of barbarian violence. Clean war depended on the Cartesian equality in which both players could theoretically participate.⁶⁹

With the rise of difference between First and Third World in the 20th century, and again with the creation of an American monopoly on information and technology, a state of ideological difference was a given. Intelligence and spying themselves intensify the difference between worlds. The use of deception had been played down in Clausewitz and Jomini, and the 19th century had no equivalent to the Enigma and Banburismus machines of World War II. In the early 21st century, everyday military procedures depend on enormous levels of secrecy and deception. Sun Tzu's maxim that 'all warfare is based on deception' gained acceptance, as Sir Basil Liddell Hart raised the Chinese philosopher to the status of military prophet. By the time Roger Evered wrote his definition of modern strategy in 1982, America conceived of the essence of strategy as deception. Whether in the form of a monopoly on technology, a war of spies, or a war of falsely advertised motives, American methods consistently increased the difference between American and enemy expectations of how conflict would proceed.

The arsenal developed for military encounters in the Third World, where disparities of information were the greatest, particularly revolved around differences of expectation. The origins of these weapons lie in World War II, when new technologies appeared in the form of gyroscope-propelled bombs (used by the Germans) and various kinds of advanced code-making and code-breaking systems. Yet we should not accept that the gradual embrace of deception-based warfare was natural or easily accepted. As late as 1960, the American public was appalled at the public admission that an American plane shot down by the Russians had contained a spy sent on a standard reconnaissance mission for the country which had until lately claimed to be above counterfeit.⁷⁰ Since the 1970s, secrecy in arms has been intensified by technologies such as the B-2 stealth bomber and the F-117 tactical fighter. Outwitting the opponent has now taken the form of using technology not to outwit the enemy on a Cartesian playing field, but to overcome his access to the future, and so to ensure the continuance of instantaneously enacted, perfect violence, planned long in advance.

This distance of perspective on how battle might evolve was a death sentence for any remaining hope of an end to war. The American advantage of surprise effectively worked to monopolize all possible information about the future. American methods struck a path away from the game of small interventions and inventions in technology and knowledge, in which a bloodless war was possible. In classical war, a chessboard scenario was maintained by the positioning of armies around supply lines, such that battle with its surprises came only at the end of a large deployment, and theoretically the battle itself could be avoided once all hands were on the table.

Instead, a war that functioned mostly by surprise ultimately pushed one's enemies into a game of one-upmanship. Where modern powers sought to maintain a monopoly on all possible information about territory, movements, and attack, the enemy could only respond by trying to change the type of attack, movements, or territory where violence might happen. Fighting the monopoly of information meant suicide bombers in restaurants, mothers carrying bombs under clothes; in short, every possible distortion of the normal order of what counted as civilian and military, so as to thwart military intelligence, and so even the playing field once more. When strategy is an information war and a monopoly of information, the enemy's response will always be to thwart expectation. In general terms, that response must come by finding acts more traitorous or bloodthirsty than the information warriors have allowed themselves to predict.

In modern war, the final pitfall of stratagem comes when its emphasis on monopoly of information is achieved. Attempts at monopolizing technological advantage succeed in pushing war towards a bloody competition in which the only possible result is escalation of the unexpected. Violent terrorism, in the form of endgame strategies like suicide bombing, represents the only remaining defensive reaction to the West's unassailable monopoly of information.

If this is correct, we should expect violent terrorists not to be daunted by 'overwhelming force', but rather to react with ever more horrific acts of retribution. This retribution would come precisely because only the most inconceivable act of violence cannot be anticipated by the American machine. The result will be to remake war into a game that could only be won by holocausts.

Classical strategy depends for its success on aggregating ever more information of a more diverse character; historical, anthropological, and sociological. I have also shown that its successor, stratagem, emphasized only the pursuit and refinement of a limited register of information-gathering activities: mapping, anticipation of enemy action, and rapid response. I have also shown how stratagem exacerbates the difference in experience and knowledge between the high-tech militant and his enemy, that enemy response will tend to thwart technological expectations, and that ironically, modern information war therefore tends to produce a less secure military environment.

Reforming military strategy would require reversing 200 years' worth of strategic decay. Shifting from stratagem to strategy would depend on broadening the collection of information on several conceptual levels: (1) to broaden geography from certain key points into general fields, (2) to include the cultural context of a situation, and (3) to empathize with one's opponent's reactions.

Despite technological advances, the models for warfare have only begun to build technologies that involve generalizations about multiple fields of knowledge, integration of cultural information, and empathy with the enemy. Instead of good strategy, we rely on merely duping the enemy with more information than they could ever acquire, pushing them into a corner where they can only react with more violence still. Trapped in a 19th century error, the American military fetishizes technological solutions while structurally minimizing the risks they pose to larger strategic and political goals.

The 19th century theorists identified the dilemma we now face when they warned leaders to eschew stratagem in favour of long-term strategy. Stratagem, they argued, represents the illusion, but not the reality, of control. In the contemporary military orientation towards tactics and operations, no reorientation towards longer-term strategy is possible without reworking the priorities, reasoning, and information-gathering systems of the entire military. Correcting the contemporary fascination with illusion over substance would mean a true and earnest return to the classical principles of strategy. It would require nothing less than a reordering of the military institutions, their use of technology, their education, and their leadership. Such a dramatic reversal towards classical strategy, however, offers the only alternative to the trend of violent terrorism and reprisal towards which all our engagements now bend.

NOTES

1. Jean-François Pernot, 'Cartes et enjeux stratégiques', *Revue historique des armées*, No. 182 (March 1991), pp.21–30. Pernot argues that the first case of gaining victory over one's opponent by choosing the battleground in advance is the Campaign of Montmorency in 1537; one could also point to Crecy in 1346 or Thermopylae. Yet even with these innovations, war still revolved around a game of 'coups' as in chess playing – individual takes as opposed to a grand plan of successively changing campaigns for different ends entirely.
2. Pernot claims that the strategic use of the map dates from Jean Fabre's 1629 map of the Valtelline, an area of the Alps contested during the reign of Louis XIII. In the context of the *Pratiques du sieur Fabre* the map served not merely for tracing the possible approaches that an army might take, but for preemptively determining the nature of a crisis. Fabre's map reaches new levels of detail, marking not only grand passes but negligibly tiny buildings and dozens of small passes.
3. These concerns had significantly increased in importance with the coming of artillery when the added weight of gunpowder and supplies had to be planned in advance. The possible avenues of approach to a certain place became ever more important as the weight of great guns determined whether an army could cross a certain pass.
4. Under Sully a system grew for comparing the expenditures projected for different campaigns over a given territory. Sully's system of accounting required comparing the cost of the reserves left behind with that of those dispatched. However, the ability of the accountant to correctly reckon the significance of other places than battlefields, such as fortresses so far from command that they ought be destroyed, rested on the need for sophisticated cartographic information.
5. Matthew H. Edney, 'Reconsidering Enlightenment Geography and Map Making: Reconnaissance, Mapping, Archive', in Charles W. J. Withers and David N. Livingstone (eds), *Geography and Enlightenment* (Chicago: University of Chicago Press, 1999). Matthew Edney has proved that only by the 1770s and 1780s was knowledge of how map-making operated sufficiently disseminated among the public to divorce cartography from the 'occult' arts of second 'sight' by which it seemed to operate.
6. After 1793 Napoleon was active in shaping the small map library of the Comité des Fortifications into the Galerie des Plans-reliefs. Fernand Beaucour, 'Napoléon et les plans en relief' in Donald D. Horward (ed.), *Consortium on Revolutionary Europe: Selected Papers* (Florida State University, 1998).
7. *Ibid.* Similarly the first national-scale mapmaking expeditions date from the period of the Napoleonic Wars. Britain's Ordnance Survey began in the 1790s to ensure the mapping of the southern coastal counties most at risk of an invasion.
8. Stratagems demanded knowing the terrain better than the enemy. In a classic example Hannibal's knowledge of a river's terrain allowed him to deceive the enemy as to his whereabouts and then cross the river upstream by stealth. Thus Machiavelli recommends that a commander account for the position of the sun and wind on the battlefield so as to seize the advantage over his opponent. James (see note 19) recommends stratagems like that used in 1789 by French peasants from Courtrai who occupied the town of Gand (Ghent) in Flanders by disguising themselves and causing a cart to break down in the middle of the city's main gateway, blocking the gate's closing while they took the gate tower. James recommends sending in scouts to gain knowledge of fortresses, or using deserters

- to report on an area's terrain. More recently, John Keegan has studied how intimate knowledge of territory enabled Stonewall Jackson in his Shenandoah campaign of 1862 to lose the Federals through the winding valley networks of West Virginia while he escaped north by a different route. John Keegan, *Intelligence in War: Knowledge of the Enemy from Napoleon to Al-Qaeda*, 1st ed. (New York: Knopf, 2003), Ch.3.
9. The 18th century war of the stratagem meant that critical advantage could be determined by better knowledge of terrain. Cartographic endeavours expanded proportionately.
 10. Geography remained necessary to a military education. Campbell's dictionary of 1830 provided Sandhurst officers-in-training with a 'Comparative Table of Ancient and Modern Geography; Illustrative of The Military Classics'. Campbell advised young officers to spend several hours a day drilling in algebra, trigonometry, the mensuration of heights and distances, fortification, and military drawing. James (see note 19) likewise advised, 'Every officer, intended for the staff especially, ought to be more or less a draftsman.' (p.174)
 11. For instance, Carlet de la Rosière, *Stratagèmes de la Guerre* (1756).
 12. Charles Edward White, *The Enlightened Soldier: Scharnhorst and the Militärische Gesellschaft in Berlin, 1801–1805* (New York: Praeger, 1989).
 13. The invention of strategy coincides with Waterloo, but 'strategy' appears in the theory that followed Napoleon. Indeed Peter Paret notes that Napoleon objected to the term strategy, understanding it to characterize an inflexible planning in advance without accounting for contingency. Napoleon took the systems at his disposal to a new level, and this new level was one of systematic inquiry into the relationships of space and movement; Napoleon referred to the battlefield as his 'chessboard'. Commandant Jean Colin, long the authority on Napoleonic battle, explained speed and secrecy as the two vital weapons of battle. Napoleon allowed the battle to progress in seeming disorder, thus the appearance of rapid and concerted attack ensured complete and devastating surprise. Jean Colin, *The Transformations of War* (London: H. Rees, 1912), pp.250–59. Abstraction turned 'warfare into a huge game of chess'. Ibid. p.144.
 14. E.S. Norman Campbell, *A Dictionary of the Military Science: Containing an Explanation of the Principal Terms Used in Mathematics, Artillery, and Fortification; and Comprising the Substance of the Latest Regulations on Courts Martial, Pay, Pensions, Allowances, Etc.; a Comparative Table of Ancient and Modern Geography; Achievements of the British Army; with an Address to Gentlemen Entering the Army* (London: Baldwin & Cradock, 1830). See also Hugh Thomas, *The Story of Sandhurst* (London: Hutchinson, 1961).
 15. Grimouard, writing in 1791–1792, is quoted in A.T. Gaigne, *Nouveau Dictionnaire Militaire* (Paris, 1801).
 16. White, *The Enlightened Soldier*.
 17. William Thomson, *Memoirs*, Rev. James Glenie ed. (London: W. Marchant, Printer, 1804). Thomson (1746–1817) was a lawyer and historian.
 18. James Glenie, 'Letter to the Editor', Thomson, *Memoirs*.
 19. 'Castramentation', Major Charles James, *A Universal Military Dictionary, in English and French; in Which Are Explained the Terms of the Principal Sciences That Are Necessary for the Information of an Officer*, 4th ed. (London: T. Egerton, 1816). The military dictionary writer Charles James explains that Europeans, unlike the Turks and others, do not fortify their camps, but camp in the same layout that their forces will take in battle. Castramentation therefore meant readiness to respond to surprise: a well-encamped army could turn out of its tents and fight at a minute's warning. This slippage seems to have occurred within the timeframe of the invention of the term 'strategy'. In his dictionary of 1801 Gaigne gives only the technical definition, but James gives the slippage into general knowledge. It seems likely that the search for a term to define true proficiency at war led to several terms at once, one by analogy to the stratagem, one referencing preparation which responds instantly to a threat.
 20. John A. Lynn, 'Napoleonic Warfare, 1805–1807: Model or Special Case?', in Horward, *Consortium on Revolutionary Europe*.
 21. Strategy was divided into two types. *Petite guerre*, the 'war of posts', concerned the sending of separate parties of 1,000–2,000 men to reconnoitre the enemy and seize their posts. This was the state of things as it had been left by Turenne and Montecucculi. *Grand guerre* was the plot to stage entire campaigns in a systematic form. According to the earliest theorists of strategy it was the advent of the latter and its combination with the former that comprised the birth of modern strategy. See 'Strategy: petite guerre', James, *An Universal Military Dictionary*. Unfortunately the single reference I could find to the 'branching paths' is in J. Colin, *The Transformations of War*. Otherwise Gat (note 22) and Paret (note 23) refer to Montecucculi's attempt to distill a science of war before his death in 1680.

22. Azar Gat, *The Origins of Military Thought from the Enlightenment to Clausewitz* (Oxford: Clarendon Press, 1989) Chs. 1–2.
23. This rage for two-dimensional representation of the landscape compensated for a kind of control over battle that had recently been lost. Ideally, a commander gazing at the field was usually able to see most stages of the battle's unfolding. Peter Paret (ed.), *Makers of Modern Strategy: Military Thought from Machiavelli to the Modern Age* (Princeton, NJ: Princeton University Press, 1986), p.133 argues that Napoleon, who referred to the battlefield as his 'chessboard', was the last commander for whom such 'visual control' was possible, before it vanished into the tide of immense conscript armies, multiple fronts, and the fire of artillery. The removal to the abstracted field of two dimensions allowed battle to appear again like a board game, such that movements to the left and right could be seen and re-imagined from above.
24. In the history of board games, certain ones appear or disappear with variations of a culture, but war-games involving positioning and capture are more widespread than any, appearing in Native America well before Columbus. The view from above, the view for battle, appears in Egyptian and Assyrian plans for houses. Thus these two-dimensional spaces of reasoning with their implied counterfactuals appear and reappear throughout the world. At stake here are technologies of heightened definition. For the history of the board game and its omnipresence, Chapter 4, 'Wargames', H.J.R. Murray, *A History of Board-Games Other Than Chess* (Oxford: Clarendon Press, 1952).
25. Philip Walsingham Sergeant, *A Century of British Chess* (Philadelphia: David McKay, 1934), Ch. 1.
26. See for instance, *The Invasion, of Spain and Portugal, a military game . . . dedicated to the British army* (London: George Minshull, 1813); *The rival kings, a military game . . . dedicated to . . . the Marquis of Wellington* (London, George Minshull, Printed by W. Glendinning, 1813), also Samuel Gribble, *A Treatise on Deportment, Fencing, etc., including the science of horsemanship . . . a self-monitor in the exercise and duties of a cavalry soldier . . . likewise, instructions for the lance and carbine exercises . . . description of a military game resembling the game of chess; calculated to initiate . . . in the science of tactics or military manoeuvres* (Derby: W. Bemrose, 1829). There are rich resources here for a history of the counterfactual in material that turns history into a forking game, as in *Historical Pastimes: A new game of the history of England* (London: Published by E. Wallis, No. 42 Skinner Street: J. Harris, St Paul's Church Yard, 1836).
27. Book ii of *On War*, 'On Strategy in General', treats force, time, space, but also psychology. Paret, *Makers of Modern Strategy*, p.194.
28. Recently military historians have been troubled by the 19th century's insistence on Napoleon's originality. From the longer perspective, it appears that political zeal and accidental disorganizations of power among his enemies contributed to his success as much as any 'genius'. But for the century after Waterloo, ethics and social organization paled in importance in the attempt to understand Napoleon's strategy. Jomini, Clausewitz, and the English writers all found it necessary to ascribe some systematizable knowledge to Napoleon in order to explain his success. The myth of a break with the past was thus formulated, while the counterfactual subjunctive drew these formulas to a subjective way of thinking about history. Gat locates Clausewitz's innovations within contemporary German discourse about history, specifically the arguments between Herder and Hegel. Gat, *Origins of Military Thought*, Ch. 2.
29. Paul Schroeder, 'Napoleon's Foreign Policy: A Criminal Enterprise', *Journal of Military History* Vol. 54, no. 2 (April 1990).
30. Lynn, 'Napoleonic Warfare, 1805–1807', p.104.
31. Cited in Paret, *Makers of Modern Strategy*, p.146. On the other hand, there is also good evidence that Napoleon indeed modelled a mastery of the past century's map-making and future projection. From 1803 until his death he held three basic tenets: 'That strategy is the key to warfare; that all strategy is controlled by invariably scientific principles; and that these principles prescribe *offensive action* to *mass forces* against weaker enemy forces at some *decisive point* if strategy is to lead to victory.'
32. James, *A Universal Military Dictionary*.
33. Strategy essentially levelled the playing field of wars of expectation by formalizing its techniques. Knowledge of landscape was fair knowledge, therefore the better manipulation of possible manoeuvres over landscape into the future was fair. If this depended on secrecy, the secrecy and speed of strategy were veils used by all. Essentially tactics were perfected so that the playing field was equal. In the late 19th century board game *Strategos*, used at West Point for training officers, tactical advantage and strength were determined by the roll of dice, and the game fairly pitted intellect and planning against intellect and planning. Warfare could continue as the fair chess game between generals concealing their personal knowledge, pitting their own talents against the other's. There was no feeling of a trap door opened by an unethical opponent, because now both sides played on future expectation and future

- possibility, closely guarding their knowledge, alliances, and plans. As stratagem vanished as a component of military training, it relieved the looming feeling that each side was playing with an unfair advantage by trading in the future. The game was to have better strategy than the enemy, to see the forking paths of the future more clearly than the opponent, to cast a fog over the paths until they must fork, and to call up a decisive fork well ahead of one's opponent.
34. The treason in question, as other passages prove, need not be treason to one's own nation, but rather deceptive behaviour unfit for a vision of military honest in general. Instead of the immediate hand-to-hand fight, stratagem used foreknowledge bought off spies to buy an unfair advantage for the moment. Fair stratagem included reading the landscape, with its theoretical accessibility to all; unfair stratagem included bribing guards for information and otherwise confounding the reasonable expectations of the enemy. Charles James recounts 'honourable' stratagems from Hannibal to the Marshal de Saxe which involved beating drums and hollering to deceive an adversary about one's true position.
 35. Similarly, E.S.N. Campbell, in his dictionary for gentlemen entering Sandhurst Royal Military College, explained strategy as 'The Science of Military Command, and of the different means or manner of conducting all the operations of the War.' 'Stratagem' again has a longer entry, and again 'stratagem' differs from strategy in its standing as a vignette of deceit: 'a scheme or plan devised by an able General to cover his designs during a Campaign, or to deceive and surprise the enemy'. Campbell, *A Dictionary of the Military Science*.
 36. One approach to differentiating the two more closely is to compare their handling of history in greater detail than we have above. Classical history from the deep past to the present was rich with a wide variety of possible ruses. The *Stratagèmes au Guerre* of 1757 compiled these into an array of tricks available to the modern commander. As Gat has pointed out at length, the system of history expounded by these writers is one without differentiation of past from present, pike from musket, or Carthage from Switzerland. Gat, *Origins of Military Thought*, Chs. 1–2. Strategy, on the other hand, demanded a comparative knowledge of how the present differed from the past and how one culture's warfare differed from another. Clausewitz argued that guerrilla warfare in the mountains, pursued by societies without recourse to organized armies, demanded an entirely different kind of engagement than that of armies. Similarly the spread of infantry and the arrival of railways posed new options for the organization of engagements.
 37. James Glenie, 'Letter to the Editor', Thomson, *Memoirs*.
 38. Daniel Dauvois, 'Mimèsis Et Stratégie', *Bulletin trimestriel de la Société géologique de Normandie et des amis du museum du Havre*, Vol. 86, No. 3–4 (1999).
 39. Roger Evered, 'So What Is Strategy?', *Long Range Planning*, Vol. 16, No. 3 (June 1983), pp.57–72.
 40. Wolf von Baudissin, 'Changes in the Meaning of Military and Political Concepts of Peace', *Social Research*, Vol. 42, No.1 (Spring 1975).
 41. Alain Joxe, 'Vocabulaire des Armes, Phrasé Militaire, Langages Stratégiques', *Mots* 51 (1997).
 42. Gregg Easterbrook, 'Wargames: American Power Moves Beyond the Mere Super', *The Age*, 3 May 2003.
 43. Anthony Browne, 'Us Monopoly on Satellites to End', *The Times*, 30 October 2003.
 44. Nic Svenson, 'Where in the World Are We? They Know', *Sun Herald*, 13 April 2003.
 45. Barry R. Posen, 'Forseeing a Bloody Siege in Baghdad', *New York Times*, 13 October 2002.
 46. G.R. Lindsey, 'Technology, Society, and International Security since 1945', in Ronald Graham Haycock and Keith Erick Neilson (eds), *Men, Machines, and War* (Waterloo, Ont., Canada: Wilfrid Laurier University Press, 1988).
 47. Benjamin Pimentel, 'Virtual Battleground: Sgi Program Gives 3-D Look at Iraq Targets', *San Francisco Chronicle*, 13 February 2003.
 48. Michael Evans, 'Weathermen Join Front Line for Desert Storm', *The Times*, 23 December 2002.
 49. It should be noted that most of these much-touted technologies cannot be used because of their lack of specificity: to take out the guard's signal means to take out electronics in hospitals and fire-stations as well.
 50. Andrew Buncombe, 'Iraq: Hi-Tech Arms Would Finish War in a Week: America's Latest Range of Smart Weapons Will Ensure That Any Assault Is Precise and Deadly, Analysts Claim', *Independent on Sunday*, 15 December 2002.
 51. Benjamin Pimentel, 'Blazing the Trail for Tech: Defense Agency Has a Long History of Exploring Wild and Risky Ideas', *San Francisco Chronicle*, 26 May 2003.
 52. Nick Turse, 'The Pentagon Invades Your Xbox: A New and Powerful Form of Propaganda Aims to Indoctrinate Young Video Gamers', *Los Angeles Times*, 14 December 2003.
 53. Junko Yoshida, 'Simulators up Realism of Guard Games – Platform to Render Live Exercises in Real-Time to Aid Strategists', *Electronic Engineering Times*, 4 August 2003.

54. Mike Davis, 'The Pentagon as Global Slumlord', *TomDispatch*, <www.nationinstitute.org/tomdispatch/>, 20 April 2004 (cited).
55. The partners are There Simulation Inc of Menlo Park and The Institute for Creative Technologies (ICT) at the University of Southern California, respectively. Benny Evangelista, 'Simulation Technology Turning into Army Training Tool', *The San Francisco Chronicle*, 20 April 2003. Alexandra Robbins, 'Digital Wargames', *PC Magazine*, 19 November 2002. Chris Doucette, 'It's a Virtual War Zone!: Simulated Combat', *The Toronto Sun*, 22 February 2004.
56. Raymond Whitaker, 'The Iraq Conflict: Getting Closer by the Hour: The Most Intense Aerial Bombardment the World Has Ever Seen', *The Independent*, 20 March 2003.
57. Buncombe, 'Iraq: Hi-Tech Arms Would Finish War in a Week'.
58. Henri Jomini, trans. George Henry Mendall, and William Price Craighill, *The Art of War* (Philadelphia: J.B. Lippincott, 1862), pp.14–29.
59. While controversial, depleted uranium shells fired by the US are believed to cause Gulf War Syndrome symptoms of radiation poisoning in soldiers as well as those living near the battlefields. Tom Clonan, 'Intense Series of Air Attacks on Military Infrastructure Will Be Followed by the Second Phase, a Ground War: US and British Military Commanders Are Putting the Final Touches to Their Battle Plans', *The Irish Times*, 1 February 2003.
60. Michael Evans, 'Why Kosovo Bombs Missed Mark', *The Times*, 25 October 2000.
61. Paul Virilio, *Desert Screen: War at the Speed of Light*, *Athlone Contemporary European Thinkers* (London/New York: Continuum, 2002).
62. Niall Ferguson (ed.), *Virtual History: Alternatives and Counterfactuals* (London: Picador 1997), p.89.
63. *Ibid.* p.11.
64. Lecture, Jennifer Sims, 'Intelligence, Democracy, and US Foreign Policy' (Berkeley, CA, 8 April 8, 2004).
65. Kevin Robins and Les Levidow, 'The Eye of the Storm', *Screen* 32, no. 3 (1991).
66. Beth Greenberg, 'Wargames: Hollywood Helps with Training', *Boston Globe*, 22 April 22 2003.
67. Yoshida, 'Simulators up Realism of Guard Games'.
68. Jomini, *The Art of War*, 25.
69. I realize that I am omitting discussion of the now remote possibility of a colonial war. The purpose of this article is to understand the structure of strategy against an equal and potent enemy so construed. Within the rhetoric used since 2001, Saddam Hussein functioned as such an enemy, capable of inflicting damage on the United States, and therefore reasonably challenged in an ordinary seat of war.
70. 'The Hidden Movers', *New Republic*, 16 May 1960.