two themes from Clausewitz. Friction, both general and generic to the conduct of war (and defence preparation, one should add), as well as specific to unique situations, occurs in a context of uncertainty.[43] Chance embraces the accidents of bad luck and the opportunities for creative behaviour opened by good luck, neither of which could be anticipated in detail. Although accidents do happen, many such events are preventable, and are prevented, by prudent strategic practice. For example, it is bad luck if a staff officer with campaign plans is captured by the enemy. However, although such a risk cannot be reduced to zero, elementary precautionary behaviour can greatly reduce this hazard.[44]

16. *Adversary* points to the quintessentially relational nature of strategy. Strategy is the intelligent bridge between means and ends which invariably is constructed in the context of a foe with an independent, albeit interacting, will who is out to thwart you. All references to strategy 'working' mean working against an adversary motivated, and in principle able, to deny you strategic success. Just as military action makes strategic sense only with reference to its political consequences, so strategic performance has to mean influence secured, or not, upon a foe. Even when strategy-making lacks for a dominant enemy, and instead is addressed only 'to whom it may concern', still it has to be conceived and planned with reference to a foe, albeit a generic one. Recall Clausewitz's telling metaphors. 'War is nothing but a duel on a larger scale. Countless duels go to make up war, but a picture of it as a whole can be formed by imagining a pair of wrestlers. Each tries through physical force to compel the other to do his will.'[45]

17. *Time* states an obvious constraint upon all strategic behaviour. In common with geography, and indeed with our (in)human nature, time is inescapable. However, unlike geography and human nature, time is rigidly unforgiving. In the apt words of Napoleon: 'Strategy is the art of making use of time and space. I am less chary of the latter than of the former; space we can recover, time never'; and '[t]ime is the great element between weight and force.'[46]

THEORY AND PRACTICE

Although theory and historical practice, explanation and historical evidence, must conduct a constant dialogue, theirs cannot be a partnership of equals. The facts of history may well be in dispute, while their meaning certainly will be, but nonetheless as potential evidence they are sovereign over ideas and methods. Chapters 1–5 of this book approximate what Clausewitz meant by 'preparations for war': Chapters 6–8 correspond to his meaning of 'war proper'. Strategy inherently has relational meaning as signified by its adversarial dimension. Similarly, theory in social science dangles senselessly in a

vacuum if its authority is held to derive only from itself. While theory can be judged for its quality as theory, much as prose can be assayed for literary merit, both are mere verbiage if they do not say intelligent things. Methodologically elegant theory underconnected to evidence is akin to clever decoration in relation to art. Ken Booth made a cognate point when he wrote: 'Strategic studies divorced from area studies is largely thinking in a void.'[47] The test of the speculative theory in this text is its utility for plausible interpretation of the historical events presented in the next three chapters.

The tools of theory developed here are necessary because the alleged historical facts of RMA are anything but self-revealing, let alone self-revealing into orderly categories neatly interconnected for our enlightenment. This is not to say, however, that we are likely to be short of historical information. The case studies of RMA developed below present only modest problems of elusive information. The challenge rather is to interpret the information for some pattern in meaning, in this context as evidence of RMA, of how RMAs work, and of what that working suggests for the better comprehension of the dynamics of strategic performance.

I have joined the small bandwagon of social scientists who have borrowed the ideas of chaos theory from the mathematical and natural sciences. However, my borrowing has not been uncritical. To claim that strategy is complex, sometimes nonlinear, and prone to be chaotic, is hardly a bold assertion. The key issue is a matter of judgement. Is strategy *so* complex, *so* nonlinear, and *so* chaotic, that purposeful strategic behaviour is impracticable? That is the question that really counts. My answer is that strategic behaviour generally is possible, even though the true whole structure and dynamics of strategy are literally beyond anyone's comprehension. Should readers doubt this claim, they might care to reflect upon the network exposed only in highly simplified form in Figure 5.2. When policy-makers flash a green light and military leaders turn the key for military (ultimately for strategic) performance, the course and outcome of subsequent events are not entirely random. To be sure, strategic prediction frequently is shown to be vain. Nonetheless, strategy's often nonlinear working does not necessarily equate to unpredictability and we should not confuse either apparent or real disproportion between input and output with a consequentially chaotic opacity. For example, the age-old principle of 'economy of force', and its expression in the modern theory and practice of special operations, points to hugely useful and predictable intended chaotic effect. The core rationale for special operations forces is the promise of a massively favourable unequal military and strategic return from a relatively small investment of resources.[48] When in 1941 Lieutenant David Stirling of the Scots Guards suggested to General Sir Claude Auchinleck that with 66 men he could destroy most of the Luftwaffe in North Africa on the ground, he provided a glorious illustration of a vision of purposefully chaotic behaviour. That is to say, the raids promised a great disproportion between investment and return (i.e. they exemplify nonlinearity)

and, as early failures proved, they were crucially sensitive to the details of initial conditions (i.e. they were chaotic).

Chaos in its everyday non-specialist sense can be confounded by purposeful strategic behaviour. That argument does, however, have only limited domain. Strategic history displays chaotic features in all senses. Because of what is both not known and is literally unknowable in strategy, a flight to the facts is not feasible as a comprehensive aid for the practical strategist. General strategic education in a superior theory of war, for the leading example as provided by Clausewitz, has to compensate for limitations in information and knowledge. Historical detail must be unique, but the practising strategist can cope with, indeed can employ, 'chaos', by understanding, for example, that 'warfare is the way of deception',[49] and that 'the best strategy is always *to be very strong;* first in general, and then at the decisive spof.[50]

Lest the argument here appears unduly positive towards the prospect for success for the strategist, the following sobering judgement by MacGregor Knox serves well as a timely warning.

> In this bewildering world, the search for predictive theories to guide strategy has been no more successful than the search for such theories in other areas of human existence. Patterns do emerge from the past, and their study permits educated guesses about the range of potential outcomes. But the future is not an object of knowledge; no increase in processing power will make the owl of history a daytime bird. Similar causes do not always produce similar effects, and causes interact in ways unforeseeable even by the historically sophisticated. Worse still, individuals—with their ambitions, vanities and quirks—make strategy.[51]

Knox is correct, but only up to a point. As a historian he points rightly to the vanity of predictive theory. However, the strategist has no choice other than to act on the basis of such theory. The caveats of the scholarly historian have to be set against the practical necessity for strategy-making in the face of uncertainty. Fortunately, history does not reveal that purposeful strategy is impossible, just unreliable.

How best should the theory of strategy and the theory and practice of RMA speak to each other? That is the defining question for the next stage in this enquiry.

NOTES

1 . The purposes pursued in this book and the methodology employed do not require me to trek into the wild terrain of war causation. That is fortunate, because even the daunting theoretical challenges tackled here in the endeavour to effect fruitful collaboration between strategic theory, chaos theory, and RMA theory pale by comparison with those which obtain in the realm of war causation. Readers are advised that I am fully aware of the necessity for political context(s), foreign and domestic, if actual historical strategic behaviour is to be understood. Where appropriate, the political dimension (inter alia) of strategy and war is accorded the importance it merits. Readers will find insightful the commentary on the connection between political and military analysis in the third volume of Henry Kissinger's memoirs. Describing his argument over strategic arms control policy with the intellectually and even personally abrasive Secretary of Defense, James R.Schlesinger, Kissinger