SUMMARY

Military history, like other branches of history, looks at first sight a stream of events. In this study the question arises if it may be possible to indicate coherences in all these events even though they are so different as regards time, place and other circumstances. Next we can ask whether there are further differences between the events. Both cohesion and difference need explanation. In how far trends are perceptible through times, how long do they last and why are they succeeded by other trends? With questions like these we are trying to trace the heart of the matter through the smoke rising from the battlefields.

Researching elements of human behaviour as they have developed for the greater part, or entirely, in the past, demands a historical approach. As for that our attention is not focussed on history in the meaning of the *res gestae* as an inquiry into past events, but on history in the sense of the *historia rerum gestarum*, as an inquiry into the representation by historians of past events. So the aim is to find new data in order to extend the domain of our historical knowledge. At issue is, instead, to improve the insight into the relationships between data, which are known already in the traditions of historiography, by a new arrangement of data. An attempt to understand more of the essentials of warfare is certainly not new. An example is John Keegan's *The face of battle* (1976). In this book he treats and compares four land battles, that took place in different periods of time. However the analysis is intended to be of much wider applicability. Still very famous and far more comprehensive is the study *Vom Kriege*, or *On War*, by Carl von Clausewitz, first published in 1832–1834. He has restricted however his historical attention to the wars of Frederik the Great and those of the French Revolution and of Napoleon. Others, like his contemporary Jomini, restricted their attention also to a specific period and only to land warfare. Later Mahan focussed on sea warfare and at last Douhet on air power. Soldiers like Liddell Hart and Guderian have paid attention to the cooperation of ground forces and tactical air force. A few students of military history, such as Archer Jones in *The art of war in the Western World*, have made some comparisons of different parts of the armed forces through history. In an attempt however to trace the heart of the matter, it is not enough tot limit ourselves to warfare on land, or at sea, or in the air. Precisely the great differences between these arenas a systematic comparison of the military activity of land, naval and air forces can point us new ways. Because history deals with a process, wherein we also participate for the modest share of our own time of life, it is not enough to confine our inquiry to a part of the process. Some historians, dependent on their subject of investigation, may be right to limit themselves to a certain period, a century or only a decade. Our subject on the contrary commits us to investigate the full process or at least the greatest possible part of it, beginning with the earliest times as far as is sound in the context of historical research.

This however seems impossible by the mass of data produced already by the historical tradition. How to reduce the stream of events in order to be in control of these? In our study a first reduction is created by restricting the events to their structures. An

example can make this clear. The formation of attack of Greek armies in the 5th century BC consisted of a single line of battle of infantrymen, armed with spears and protected by shields, the so-called 'phalanx'. They fought in close order, to get the most of the thrust of their spears and the protection of their shields. They were formed mostly eight deep for reasons of pushing the ranks. Their offensive potential existed in the frontal striking power of a hedge of spears.

In Western Europe, in the 18th century, the formation for an infantry attack consisted of a line of men as well. They were armed however with muskets. For the space needed to handle their weapons they fought mostly in order. Their offensive potential existed in volleys of musketry and in the threat of fixed bayonets. To get the best of their fire they were formed three deep. In view of the impetus of the attack they advanced in waves of some of such lines. Given the time distance of over 2000 years, the similarity in structure of both tactical formations is striking. The differences of their activities are simple to explain by the development of technology. So *our first reduction consists of a structural instead of an evenemential approach to history*. Nevertheless *a second reduction* has been found necessary *in the use of the Second World War as a caesura*. The material should become too abundant for the limited size of a dissertation and there is good reason to regard the Second World War as caesura in history. The disadvantages of this limitation are contended with by using many examples derived from later times. A final chapter contents moreover a résumé of the main characteristics of the Second World War and presents an abstract of the developments later on, up till our own very time.

Warfare takes place on different levels, ranging from the statesmen, who select the aims of war and peace and eventual allies, to the ordinary soldier, who wields his weapons. The decisions made on most of these levels demand an implementation on the tactical level. This level is no more a stage of preparation or supply for the fight, but the stage of the actual fighting itself. So the relation of tactics to warfare can be indicated with the well known expression "the proof of the pudding is in the eating". This is a reason to select *the tactical level as a third reduction* of the material. Considering this tactical level most attention has been paid to the tactical systems used. A tactical system is here to say a standardized set of procedures of drawing up soldiers before of a battle and the eventual changes of formation, the manoeuvres and kinds of fighting during a battle. So the title of this book now can be clear: *Tactical Systems. A comparison of the military activity of land, naval and air forces.* After the periods of the Antiquity and the Middle Ages the main developments in tactics are, above all things, dependent on the developments in technology as the producer of the tools of the warriors. So the explanation of the tactical developments is at every turn preceded by an exposition of the technological level pertinent to the time in question. It is therefore e.g. not enough to mention an increasing rapidity of fire but it is needed first to explain why it became possible to provide firearms with such increased capacities. Having, first, restricted the data, and secondly, having pointed to the development of technology as the main principle of explanation, an important problem remains, however, to be solved. How to compare tactical activities in such different regions as land, sea and air in a systematic way? Examples of such studies are missing. Tools as instruments for

research are wanting. When tools are wanting, they have to be made. The comparison of such different phenomena as tactical activities on land, at sea and in the air needs the simplest instrument in order that we can cope with such a complex task.

In this study such a tool has been made as a new element in historical research. It is called 'het axiale model', or 'the axial model'. The term 'model' is here not understood in the meaning of a complex mathematical equation but in the simple meaning of a representation to give an image of what is going on. This model is derived from an analysis of an encounter. When one tries to eliminate one's opponent it is firstly necessary to know where he is. So it needs to observe him or the place where he hides.

Therefore 'waarneming' or 'observation' is the first basic element in an encounter. Once it seems clear where he is, one must be at a good distance and in a good position to take aim at him. In most cases this means moving in his direction. Doing so there is a risk to be seen and hit by the opponent. So it is important to remain mobile. Consequently 'beweging' or 'movement' is the second basic element in an encounter. Unless he gives up, it is necessary to eliminate the opposition by destructing the tools of the adversary or even by taking his life by destruction of his body or of essential parts of it. Thus 'destructie' or 'destruction' is the third basic element in an encounter. In an encounter often both parties score and have to take hits. The victor is not only a party who hits hard, but who is also able to take hard hits without quailing. Professional warriors are more recognizable by their protective armour than by the weapons they carry. In that way 'incassering' or 'taking' is the fourth basic element in an encounter. Not only the movement but also the other three basic elements take place by an imaginary line and in a certain direction. In our study these imaginary lines and these directions are interpreted as an axis of movement, an axis of observation, an axis of destruction and an axis or axes of taking. In the example of a phalanx, which in this dissertation is considered as a tactical system, observation (limited by helmets), movement (directed by the formation in line abreast) destruction (by the thrust of spears and the lining up of the men) and taking (by shields in front) were all 'coaxial' or exhibited 'an axial homogeneity'. As a consequence of this it is easy to understand the vulnerability of the flanks of such a formation. On the contrary the axis of destruction of a line of battle of 17th and 18th century sailing ships with their broadsides is perpendicular to its axis of movement. So the ships have to fight on parallel courses. The axis of destruction of a fighter plane is again coaxial with his axis of movement and so on.

Part I of the book, 'Theoretical Aspects', deals with the aspects as mentioned above. Part II, 'The development of warfare', treats successively the development of land, sea and air warfare. By means of the axial model and of the descriptions of the development of technology, which provided the fighting men with their tools, resemblances and differences, trends and change of trends in military history are explained. A concise survey of a great part of the military past could be possible by our structural approach to history. By all these means, the insight of the reader into warfare may improve.