

## Preface

Current cultural histories of the game generally exclude two spheres: the battlefield and mathematics. Yet the groundbreaking role of games in these domains could not be more serious and intensive. After the First World War, if not earlier, mathematical and military discourses in Germany not only struggled for the consolidation of their respective fields of operation, but also simultaneously discovered the game as a productive concept. From that point on, the term “war games” was no longer an odd word combination tantamount to an oxymoron. Rather, it was probably the most effective and fateful concept the twentieth century produced in order to master its crises.

It is not possible to do justice to the concept and the object of the war game without taking into consideration its long, decidedly nonlinear and not always transparent history. As a consequence, the time frame of this study, which begins in the Middle Ages and extends to the Second World War, is quite broad in scope. On the other hand, there is a clear delimitation of the area of investigation: it ranges from the medieval game boards—captured on parchment—of the German bishoprics, through the spaces of play in the baroque principalities, to the paper map exercises of the German and “Third” Reich.

A perspective that looks beyond national borders—as is often justified, if only for purposes of comparison—is here largely excluded. Instead of foregrounding relations, this study investigates quite specific constellations. The decision to highlight states of exception solely from German history seems warranted due to the fact that—from the beginning of the twentieth century at the latest—an unequalled mastery arose there with respect to both war machines and mathematics.<sup>1</sup>

The first two chapters begin with the medieval Battle of Numbers and extend to Leibniz's baroque symbol and machine configurations. They set forth the argument that mathematical and military semiotics could initially coincide entirely with the concept of the game and only gradually underwent a differentiation. Only in this way can it become clear that the divided mathematical and military professions of the twentieth century ultimately remain, at a subterranean level, in thrall to the game as a medium.

In particular, the design of their rule systems must be subjected to a more precise analysis. This analysis by no means excludes an examination of the permeability at the borders of their game concepts and game scenarios. Ultimately, it is also necessary to observe how the highly abstract mathematical game configurations on the one hand and the quite concrete military technical ones on the other hand merge here into the domain of general cultural technical practices.

The middle chapters are devoted to a time distinguished, above all, by Carl von Clausewitz's emphasis on the frictions of war and the "fog of war," which prompted him to reject the postulate of general calculability. In so doing, he explicitly outlined a concept of probability closely related to the game, which would first become an epistemological tool of mathematics and physics with thermodynamics. For Clausewitz, there was every reason to keep strategic and mathematical knowledge strictly separate, while traditional—and, in his eyes, outdated—military doctrine still sought to tailor the scattered operations of Napoleon's sharpshooters to rigorously geometric formations. Clausewitz's doctrine of a war of contingencies undeniably represents a milestone in the history of science because his analysis affects the concept in ways that go far beyond a philosophy of war. At the same time, however, this underscores the unsettling fact that specific epistemes emerge for the first time and exclusively in war and do not lose their force after its end. Yet one cannot do justice to Clausewitz's claim to generality when one reads him solely against his own temporal horizon, for then Clausewitz would seem to be a mere advocate of hitherto disregarded realities, which "war," in his words, is unable to capture "on paper."<sup>2</sup> No sooner has Clausewitz formulated this premise than it loses its validity: before long, coordination and formation systems based on signs cease to be limited to the representation of either past or possible future battles and begin to intervene decisively in steering the course of events

on the battlefield. The securing of specific living conditions within arranged spaces and time frames thus appears less as a mere question of the correct use of power than as one of the correct use of the power of command. As a result, war on paper is first put into play in an unparalleled fashion. Clausewitz's military doctrine anticipates this development in a theoretical vein, but the power of command is actually implemented for the first time in the medium of the tactical war game. Not least among its consequences, the war game explodes the format of the book, that is, the very medium to which Clausewitz still entrusts his doctrines until his sudden death of cholera.

To this day, the decisive role played by war counselor George Leopold von Reiszwitz in the development of this new, semiotic field of operation has not been recognized in the scholarly literature. Also pertinent in this connection is Heinrich von Kleist, who—in the course of the reforms formulated and initiated by Freiherr vom Stein—by no means only wrote plays but also engaged in war games.

After the reconstruction of the historical context—which encompasses the mathematical and military practices as much as the training in them—it will be possible in the final three chapters to focus the general inquiry on a single vanishing point. These chapters pose the question of the domain in which the operations in war and in the realm of numbers converge. That the military and mathematics have always been linked would not be a new claim.<sup>3</sup> However, the lines of connection have hitherto been drawn primarily in the domain of technical achievements. Mathematicians seek to advance such achievements and strategists attempt to make use of them. But if one takes the game as the linking element, it is possible to delineate a space that has not always already been determined by a teleological factor. Rather, the game turns out to be a site from which military and mathematical practices first arise, even before concrete applications are able to justify them. Thus, it is necessary to demonstrate that the mathematical discourse of the 1920s was polarized into formalist and intuitionist positions only on the surface, via the substantiation or rejection of a mathematical metalanguage. Below the surface, however, with the concept of the game, a metalinguistic object had long since prepared a common ground for the controversies.

The war games of the Reichswehr, on the other hand, show what parameters are required for regimes to erect their concrete power structures on

the basis of these paper operations. A special function is thereby assigned to war games: construed as media, they provide information about a historiography in the mode of the General Staff. This historiography has itself become part of military technique. It no longer derives claims to power from the past, but instead—in close connection with map exercises—secures access to immediately pending time periods. Thus it will be necessary to take into account a double contingency: a contingency framework is embedded in the war game, and the incalculable breaches of this framework—which occur in the course of the games—have the most decisive consequences for real military command structures.

The study of war games calls for a critical engagement with game theories and media theories, which set the fictional and the simulation in opposition to reality. The sociologist Jean Baudrillard, for one, long ago announced the dawning of the age of simulacra. In his analysis, simulacra can no longer even be conceived as the appearance of reality, but instead establish themselves through self-referentiality. In opposition to this sociology stands a history of war games—and thus of simulations—that have not been subsumed in absolute virtuality. Instead, they have foundered on stumbling blocks of all sorts. But it is precisely through such failures that war games unleashed a peculiar form of productivity.

The game configurations under investigation should be conceived as techniques through which subjects first constituted themselves. In particular, mathematicians at the beginning of the twentieth century could still believe that they belonged to a discipline that was suspected at best of “playing games.”<sup>4</sup> Yet this actually enabled them, rather inconspicuously, to design the fields of operation for the Second World War. With a focus on John von Neumann as the founder of game theory, that is the topic of the concluding chapter.