

The military revolution at sea¹

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Abstract

The article examines the link between the nature of societies, the nature of governments, and the nature of their military activities. Three great military and economic powers of the seventeenth and eighteenth centuries are compared, Britain, Sweden and the Netherlands. It is concluded that seapower was most successful in countries with flexible and open social and political systems.

Historian and political scientists have long been interested in the rise of the modern state, and have very frequently connected it with what Michael Roberts called the 'Military Revolution'. At its crudest, the idea he popularised is that at a date usually located in or around the sixteenth century, armies became very much larger and more costly, subjecting the states which sought to raise them to severe strains. Many early modern states failed to meet this challenge, were conquered, absorbed or marginalised. A few succeeded in generating the permanent tax-raising powers needed to sustain modern armies, and so become the great military powers of modern Europe. These powers –France, Prussia, Sweden, sometimes Russia, Austria and even Spain are usually cited– are often described as having followed a particular route to modernity, sweeping away the archaic medieval representative institutions which had hampered the power of princes, and becoming autocratic, centralised and bureaucratic po-

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wers in which the power of the state had the full play necessary to meet the military and governmental challenges of the modern world.

There seems to be a number of difficulties inherent in this approach. By focusing attention on the rise of the great powers, it implicitly assumes that only power and success are of interest to history. Political scientists in particular, seeking to identify the two (or, in the more sophisticated versions, three) variables which explain the rise of the great powers, have largely ignored the experience of states and nations which did not succeed, or succeeded in different ways.² Moreover the concept of the 'military revolution' explains the fate of nations by reference to the form and functions of government. It assumes that the state shaped society, rather than society the state. Finally, historians have with few exceptions considered only armies, not navies.³ This is beginning to change, but it is still possible to read eminent historians comparing Britain and Prussia as military powers who are apparently quite unaware that the British navy had any historical importance, or indeed had ever existed.⁴

Broadening the perspective to consider small and transient states as well as great powers, naval as well as military influences on them, and society as much as government, draws our attention to states which seem to have been formed in very different ways. Genoa, for example no longer survives as an independent state, let alone as a mother of states, and yet medieval Genoese seapower gave rise to several naval republics. Some of them were not very far from here, on Aegean islands;⁵ and one of them, Monaco, still survives as a mute witness to the Genoese seapower of the thirteenth and fourteenth centuries.⁶

Considering states which never became great powers teaches us, among other things, that modernity and bureaucracy in central government are not necessarily sufficient for success. In 1588, for example, one of the best-known of European states radically reformed its system of government, sweeping away the untidy mixture of offices and institutions inherited from the Middle Ages, and replacing them with a coherent and logical system of fifteen boards or departments which divided the business of government on functional lines, each department headed by a minister responsible to his sovereign for its affairs. It was then a unique approach to government, and it has since become universal, which makes it curious that so influential a development has been so little studied. The state in question is of course the Papal State, and it is Sixtus V's great constitution *Immensa aeterni Dei* which ushers in the modern era of government.⁷ If the organisation of the state was what

was required to make a great power, the Pope's divisions should have dominated Europe. Reality, as we know, was different. The Papal State, admirably equipped for greatness at the level of central government, nevertheless lacked many of the essential requirements of a modern state.⁸

Just as the Papal State was being refounded, another European state was struggling into existence, and organizing its nascent naval forces, with very few of the blessings of good government provided by Sixtus V. The Dutch Republic in over two centuries of existence never managed to agree to permanent constitution to replace the temporary political arrangements with which it had begun. Its navy, or rather navies, consisted of a large number of more or less independent organizations.⁹ Five provincial admiralties (notionally federal institutions, but in practice dominated by local interests) each maintained from their own revenues a fleet, an establishment of officers, and one or more naval yards. The two great joint stock companies, the East and West India Companies, each possessed substantial numbers of men-of-war. A number of individual seaports provided municipal navies (the 'directieschepen') to protect their own shipping. Private syndicates, especially in Zealand, commissioned squadrons of privateers to prey on enemy shipping. None of these were directly controlled by the central government – indeed it is not obvious that the 'Generaliteit' of the Dutch Republic can be called a central government in the ordinary acceptance of the phrase, when it had no ministers, or ministries, and hardly any permanent national institutions. Sovereign authority resided in the States-General, when it was in session, but the assembly itself consisted of delegates (not representatives) who could not act without a mandate from their principals, the provincial estates, which in turn were obliged to consult their electors before reaching a decision. No political scientist could possibly accept such a government as a plausible candidate for the military revolution, or even the modern world. Yet it was this system which created one of the foremost of the new armies of the sixteenth century, and by 1639 had made the United Provinces the leading European naval power. Not until 1654 did it acquire its first national fleet, paid for out of national revenues and unequivocally the property of the Republic – though even then the fleet formed but a part of the available naval forces, and its actual building and operation was perforce entrusted to the provincial admiralties, since the state possessed no other naval administration. Such a republic, where government was an abstract noun, where authority

was endlessly divided and disputed, seems to historians today and seemed to many observers then to be completely unfitted for survival in a competitive world. Yet here again, theory and practice were very different.

By the mid-seventeenth century, there was another great power in Europe, one which deployed a first-class army and navy in spite of lacking most of the obvious requirements of a great power. Sweden was a poor and marginal country with a small population and no significant shipping interest. So far from being dominated by a powerful monarch, Sweden experienced a twelve-year regency from 1632 to 1644, followed by the reign of a woman, Queen Christina. Certainly her father Gustaf Adolf had been a great military leader and tactical innovator, but it was not absolutist power which enabled him to mobilize Sweden's resources. On the contrary, the rise of the Vasa dynasty to national and international power depended on creating a representative institution, the Riksdag, which incorporated the aristocracy and gave them a strong interest in the state. This was not so much an imposition of royal power as a dispersal of it. The state also developed efficient systems of local taxation and military mobilisation which were built from below rather than imposed from above, and which rested on a large measure of co-operation and consensus. In the 1640s and 50s, at the same time as aristocratic and popular revolts were tearing apart France, Spain and England, the Swedish political system was smoothly coping with a royal minority, the rule and subsequent abdication of a queen, and the accession of a new dynasty. At the same time it made possible a high level of effective taxation, by which a poor country with a small population supported the army and navy of a first-class power.¹⁰

It has not entirely escaped historians' notice that the Dutch, the Swedes and finally the British rose to the status of great powers; the Dutch without much that could be described as a central government, the British without much that could be called an army, and none of them with large populations or despotic forms of government. Attempts have therefore been made to explain, or at least to explain away, these apparent exceptions from the rule that the demands of the military revolution created centralised, autocratic or bureaucratic military powers. The sea itself has always been a favourite explanation, allegedly making England 'invasion-proof', and allowing it the luxury of retarded development until at length it became wealthy enough to support both a navy and a first-class army – the latter implicitly constituting the admission ticket to the great

powers' club.¹¹ Unfortunately there are several difficulties with this theory. In reality the sea was never in the least impassable; certainly not by the standards of early modern roads. Until, and indeed for some time after, the English developed effective naval forces, the country was repeatedly invaded by sea. English governments have been overthrown by seaborne invasions at least nine times since the Norman Conquest: in 1139, 1153,¹² 1326, 1399, 1460, 1470, 1471, 1485 and 1688; to which should be added the 1332 invasion of Scotland, and at least seven other successful landings of major forces in England (in 1069, 1101, 1215, 1405, 1462, 1469 and 1487) which went on to campaign but did not overthrow the regime. These figures take no account of lesser raids and landings, or of seaborne assistance against England sent to Wales, Scotland or to English rebels; they ignore all expeditions which did not succeed in putting troops ashore, and they do not include landings of any kind in Ireland.¹³ Countries like Spain which were protected by high mountains might genuinely claim to be insulated by geography from the military revolution, but England could not, and still less Sweden or the Netherlands. Nor is it in the least persuasive to argue that the English navy did not exist, or did not cost very much, or did not experience any significant technical developments, until the country was already a wealthy great power.¹⁴ On the contrary, it is abundantly clear that a real 'naval revolution', both technical and administrative, took place in England in the mid-sixteenth century, which posed an enormous challenge for the essentially medieval structure of English government.¹⁵ Though Queen Elizabeth's income was no higher in real terms than that of her medieval predecessors, in wartime she regularly spent one-third of it on her Navy,¹⁶ and this high expenditure was no passing fancy but a sustained long-term national policy. It was established well before England had a large merchant fleet, or any significant oceanic trade, or any distant colonies. Certainly naval expenditure placed immense strains on the English political system, and contributed substantially to its collapse in the 1640s. In that sense England was indeed one of the casualties of the military revolution.¹⁷ In the event, however, the country, and its constitution, and its navy, survived the crisis and emerged from it greatly strengthened, but even less autocratic than before. The Dutch had meanwhile become the world's leading naval power, surmounting in the process immense technical, administrative and financial obstacles, entirely without a national navy and almost without a national government. What England, the Netherlands and Sweden had in

common was a structure of government which required an unusually large degree of consent and co-operation by the governed, and permitted a much higher level of effective 'resource extraction', through the medium of taxation, loans and private participation in the national war effort.

We must be absolutely clear that maintaining even a small permanent navy was (and indeed still is) extremely complex, costly and demanding. The industrial, technical and managerial resources required to build and operate warships vastly exceeded in kind and quality anything needed by an early modern army. In the 1560s the manufacture of hand guns was still a cottage industry and the casting of heavy guns (invariably in bronze) a luxury business for the gratification of princes. Yet in England the Ordnance Board had already spent thirty years and considerable sums of money in developing a large private iron gun founding industry. In an age when the largest private enterprises employed fewer than a score of people, the English dockyards were already employing six or seven hundred, in a wide range of skilled trades, with a substantial managerial and administrative structure. Even the largest sixteenth-century armies did not call for anything like the skills, the capital investment and the long-term commitment of a small navy.¹⁸ It is no coincidence that Sweden, in most respects a peasant economy on the margins of international trade, had by the mid-seventeenth century developed one of the most advanced iron, and in particular gunfounding, industries in Europe (though this was greatly the work of Dutch investment, and exported its guns to arm Dutch ships). It was navies, not armies, which first confronted the demands of the industrial age.

The needs of an early-modern army were essentially those of mobilizing manpower on a large scale. The first requirement was a large number of unemployed peasants to make soldiers, and a smaller number of unemployed noblemen to make officers. The actual raising, training and, often, the equipping of the troops was left to the regimental officers. The feeding and paying them was as far as possible laid on the populations of conquered or occupied territories, to such an extent that in the (admittedly extreme) case of Swedish armies during the Thirty Years' War, it was even possible to wage major campaigns at a notional profit.¹⁹ The huge fortresses of the artillery age required mass manpower and a good deal of masonry and timber revetment, but in engineering terms they were hardly larger or more sophisticated than the hill-forts of the Iron Age.²⁰ Raising the great armies of the early-modern age certainly imposed

costs and strains on government, but they did not present a new challenge to society. They called for noblemen to do, and peasants to bear, what noblemen had always done and peasants had always borne. In social terms, a large seventeenth or eighteenth-century army was not very different from a small thirteenth or fourteenth-century one. These armies belonged naturally to societies which had not changed, and did not intend to change the conservative social order, societies in which the three estates kept to their God-given conditions, societies built around throne and altar.²¹ 'The military hierarchy reproduced the fundamental social hierarchy, with all its privileges and inequalities.'²² If this was a military revolution, its effects on society were the opposite of revolutionary. Government may have been changed, at least in some countries, by the development of modern bureaucracy, but society was ossified rather than revolutionised. The military revolution may have equipped absolutist monarchies to face the relatively simple challenge of mobilizing mass manpower, but it is not at all clear that it did anything to prepare them for the industrial world.

The great survivor, of course, was the great failure: Britain, the country which failed to rise to the challenge of the military revolution.²³ The question for the historian is how and why Britain survived, and there does not seem to be any agreed answer. It has been argued that British government or British bureaucracy were uniquely efficient,²⁴ and strikingly inefficient;²⁵ that the country was surprisingly militarized, and unusually free of military influence. It has been described as unique in combining the 'urban, capital-intensive' path to modernity with a strong central government.²⁶ For some scholars, England was different because it had a strong Navy, and a strong Navy was what made England different.²⁷ For others England was different because it had a strong Parliament, and a strong Parliament was what made England different.²⁸ Neither observation seems to have quite the explanatory force we need, and in any case weighty scholarly opinion argues that the English Parliament in the seventeenth century was just as weak as the English Crown, and weaker than its Continental analogues.²⁹

It is not original to suggest that navies and constitutional government go together as naturally as armies and absolutism. Aristotle was quite clear on the point,³⁰ and other political scientists have followed him.³¹ It is a matter of observation that army officers have traditionally been noblemen or gentlemen, while navies have tended to be run by middle-class professionals on whom the aristocratic

concept of honour sat somewhat awkwardly.³² What has not, to my knowledge, been seriously examined is why this should be so. Is it coincidence, or is it in the nature of a navy to favour constitutional rather than autocratic government? If there is a connection, which is cause and which effect? How far can this line of enquiry explain the British case? My answer starts from the argument of Jan Glete that successful navies require the support of a coalition of 'interest groups', united in supporting a strong navy, and capable of translating that support into long-term political commitment.³³ This argument has force regardless of the type of government in question, and one of its obvious merits is that it tends to draw attention away from the form of central government towards the nature of society, or at least of the political classes of society. Glete is quite clear that in the early modern period at least, efficient navies could be organised by provincial government or private individuals, though in the long run only states could meet the huge cost of major fleets.³⁴ Indeed this argument could be taken much further back, for in the early Middle Ages England, the Scandinavian countries and some parts of the Celtic world organised very large fleets by the *leidang* or ship-muster system, which depended on societies possessing advanced technical capabilities in shipbuilding and shiphandling, and a well-developed sense of mutual obligation and common purpose, but hardly on central government at all.³⁵

Glete's argument helps to explain one of the obvious paradoxes of navies and state-formation. The examples of Spain in the late sixteenth century, England in the mid-seventeenth, France in the late seventeenth, Germany in the late nineteenth, and Russia in more than one period, all show that autocratic, militarised states are perfectly capable of building large and efficient navies, often with astonishing speed. What they do not seem to be capable of is sustaining their creations. Spanish seapower enjoyed a brief period of strength in the 1590s followed by a steep decline. The English Republic (and the English army which dominated it) took barely ten years to create the most formidable navy in Europe, and then to collapse. Louis XIV's fleet rose to be the largest in the world in less than thirty years, and had largely disappeared within another thirty. The fleet that Tirpitz built on borrowed money ran out of credit in the budget crisis of 1912. All these cases can be well explained by the argument that the temporary influence of a dominant favourite or the capricious will of the All-Highest were no substitute for the solid support of entrenched interest groups.³⁶

It may be, however, that the argument needs to be taken further, for there is clear indication that absolutist governments were not merely bad at assembling a broad political constituency to support seapower; they seem actually to have had structural difficulties in sustaining a navy and using it rationally, regardless of the degree of government support.³⁷ In the case of Spain the stresses of war, and particularly war at sea, corroded the fabric of the absolutist state. More and more of the functions of government, including the function of building and operating fleets, were ceded to private contractors and private interests because the state was incapable either of organising or paying for them. At the same time the burdens imposed by the state largely contributed to ruining the country, impoverishing agriculture, destroying industry and reducing the largest merchant fleet and shipbuilding industry in the world to a miserable condition from which they have scarcely since recovered.³⁸ Perhaps the case of Spain is exceptional, but in the long run Oliver Cromwell had little more success than Olivares. Born of the insecurity and vulnerability of a minority regime, floated on extraordinary revenues which could not be sustained,³⁹ the English fleets of the 1650s lacked any the conditions for long-term survival. In the event the Republic collapsed before its navy could, leaving the restored monarchy to continue the search for a long-term foundation of seapower. Charles I with his Ship-Money fleets, Charles II with the Third Dutch War, both tried to use their navies as a lever for establishing something like absolutist government, and both found the instrument working to overturn their own ambitions. Even France under Louis XIV, which enjoyed unequalled revenues and apparently complete political stability, seems to have needed more than political commitment to endow its impressive fleet with lasting vigour. The latest study bluntly concludes that the navy's status as the personal creation of Colbert fatally weakened it from the start, making it an instrument of court politics rather than national policy. What was worse, its effectiveness was compromised precisely by its bureaucratic character as an accountant's navy, dedicated to efficiency rather than effectiveness: a sign of modernity to gladden the heart of Max Weber, no doubt, but an obstacle to victory, which so often depends on the deliberate sacrifice of efficiency.⁴⁰ Certainly the eighteenth-century French navy, even in the periods in which it enjoyed political backing and adequate finance, always lacked many of the essential elements of seapower, both human and material.⁴¹ Always it remained a creature of the state, every element of it de-

pendent on the support of the state. If foundries ran out of orders for anchors or guns, they closed, for they had no private customers. If the dockyards could not build enough ships of the line, there were no private yards to turn to. A century's effort to purge the officer corps of bourgeois, Protestants and other social undesirables turned it into the perfect expression of the absolutist regime, but a very imperfect instrument for winning wars.⁴²

In all of these cases, moreover, the power of the absolutist or military state to impose taxation to pay for its naval ambitions was a key to success in the short term, and disaster in the long term. Absolute monarchies could destroy themselves, either by laying intolerable burdens on their economies, as in the case of Spain; or by incurring intolerable debts, as in the case of seventeenth-century England and eighteenth-century France.⁴³ Then as now, it seemed very much quicker and more efficient for an enlightened ruler to impose his will than for a pluralist government to assemble a coalition in support of a policy. Only a broad coalition, however, could ensure that the burden of war was distributed in the most equitable and least damaging fashion. Only a system capable of arousing and expressing popular support could make possible the high levels of effective taxation necessary to support industrial warfare.⁴⁴

In Britain the Navy was always shaped by the nature of society as much as the will of the state. The English navy from its Tudor origins depended on a close alliance between the Crown and private interests. The naval war united nobility, gentry, merchants and seamen in 'the directest expression of the nation-in-arms'.⁴⁵ The Navy Royal was part of this coalition, and not exclusively under the control of the Crown. This has been described as a consequence of the weakness of the state, which in a way it was; and as a kind of decay or corruption, 'a disintegration of power, resulting from the conjunction of an antiquated system of government and the acquisitive drive of vigorous private interests';⁴⁶ which is true only from a quasi-Marxist perspective which sees the state as the only true expression of society and the only legitimate instrument of military force. Even when the English (later British) state became more efficient and wealthier, in the late seventeenth and early eighteenth centuries, the Navy and the state continued to rely heavily on private interests to perform functions which in France or Spain were the monopoly of the state. Private industry cast guns and manufactured powder, provided all sorts of stores and equipment and built many of the ships. Senior officers were almost entirely responsible for selecting

and training their own officers and men; not until well into the nineteenth century did the Admiralty gain control of the entry of officers into the Navy.⁴⁷ It is true that there were important elements of naval administration which were more centralised in Britain than in France, notably victualling and central finance, but the French *trésoriers-généraux* and *munitionnaires* were not private contractors operating in a free market so much as privileged monopolists exploiting a private relationship with the centres of power.⁴⁸ They represented key points of weakness in French naval administration, where the British Navy's extensive networks of private suppliers and contractors gave it resilience and formed so many roots anchoring the Navy in the soil of civil society. Above all, 'Dutch finance' in both its Amsterdam and London versions, invoked private skills and public markets to spread the financial burden and risk of war across the whole breadth of the propertied classes at home and abroad. The funded debt represented the political nation's solid commitment to the wars which were a real expression of national will, not the private ambitions of kings or ministers. Two important recent studies have now shown in detail how Britain rose as a 'fiscal-military' state, combining a remarkably high and sustained level of taxation with an open and representative system of government. Though the essential technical advances in taxation and borrowing were made by the English republic in the 1650s, they were continued by the restored Parliament of the Restoration, and developed in the late seventeenth and early eighteenth centuries.⁴⁹

Comparing Britain, Sweden and the Netherlands with the other great powers of the seventeenth and eighteenth centuries suggests that open and pluralist societies were not only better at assembling political support for navies, but better at the organization of seapower. To integrate the wide range of human, industrial, technical, commercial and managerial resources required to build, maintain and fight a seagoing fleet was simply beyond the unaided competence of any state in the early modern period, and perhaps it still is. Nations in which public policy was based on a broad consensus of interests, in which numerous private businesses serviced and influenced government, in which land and trade overlapped, were much better equipped to sustain a navy.⁵⁰ Effective seapower was the product of society as well as the state – if not instead of the state, in the case of the Dutch Republic. Only flexible and integrated societies could surmount the very considerable difficulties involved. Money was certainly necessary, but money alone did not

suffice. The events of 1588 amply demonstrate that even ten times the financial resources of England were no substitute for the efficient administration and extensive networks of support from private industry and trade which Spain lacked.⁵¹

This is a statement about the nature of society as much as about the form of government. Absolutist government had difficulty sustaining effective seapower because it had difficulty mobilizing the broad coalition of interests needed to support so complex an enterprise. Indeed it did not wish to mobilize many elements in society, either because they were actively undesirable (Moriscos in Spain, Huguenots in France, Jews in many countries), or because the absolutist system did not allow them freedom of action, or because it did not wish to involve them in the business of the state. Merchants, industrialists, tradesmen, skilled craftsmen; all had a place in absolute monarchies, but it tended to be a subordinate or marginal place. Indeed it is striking how often in absolutist societies the place of trade and industry was literally marginal; geographically remote from inland capitals, on the frontiers or seacoasts of the state.

All this suggests a link between the nature of societies, the nature of governments, and the nature of their military activities. Middle-class participation in public life, professional skills, commerce, industry and private finance directly favoured and were favoured by navies. Seapower was most successful in countries with flexible and open social and political systems.⁵² They were the same which favoured trade and industry, and for the same reason, for a navy was the supreme industrial activity. The armed forces of early modern states were the blueprint of their modern societies: a complex, integrated, industrial world for the naval powers; a rigid, archaic world of great landed estates for the military powers.⁵³ It has been argued that a Europe of warring states eventually came to dominate a world much of which was occupied by vast territorial empires, precisely because the ceaseless competition of European warfare bred forces and weapons which were much more capable than the products of closed, monopolistic societies – in short, that the free market was more efficient than the plan.⁵⁴ If this was true on an international level, it should have been equally true within nations. If free competition is more economically efficient than government direction, then those forms of military activity which best harmonise with free markets are likely to be more successful in themselves, and best promote (or least hamper) the growth of flexible and competitive economies. In a world which was steadily moving away from land and population as the sole sources of wealth and towards commerce

and industry, naval powers and open societies were much better placed to adapt than military powers and autocratic monarchies. It was not simply that sea-power gave access to overseas wealth, important though that was, for absolutist states could and did elect to become seapowers. They, however, were conspicuously less successful than other states, not richer than they and in some cases much poorer, but better equipped to mobilize their whole resources, either for war or for peace. The critical difference was the nature of society, and government as an expression of society, rather than constitutional forms taken in isolation. Open societies were best at naval warfare for the same reason that they were later best at meeting other challenges of the modern world, because a navy was an image of the modern world in miniature. 'Warfare on the British model was a triumph for an enterprising and acquisitive society, not an authoritarian one.'⁵⁵ Britain did not simply survive centuries of warfare relatively unscathed because of geographical and historical accident,⁵⁶ to profit from the industrial revolution because there were no competitors left undevastated by war. Naval warfare was Britain's apprenticeship for commercial and industrial supremacy.

Notes

1. In its original form this paper was first given at the Canadian Nautical Research Society's International Conference on Maritime History, Calgary, 1998. I am indebted to Professor Jan Glete for suggestions and references which have greatly improved it.

2. See for example: Richard Bean, 'War and the Birth of the Nation State', *Journal of Economic History* XXXIII (1973) pp. 203-221; Samuel E. Finer, 'State and Nation-Building in Europe: The Role of the Military', in *The Formation of National States in Western Europe* ed. Charles Tilly (Princeton, 1975) pp. 84-163; Ronald W. Batchelder & Herman Freudenberger, 'On the Rational Origins of the Modern Centralized State', *Explorations in Economic History* XX (1983) pp.1-13; Charles Tilly, 'War Making and State Making as Organized Crime', in *Bringing the State Back In* ed. Peter B. Evans, Dietrich Rueschmeyer & Theda Skocpol (Cambridge, 1985) pp. 169-191. The most recent contributions are: *Power Elites and State Building* ed. Wolfgang Reinhard (Oxford, 1996); Thomas Ertman, *Birth of the Leviathan: Building States and Regimes in Medieval and Early Modern Europe* (Cambridge, 1997); and *idem*, 'The Sinews of Power and European State-Building Theory', in *An Imperial State at War: Britain from 1689 to 1815* ed. Laurence Stone (London, 1994), pp. 33-51.

3. This applies to most of the very numerous books on the subject. Honourable exceptions are: Geoffrey Parker, *The Military Revolution: Military Innovation and the Rise of the West, 1500-1800* (Cambridge 1988); and Jeremy Black, *A Military Revolution? Military Change and European Society 1550-1800* (London, 1991). Jaime Vicens Vives, 'Estructura administrativa estatal en los siglos XVI y XVII', *Rapports IV, XIe Congrès International des Sciences Historiques*, (Stockholm, 1960) pp. 1-24 (also in *Obra Dispersa* ed. M. Batllori & E. Giralt (Barcelona, 1967, 2 vols) II, 359-377; and translated by Frances M. Lopez-Morillas as 'The Administrative Structure of the State in the Sixteenth and Seventeenth Centuries', in *Government in Reformation Europe, 1520-1560* ed. Henry J. Cohn (London, 1971) pp. 58-87), was perhaps the first to mention the naval contribution to state formation. Jan Glete, *Navies and Nations: Warships, Navies and State Building in Europe and America, 1500-1860* (Stockholm, 1993, 2 vols) is an outstanding study which eschews the 'military revolution' as such; Professor Glete has now followed it with *War and the State in Early Modern Europe: Spain, the Dutch Republic and Sweden as fiscal-military states, 1500-1660* (London, 2002). Brian M. Downing, *The Military Revolution and Political Change: Origins of Democracy and Autocracy in Early Modern Europe* (Princeton, 1992), pp. 72-73, 165 & 224, is a rare political scientist who is uneasily aware that the existence of navies somewhat undermines his argument. *War and Competition between States* ed. Philippe Contamine (Oxford, 2000) has a chapter by Jaap R. Bruijn, 'States and their Navies from the Late Sixteenth to the End of the Eighteenth Centuries', pp. 69-98.

4. *Rethinking Leviathan: The Eighteenth-Century State in Britain and Germany* ed. John Brewer & Eckhart Hellmuth (Oxford, 1999).

5. William Miller, 'The Gattilusi of Lesbos, 1355-1462', *Byzantische Zeitschrift XXII* (1913), pp. 406-447. Michel Balard, *La Romanie Genoise* (Genoa, 1978, 2 vols); *idem*, 'Les Genoës en mer Egée', *Mediterranean Historical Review IV* (1989), pp. 158-174.

6. Gustave Saige, *Monaco, ses origines et son histoire* (Monaco, 1897), pp. 42-56. Léon-Honoré Labande, *Histoire de la Principauté de Monaco* (Monaco, 1934), pp. 27-44. Michel Balard, 'Course et piraterie à Genes à la fin du Moyen Age', in *El comerç alternatiu: corsarisme i contraban (SS.XV-XVIII)* ed. Gonçal Llopez Nadal (Palma de Mallorca, 1990) pp. 29-40, at p. 33.

7. Pio Pecchiai, *Roma nel Cinquecento* (Bologna, 1949), pp. 173-177. Paolo Prodi, *The Papal Prince. One Body and Two Souls: The Papal Monarchy in Early Modern Europe* trans. Susan Haskins (Cambridge, 1987), p. 87. Niccolò Del Re, *La Curia Romana* (Rome, 2nd edn 1952), pp. 19-20 & 175-176. Jean Delumeau, 'Le progrès de la centralisation dans l'État pontifical au XVIe siècle', *Revue Historique* 226 (1961) 399-410, at p. 403. The text is printed in *Bullarium Romanum Novissimum* ed. L. Cherubini et al. (Rome, 3rd edn 1638, 4 vols) II, 464-468. Curiously enough these authorities do not agree on the actual date of the bull. Most modern authorities (e.g. Prodi,

p.87; Del Re, p.87) plump for 22 Jan 1588; Alberto Guglielmotti, *Storia della Marina Pontificia* (Rome, 1886-93, 10 vols) VII, 22, prefers the same day in 1587, Pecchiai (pp.176 & 207) offers both, while the actual text in Cherubini's (indifferent) edition is dated 1 Feb 1587.

8. Cf Delumeau, 'l'État pontifical', p. 410: 'Ce qui a manqué à l'État pontifical de la Contre-Réforme, ce ne sont pas tant les structures administratives que la santé sur le plan économique et social.'

9. What follows is a substantial simplification. Good introductions to Dutch naval administration are J.R. Bruijn, *Varend Verleden: De Nederlandse Oorlogsvloot in de 17e en 18e eeuw* (Amsterdam, 1998), and the appropriate sections of the *Maritieme Geschiedenis der Nederlanden* ed. G. Asaert et al. (Bussum, 1976-78, 4 vols). Glete, *War and the State*, pp. 140-173, considers Dutch government and war more generally.

10. Jan Glete, 'La construcción de un Impero con recursos limitados: Suecia y el desarrollo de las organizaciones militares', in *España y Suecia en la época del Barroco (1600-1660)* ed. E. Martínez Ruiz & M. de Pazzis Pi Corrales (Madrid, 1998), pp. 307-339. Glete, 'Absolutism or Dynamic Leadership? The rise of large armed forces and the problem of political interest aggregation from a mid-17th-century perspective', in *Politics and Culture in the Age of Christina* ed. Marie-Louise Roden (Stockholm, 1997), pp. 23-28. I am indebted to Professor Glete for copies of these papers, now conveniently summarised in his *War and the State*, pp. 174-212.

11. Perry Anderson, *Lineages of the Absolutist State* (London, 1974), p. 123. John Brewer, *The Sinews of Power: War, Money and the English State, 1688-1783* (London, 1989), pp. 12-13. *The Medieval Military Revolution: State, Society and Military Change in Medieval and Early Modern Europe* ed. Andrew Ayton & J.L. Price (London, 1995), p. 6. Downing, *Military Revolution*, pp. 179-183.

12. Perhaps 'seriously undermined' would describe these two occasions better than 'overthrown'.

13. N.A.M. Rodger, *The Safeguard of the Sea. A Naval History of Britain*, Vol. I, 660-1649 (London, 1997), p. 429.

14. Michael Mann, *The Sources of Social Power. I: A History of Power from the Beginning to A.D. 1760* (Cambridge, 1986), p. 457. Cf the comments of Ertman, *Birth of the Leviathan*, pp. 14-19.

15. Ronald Pollitt, 'Bureaucracy and the Armada: the Administrator's Battle', *Mariner's Mirror* LX (1974) pp. 119-132.

16. P.K. O'Brien & P.A. Hunt, 'The Rise of a Fiscal State in Britain, 1485-1815', *Historical Research* LXVI (1993) pp. 129-176. Geoffrey Parker, 'The Dreadnought Revolution of the Sixteenth Century', *Mariner's Mirror* LXXXII (1996) pp. 269-300.

17. Kenneth R. Andrews, *Ships, Money and Politics: Seafaring and Naval Enterprise in the Reign of Charles I* (Cambridge, 1991), p. 3. Conrad Russell, *Parliaments and English politics, 1621-1629* (Oxford, 1979) pp. 64,

418 & 431. Simon Adams, 'Spain or the Netherlands? The Dilemmas of Early Stuart Foreign Policy', in *Before the English Civil War: Essays on Early Stuart Politics and Government* ed. Howard Tomlinson (London, 1983) pp. 79-101, at p. 80.

18. Rodger, *Safeguard of the Sea*, pp. 228-237.

19. Downing, *Military Revolution*, pp. 193-202. Parker, *Military Revolution*, pp. 66-67. But Professor Glete is clear that the Swedish state (as distinct from generals and military entrepreneurs) never made a true profit.

20. I have failed to find directly comparable figures for the quantities of earthwork and masonry required, but there are some suggestive calculations in *The Experimental Earthwork on Overton Down, Wiltshire, 1660* ed. P.A. Jewell (British Association for the Advancement of Science, London, 1963), pp. 51-58, and John Coles, *Archaeology by Experiment* (London, 1973), pp. 73-74.

21. This is true regardless of whether you believe the military revolution was the cause of absolutism, or (like Black, *Military Revolution*) the consequence.

22. Christopher Storrs & H.M. Scott, 'The Military Revolution and the European Nobility, c. 1600-1800', *War in History* III (1996) pp. 1-41, at p. 34.

23. Jean Meyer, *Le poids de l'état* (Paris, 1983), pp. 128-129.

24. Brewer, *Sinews of Power*, *passim*.

25. Wallace T. MacCaffrey, Elizabeth I, *War and Politics 1588-1603* (Princeton, 1992), pp. 23-41. Lawrence Stone, introduction to *An Imperial State at War: Britain from 1689 to 1815* (London, 1994), pp. 14-17.

26. Charles Tilly, Coercion, *Capital and European States, AD 990-1990* (Oxford, 1990), pp. 56-61.

27. Aristide R. Zolberg, 'Strategic Interactions and the Formation of Modern States: France and England', in *The State in Global Perspective* ed. Ali Kazancigil (Paris & Aldershot, 1986) pp. 72-106, at pp. 94-95.

28. This seems to sum up the argument of Ertman, *Birth of the Leviathan*.

29. C.S.R. Russell, 'Monarchies, Wars and Estates in England, France and Spain, c. 1580-c. 1640', *Legislative Studies Quarterly* VII (1982) pp. 205-220.

30. *Politics* VI. 6 "2.

31. Mann, *Sources of Social Power*, I, 478-481. Anderson, *Lineages of the Absolutist State*, p. 134.

32. N.A.M. Rodger, 'Honour and Duty at Sea, 1660-1815', *Historical Research* LXXV (2002) pp. 425-447.

33. Glete, *Navies and Nations* II, 477-489.

34. Glete, *Navies and Nations* I, 159-161.

35. Hans Kuhn, *Das Altnordische Seekriegswesen* ed. Sigrid Engeler & Dietrich Hofmann (Heidelberg, 1991), pp.54-87. Nicholas Hooper, 'Some Observations on the Navy in Late Anglo-Saxon England', in *Studies in Me-*

dieval History presented to R. Allen Brown ed Christopher Harper-Bill et al. (Woodbridge, 1989), pp. 203-213. *Kulturhistorisk Leksikon for Nordisk Middelalder* (Copenhagen &c, 1956-78, 22 vols) X, 433-446, s.v. Leidang. Lucien Musset, 'Problemes militaires du monde scandinave (VIIe-XIIe siecles)', in *Ordinamenti Militari in Occidente nell'alto Medioevo* (Spoleto, 1968) pp. 229-291, at pp. 279-284. Else Roesdahl, *Viking Age Denmark* (London, 1982), p. 157. Klavs Randsborg, *The Viking Age in Denmark: The Formation of a State* (London, 1980), pp. 32-43. Niels Lund, 'The Armies of Swein Forkbeard and Cnut: *leding or lið?*', *Anglo-Saxon England XV* (1986) pp. 105-118. John Bannerman, *Studies in the History of Dalriada* (Edinburgh, 1974), pp. 140-141. Hugh Marwick, 'Naval Defence in Norse Scotland', *Scottish Historical Review XXVIII* (1949) pp. 1-11.

36. Martine Acerra & Andre Zysberg, *L'essor des marines de guerres europeennes (vers 1680 - vers 1790)* (Paris, 1997), p. 53. Michel Vergé-Franceschi, *La marine française au XVIIIe siècle: Guerres, Administration, Exploration* (Paris, 1996), pp. 49, 110 & 124-126. Daniel Dessert, *La Royale: Vaisseaux et marins du Roi-Soleil* (Paris, 1996), pp. 74-76, 101-110, 170-174, 238-261 & 284-286.

37. Glete, *Navies and Nations I*, 222.

38. I.A.A. Thompson, *War and Government in Habsburg Spain 1560-1620* (London, 1976), pp. 211-283. Somewhat more optimistic views are offered by R.A. Stradling, *The Armada of Flanders: Spanish Maritime Policy and European War, 1568-1668* (Cambridge, 1992), and David Goodman, *Spanish Naval Power, 1589-1665: Reconstruction and Defeat* (Cambridge, 1997).

39. J.S. Wheeler, 'Navy Finance, 1649-1660', *Historical Journal XXXIX* (1996) pp. 457-466.

40. Dessert, *La Royale*; cf. his 'La marine royale, une filiale Colbert', in *Patronages et clientelismes 1550-1750 (France, Angleterre, Espagne, Italie)* ed. Charles Giry Deloison & Roger Mettam (Lille & London, n.d.) pp. 69-83. Martin van Creveld, *Technology and War from 2000 B.C. to the Present* (New York, 2nd edn 1991), pp. 317-319.

41. Verge-Franceschi, *La marine française*. Acerra & Zysberg, *L'essor des marines de guerres*. N.A.M. Rodger, 'The Continental Commitment in the Eighteenth Century', in *War, Strategy and International Politics: Essays in Honour of Sir Michael Howard*, ed. Lawrence Freedman, Paul Hayes & Robert O'Neill (Oxford, 1992) pp. 39-55, at pp. 47-50.

42. On French sea officers see the works of Michel Verge-Franceschi, in this case especially *Marine et Éducation sous l'Ancien Régime* (Paris, 1991).

43. Glete, *Navies and Nations I*, 207-208.

44. The dualist contrast presented by Tilly in 'War Making and State Making as Organized Crime' (p.170), between the 'coercive and self-seeking entrepreneurs' who made wars and states, and the heroic (by implication, pacifist) ordinary people who resisted them and in some cases succeeded in preserving representative institutions, seems to me to bear no relation to rea-

lity, and is admitted by its author to be supported by 'no evidence worthy of the name'. His *Coercion, Capital and European States*, however, takes a more plausible line.

45. Kenneth R. Andrews, *Elizabethan Privateering: English Privateering during the Spanish War 1585-1603* (Cambridge, 1964), pp. 233-235. cf Paul M. Kennedy, *The Rise and Fall of British Naval Mastery* (2nd edn 1983), pp. 22-24.

46. Andrews, *Elizabethan Privateering*, p. 238.

47. N.A.M. Rodger, 'Officers, Gentlemen and their Education, 1793-1860', in *Les Empires en Guerre et Paix, 1793-1860* ed. Edward Freeman (Vincennes, Service Historique de la Marine, 1990) pp. 139-151.

48. James Pritchard, *Louis XV's Navy, 1748-1762: A Study of Organization and Administration* (Kingston, Ontario & Montreal, 1987) pp. 186-205. Henri Legohérel, *Les Trésoriers généraux de la Marine (1517-1788)* (Paris, 1965). Dessert, *La Royale*, pp. 54-77. Acerra & Zysberg, *L'essor des marines de guerres*, pp. 248-250.

49. James Scott Wheeler, *The Making of a World Power: War and the Military Revolution in Seventeenth-Century England* (Stroud, 1999). Patrick O'Brien, 'Fiscal Exceptionalism: Great Britain and its European Rivals. From Civil War to Triumph at Trafalgar and Waterloo', in *The Political Economy of British Historical Experience, 1688-1914* ed. Donald Winch & P.K. O'Brien (Oxford, 2002). Cf Philip Harling & Peter Mandler, 'From «Fiscal-Military» State to Laissez-Faire State, 1760-1850', *Journal of British Studies* XXXII (1993), pp. 44-70.

50. Anderson, *Lineages of the Absolutist State*, p. 135. P.J. Cain & A.G. Hopkins, *British Imperialism: Innovation and Expansion 1688-1914* (London, 1993), pp. 64-89.

51. Rodger, *Safeguard of the Sea*, pp. 257-260, 327-329 & 340-341.

52. This is the central argument of Peter Padfield, *Maritime Supremacy and the Opening of the Western Mind: Naval Campaigns that shaped the Modern World, 1588-1782* (London, 1999).

53. Glete, *Navies and Nations* I, 13. André Corvisier, 'Armées, état et administration dans les temps modernes', *Francia* IX (1980) pp. 509-519, at p. 509. Vicens Vives, 'Estructura administrativa estatal', p. 361.

54. William H. McNeill, *The Pursuit of Power: Technology, Armed Force and Society since A.D.1000* (Oxford, 1983) pp. 113-116. Paul Kennedy, *The Rise and Fall of the Great Powers: Economic Change and Military Conflict from 1500 to 2000* (London, 1988), pp. 21-29. Jeremy Black, *War and the World: Military Power and the Fate of Continents, 1450-2000* (London, 1998), p. 4.

55. Paul Langford, *A Polite and Commercial People: England, 1727-1783* (Oxford, 1989) p. 697.

56. Roughly the argument of Otto Hintze, for whom see Anderson, *Lineages of the Absolutist State*, pp. 134-135; and Ertman, 'The Sinews of Power and European State-Building Theory', pp. 34-35.