**Book Reviews**

**Aircraft in Warfare, the Dawn of the Fourth Arm**

**Frederick William Lanchester**

**London, 1916**

**CHAPTER V: Principle of concentration. The N-Square Law**

* **Principle of concentration:**
  + As Clausewitz refers to bringing as many troops as possible to decisive point as 1st principle of Strategy(Clausewitz, n.d., p. 195), Lanchester similarly asserts that one of the great questions at the root of all strategy is that of “concentration”; concentration of all whole resources of belligerent on a single purpose or object, and concentration of the main strength of his forces, at one point in the field of operations. But unlike Clausewitz he refers material side of concentration as not of principle of strategy rather a scientific phenomenon to be used in tactical operations. For him concentration has two sides, namely moral and material. He analyses controlling factors of it with the sense of contrasting natures of conditions of ancient and modern warfare (Lanchester, 1916, p. 39).
* **The Conditions of Ancient and Modern Warfare Contrasted (p.40-41):** 
  + According to him in ancient times no matter how much strength strategy brings to the theatre of operations, ultimately men will find only men to wield its weapon. Instead of this direct nature of olden times defence, he argues, defence of modern arms is indirect: enemy is prevented from killing you by your killing him first. So, he argues, because of this difference, the importance of concentration in history has not been a constant quantity.
  + Under the old conditions it was not possible by any strategic plan or tactical maneuver to bring other than approximately equal numbers of men into the actual fighting line. Under the present-day conditions all this changed. With modern long-range weapons the concentration of superior numbers gives an immediate superiority in the active combatant ranks. Here he implies that concentration in old times rather difficult to achieve although it was not impossible.
  + In the ancient condition where man is opposed to man, and assuming the combatants to be of equal fighting value and conditions are equal, “duels” will make up the fight and there will be equal numbers killed.
* **Modern Conditions Investigated (p.41):**
  + In the modern conditions, with the same assumptions, each man will in a given time score, on an average, a certain number of hits that are effective, so, the number of men knocked out per unit time will be directly proportional to the numerical strength of the opposing force. He gives also mathematical equation of this like that.
  + He formulates this as:

Text

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b, r: numerical strength of blue and red

t: time

c, k: constants, (c=k if the fighting values of the individual units of the force are equal)

* **Weakness of a Divided Force** (p.43-46)**:** 
  + He gives graphical explanation of “divided forces” weaknesses. He analyses situations and concludes that **if a superior strategy compels** one part to fight in two parts, results would be like the conditions explained below.
    - In a 1:1 force ratio, one could defeat the divided side,
    - In a 1:1 force ratio without division of forces battle would prolong,
    - In a 1: √2 superior force ratio, if inferior force divides superior one, the battle end with no winner.
* **Validity of Mathematical Treatment** (p.46-47)**:**
  + After analyzing these force ratios, he further asserts that “the direct numerical comparison of the forces engaging in conflict is almost universal”. He further goes and asserts that “counting the pieces as of value, and to deny the more extended application of mathematical theory, is illogical and unintelligent.”
* **Fighting Units not of Equal Strength** (p47)**:**
  + He made these force ratio analyses with the assumption of fighting strengths of two sides are equal. In mathematical terms c=k.
  + At this point he asserts that “this condition is not necessarily fulfilled if the combatants be unequally trained or of different morale or if their weapons are of unequal efficiency.
  + He asserts that while we cannot judge on these two factors, but we can calculate weapons efficiency.
* **Influence of efficiency of weapons** (p.48)**:**
  + He asserts that “any difference in the efficiency of weapons may be presented by a disparity in the constants c and k in equations”.
  + With a Blue force of 500 that use rifle and lose 100 men would eventually be equal force of Red with 1000 man that use breech-loader gun with 200 casualties. Here we have different constants and Lanchester shows this again with mathematical equation.

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M, N = representing the efficiency or value of an individual unit of Blue, Red Force

* + He explains this formulation as “fighting strengths of the two forces are equal when the square of the numerical strength multiplied by the fighting value of the individual units are equal.
* **Outcome of this investigation: the n-square law and its proof (p.48-50)**
  + Within this law he defines **the fighting strength of a force**: it is proportional to the square of its numerical strength multiplied by the fighting value of its individual units.
  + Thus, (referring to fig. 5b) he made conclusion of divided forces: sum of squares of two portions of the divided forces are for all values equal to the square of the other (not divided) force.

Diagram, engineering drawing

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* + **Simple proof of this law arising from equations 1 and 2:** Let the numerical values of the blue and red represented by b and r, then in a small interval of time the change in b and r is represented by db and dr of such relative magnitude that db/dr=r/b or

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* + If we draw the squares on b and r and represent the increments db and dr as small finite increments, we see at once that the ***change of area*** of ***b²*** is *2b db*, and ***change of area*** of ***r²*** is *2r dr* which according to foregoing (1), are equal.
  + Therefore, the difference between the two squares is constant. q represents the numerical value of the remainder of the blue force after annihilation of the red.

b²-r² = constant ------> b²-r²=q² ---------> b²=q²+r²

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* + Example of this is an army of 50K giving battle in turn to two armies of 40K and 30K respectively, equally well armed; then the strengths are equal, since 50K²=40K²+30K². But if divided force fight in one part then the army of 50K will be overwhelmed.
* **Example involving weapons of different effective value:** 
  + He gave an example with this assumption: 1 man employing machine-gun can punish a target to the same extent in a given time as 16 riflemen. He analyzes number of men armed with machine-gun necessary to replace a battalion (1000 men strong) in the field?
  + From n-square law: **N r² = M b² -🡪 16\*r²=1\*1000²-🡪r²=√1000²/16 = 1000/4=250** or one quarter the number of the opposing force (p.50).
  + According to him this example exhibits at once the utility and weakness of the method. Basic assumption is that the fire of each force is definitely concentrated on the opposing force. Thus, the enemy will concentrate on the 1 machine-gun operator the fire that would otherwise be distributed over four riflemen. And so, on an average he will only last for one quarter the time, and at 16 times the efficiency during his short life he will only be able to do the work of 4 riflemen in lieu of 16 (p.51).
  + When, on the other hand, the circumstances are such to preclude the possibility of such concentration the value of the individual machine-gun operator becomes 16 riflemen. The same applies when he is opposed by shrapnel fire or any other weapon which is directed at a position rather than individual. So, he concludes that one might pay attention to these variations when assessing the theory (p.51). According to him these variations are less common in naval then in military warfare; the individual unit -the ship- is always the gunner’s mark. He points out that aircraft is more similar to navy ship (p.51).
* **The Hypothesis Varied-modifying initial hypothesis to harmonise with the conditions of long-range fire (p.51-52):** 
  + Assumption: fire concentrated on a certain area known to be held by the enemy, and take this area to be independent of the numerical value of the forces, then, with notation as before, we have;

-db/dt = b\*Nr\*constant

-dr/dt = r\*Mb\*constant ----->M db/dt = N dr/dt --->or the rate of loss is independent of the numbers engaged, and is directly as the efficiency of the weapons.

* Under these conditions the fighting strength of the forces is directly proportional to their numerical strength; there is no value in concentration, qua concentration, and the advantage of rapid fire is relatively great. This is more likely to ancient warfare.
* **An Unexpected Deduction (p.52):**
  + Better for numerically superior force to come to close quarters,
  + Blue force of 100 men with machine-gun vs red force of 1000 men with rifle
  + 1st assumption: both forces are spread over a front of given length at long range.
  + Red force loses 16 men to the blue force loss of 1 man. Red lose.
  + If red come closer enough for each individual have mark, red would lose half to come closer, **but would win, by n-square law: 600²\*1>100²\*16**
* **Examples from history (p.53):**
  + Principle: on the field of battle “concentration” matter of the most vital importance.
  + Controlling factors both in strategy and tactic.
  + Attacking of opposing force before concentration gained: defeat of Napoleon in Italy campaign.

**CHAPTER VI: The N-Square Law in its Application**

* The N-Square Law in its Application to a Heterogeneous Force (p.54-55):
  + **chapter V summary:** Fighting strength of a force, so far as it depends upon its numerical strength, is best represented by the square of the number of units.
  + Where individual fighting strengths of the component units (land, navy or air) may be different, it has been shown that if a numerical fighting value can be assigned to these units, the **fighting strength of the whole force** is as the square of the number multiplied by their individual strength. Nr²=Mb²
  + Where the component units differ among themselves, as in the case of a fleet that is not homogeneous, the measure of the total of fighting strength of a force will be the ***square of the sum of the square roots of the strengths of its individual units.***
* **Graphical Representation** (p.55)**:** 
  + The strengths of a number of separate armies of forces successively mobilized and brought into action are represented by the lines a,b,c,d,e, and aggregate fighting strength of these armies are given by the lengths of the lines A,B,C,D,E, each being the hypotenuse of a right-angle triangle, as indicated.
  + Thus, two armies a and b, if acting separately (in point of time), have only the fighting strength of a single force or army represented numerically by the line B.

Diagram

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* **N-square law in naval warfare (p.57-58):**
  + N-square law applies to military operations;
    - on land: there may be special conditions to the hypothesis whereby its usage maybe masked.
    - naval warfare: however, the conditions strictly conform to basic assumptions. Thus, when battle fleet meets battle fleet, there is no advantage to the defender analogous to that secured by the entrenchment of infantry.
  + In a naval battle every shot fired is aimed at one enemy’s ship; there is no firing on the mass.
  + Old conditions (1000-yard effective range): advantage could be taken of concentration within limits. 18th century tactics makes it apparent that with any ordinary disparity of numbers (probably in no case exceeding 2 to 1) the effect of concentration must have been not far from that indicated by theory.
  + With a battle-fleet action at the present day the conditions are still more favorable to the weight of numbers, since with the modern battle range-some 4 to 5 miles- there is virtually no limit to the degree of concentration of fire.
  + Further than this, there is in modern naval warfare practically no chance of coming to close quarters in ship-to-ship combats, as in old days.
  + Thus, the conditions are to-day almost ideal from the point of theoretical treatment. Numerical superiority of ships of individually equal strength will mean definitely that the inferior fleet at the outset has to face the full fire of the superior.
  + The same observations will probably be found to apply to aerial warfare when air fleets engage in conflicts, more especially so in view of the fact that aeroplane in three dimensions of space instead of being limited to two, as in the case with the battleship. This will mean that even with weapons of moderate range the degree of fire concentration possible will be very great.
* **Individual value of Ships or Units (p.59):** 
  + Deciding the value of individual units is difficult.
  + Fighting value of ship depends not only to armament but also to protective armor. Question of fleet strength can never be reduced quite a matter of simple arithmetic.
  + May be gauged by the weight of its “broadside” or more accurately, taking into account the speed with which the different guns can be served, by the weight of shot that can be thrown per minute.
  + Another basis may to compare energy per minute for *broadside fire*, which represents, the horsepower of the ship as a fighting machine.
  + Similar means of comparison for aeroplane, though it may be that the *downward fire* capacity will be regarded as of vital importance.
* **Applications of the n-square Law (p.59-61):**
  + The **n-square law** tells us at once the price or penalty that must be paid if elementary principles are outraged by the division of battle fleet into two or more isolated detachments.
  + If battle fleet separated into 2 equal parts, increase would require to be fixed at approximately %40 percent – that is to say, in relation of 1 to √2; more generally the solution is given by a right-angled triangle.

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* **British Naval Tactics in 1805 (p.62):**
  + Not form in a line-of-battle parallel to the combined fleet
  + Break the line, envelop rear, overpower with groups of ships, isolate enemy and cut off.
  + First tactics according to Lancaster, advantages of fire concentration.
  + Van cannot help rear
* **Nelson’s Memorandum and Tactical Scheme (p.63, 64):**
  + British formed 2 main columns.
  + One of the main columns was to cut the enemy’s line about the centre,
  + Other to break through about 12 ships from the rear,
  + Smaller column being ordered to engage the rear of the enemy’s van 3 or 4 ships ahead of the centre, and to frustrate, every effort the van might make to help centre or rear.

Diagram

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* **Nelson’s Tactical Scheme Analysed (p.65-66):**
  + Nelson planned to envelop the half of -23 ships- combined fleet with 32 ships. This, according to n² law would give him superiority of fighting strength of almost exactly 2 to 1[[1]](#footnote-1).
  + Strength of British in arbitrary n² units:32²+8²=1088
  + Combined fleet: 23²+23² = 1058
  + British advantage:30, remaining British ship: √30=5.5 ships
  + If they had engaged in older times tactics:
  + strength of combined fleets 46²=2116
  + strength of British fleets: 40²=1600, Balance in favor of combined fleet would be 526, in ship terms √516= 23.
  + Thus, we are led to appreciate the commanding importance of a correct tactical scheme. If old-time method of attack had been adopted, British could not avert defeat.
  + First: Definite statement of cutting the enemy into two equal parts – according to n-square law the exact proportion corresponding to the reduction of his total effective strength to a minimum
  + Second: the selection of a proportion, nearest whole number equivalent to the √2 ratio of theory, required to give a fighting strength equal to tackling the two halves of the enemy on level terms, and the detachment of the remainder, the column of 8 sail, to weaken and impede the leading half of the enemy’s fleet to guarantee the success of the main idea.

**CHAPTER VII: Attack by Aeroplane on Aeroplane. The Fighting Machine and Its Armament**

* **Attack by Aeroplane on Aeroplane (p.67-68):**
  + Lancester emphasize that in the 1St World War period main duty of aeroplane was reconnaissance, but he foresaw that by the next war they will be used to attack each other.
  + He says that, with the technology by this time, it is not easy to attack to aeroplane on the air. So, it is not easy to give casualties to enemy.
* **The Fighting Machine as a Separate Type (p.68-69):**
  + Long distance reconnaissance flights or strategic scout should not be deemed fighters, but tactical scout should be engaged by enemy so it has to defend itself or some other fighters defend scout planes.
  + So, he foresaw need of rendering the tactical reconnaissance type capable of taking the offensive, so that it may establish its ascendency over the similar craft of the enemy.
  + But he emphasizes heavily armed fighting machine will provide air supremacy. Until this time tactical scout is playing double role (recce and fighting).
* **The Question of Armament; Treaty Restrictions (p.70-72):**
  + Int the specification of a fighting type of aeroplane the consideration is means of attack. These fall two main categories:
    - fire-arms (machine-gun, mitrailleuse) and
    - gravitational weapons (bombs, grenades etc.)-ill suited to conditions of aircraft.
  + Light artillery may be mounted, but only the very smallest calibre -namely, the “one pounder” can be considered suitable for present day machines.
  + The use of smaller size of projectiles is prohibited by treaty obligation. Any explosive projectile less than 1 lb. weight (400 gr) is banned by the Declaration of St.Petersbourg of 1868.

**CHAPTER VIII: Rapidity of Fire and Its Measure**

* **Rapidity of Fire and Its Measure (p.77-78):**
  + Index of fighting value: rapidity of gun-fire from aeroplane or dirigible depends on nature of target.
  + Some cases: number of projectiles per minute is most important factor, as, for example, in attacking any object in which hit is hit whether the projectile be large or small.
  + Other cases: where the mischief done is in any reasonable relation to the weight of the projectile, the total weight of projectiles discharged per second affords better criterion.
  + In view of comparatively fragile nature of aircraft, it is doubtful whether the energy equivalent of the discharge will ever be of the importance which it in the case of the battleship, where the destruction of the enemy depends to a very large extent upon the number of foot-tons with which he is assailed.
  + Thus, it is doubtful whether a factor representing the hp of the offensive armament would, as applied to the fighting aeroplane, will have any useful significance.
  + Not probable, fighting machine have complete bullet proof protection, at short range. So unimportant which bullets used in its destruction. Weight and size is only important when a single hit is sufficient to carry away an important structural member which would have been penetrated without great injury by a bullet of ordinary size.
  + So long as we are dealing with ordinary rifle, pistol or mg fire, we are concerned merely with the ***number of bullets that can be discharged per unit time***. This number express **value of armament.**
* **Measure of Fire Value in the case of Explosive Projectiles (p.78-79):**
  + In the context of throwing explosive projectiles, it is impossible to maintain any direct basis of comparison.
  + Effectiveness of the shell fire depends upon the conditions (range must be known, time-fuse mechanism perfect, nature of target).
  + Granted that necessary conditions exists, destruction wrought by any given type of explosive projectile maybe taken as, in a measure, proportional to its weight. However, there are cases where 3 lb. high explosive maybe effective than 18 lb. if hit at the motor.
  + Comparing the relative value of armament of diverse type for aeroplane (mg or small artillery) we need to examine the service for which the armament is required; it is impossible to institute a direct quantitative comparison which would be generally applicable.

**Military Power**

**Stephen Biddle**

**2004**

**Preface**

Biddle argues that although many scholars and policy makers believe future wars will be predominantly different from the past ones he argues that continuity rather than change prevails in the character of warfare. He further argues that real causes of battlefield success is stable since World War I, although there were many technological developments. Contary to many scholars and policy makers who believe that gross numerical strength and material resources are the main sources of the prevailing the battlefield, he argues that both material and non-material factors interact to produce success on the battlefield. He dubbes the paerticular nonmaterial variable as “force employment” and details how it interacts to produce battle outcome. (Biddle, 2006, p. ix). Preface ix.

**Chapter 1 Introduction**

He argues that altough the questions like “what causes victory and defeat in battle?” are life-and-death questions, the answers often fall short. He takes World War I, World War II, 1973 Arab-Israel War and Gulf War as example and states that in the whole of these wars, results baffled the participants. Nobody expected four year stalement and trench war which exhausted many resources in World War I, nobody expected German swift victory in France in World War II, nobody expecte Israeli defeat and help request in 1973, and finally nobody could have estimated such a minimum casualty of Coalition Forces in Gulf War(Biddle, 2006, pp. 1–2).

His points for the methodology in analyzing the subject is remarkable. He says that, most analyses are either rigorious but narrow, or broad but unrigorious. He asesses that mathematical models are emphasizing material factors alone, meanwhile “holistic assessments” takes into account factors such as strategy, tactics, morale, combat motivation, or leadership or as well as just material but treating these varaibles less systematically. He further assesses that “real progress demands rigor and breadth: a systematic treatment of both material and nonmaterial variables”. To conduct such an treatment he proposes “one key nonmaterial variable: force employment”, and he defines this as “the doctrine and tactics by which armies use their material in the field” (Biddle, 2006, p. 2)

Since he assesses that there are number of patterns of force employment, he prefers to held a particular pattern of it. And he dubbs this pattern as “the modern system”. According to him modern system “has been pivotal in the 20th century and is likely to remain so”. (Biddle, 2006, p. 2)

He argues that “since at least 1900, the domianant technological fact of the modern battlefield has been increasing lethality. Even by 1914, firepower had become so lethal that exposed mass movement in the open had become suicidal. Subsequent technological change has only increased the range over which exposure can be fatal. To perform military missions in the face of this storm of steel requires armies to **reduce their exposure**, and since 1918 the central means of doing so has been modern system employment”.(Biddle, 2006, pp. 2–3)

His treatment of the subject of modern system is like intervening variable for the outcome of the battle. He suggests that numbers matters only if they can be exploited by modern-system force employment(Biddle, 2006, p. 3). Hew proposes two examples of this argument, one is Iraqi Army in Gulf War, although they seem to be powerful by numbers, they have been mismanaged, and lost the war, and the second is North Vietnamese Army, although weak in numbers, mananeged properly and made unexpected resistance in the war. According to him these results challenged a wide variety of standard views. (Biddle, 2006, p. 3)

He advises to be more cautious on the propositions of Revolution in Military Affairs which indicates that long-range precision air and missile strikes will dominate future warfare while ground forces role would be limited by scouts etc. He says that overgeneralization of the results of Gulf War may lead to make false policy decisions(Biddle, 2006, p. 4).

**What is Military Power?**

He claims that war outcomes is not product of military power alone. And this military power can mean different things in different context like offence or defence etc. He proposes that if capability is the ability to succeed at an assigned mission, different states will thus assess capability very differently for the same forces. And he further states that no single concept of “military capability” can apply to all conflicts in all places and times(Biddle, 2006, p. 5).

In his analysis he picks the **mission of controlling territory** in mid- to high-intensity continental warfareto evaluate capability. He than selects three criteria to assess success in these missions: the ability to destroy hostile forces while preserving one’s own, the ability to take and hold ground, and the required time. He than offers offensive and defensive definitions of capability. He defines offensive military capability as “the capacity to destroy the largest possible defensive force over the largest possible territory for te smallest attacker casualties in the least time; and he defines defensive military capability with conversing the offensive one: “the ability to preserve the largest possible defensive force over the largest possible territory with the greatest attacker casualties for the longest time. (Biddle, 2006, p. 6)

He then selects the unit of analysis as “operation”. And he expands as the operation as a series of interconnected battles resulting from a single prior plan. These interconnected battles in a single theater constitute a campaign. He gaves the example of Normany Campaign which constitutes Operations EPSOM, GOODWOOD and COBRA. By mid- to high-intensity conflict he means in between of guerilla warfare and global thermonuclear war, namely regional conventional wars such as Afghanistan War, while excluding the two extreme ends. (Biddle, 2006, p. 6)

**Methodology**

He states that since there is no overarching methodology to explain capabilty, he combines historiography with formal theory, case method, statistical analysis, and simulation experimentation. (Biddle, 2006, p. 9)

His emphasis on history part is the role of doctrinal adaptation for the wars course and outcome. And the formal theory facilitates to overcome the limites and complex interconnecting claims of the historiography by using mathematical language to describe relationships. Though, this also has limites, because it abstracts away real issues in sake mathematical clarity. So he places history first. And harness these claims with mathematical analysis. (Biddle, 2006, p. 9)

He tests this approach with three methods. First one is **case study** to provide maximum theoretical leverage. Then he applies a **small-n- ase method** to characterize the variables, like force employment which he claims never had been tried before. To generalize the results he compliments the case studies with a series of **large-n statistical analyses**. He inserted the new variable of force employment with ***treating it indirectly via enabling assumptions and proxy variables***. He also includes ex ante experiments via a simulation tool, changing key features while holding all other aspects constant to deduce a more systematic framework which is not experienced by real time fights. (Biddle, 2006, p. 10)

**p.14**

**Ideas on the Determinants of Capability**

Ideas about capability and states that these ideas fall into three broad classes which are numerical preponderance, technology, and force employment.

1. **Numerical Preponderance**

“God is on the side of the big battalions.” quotation of Napoleon summarizes preponderance explanation of military capability.

He states that association of victory with material preponderance underlies the widespread perception that economic strength is a necessary precondition for military strength, and effects the national strategy making equaly with politic-military considerations. In the end most of these preponderance arguments claims only that numerical superiority determines capability. (Biddle, 2006, p. 14)

He then gives some detail accounts of this approach and mentions about **“density”** term of especially Liddle Hart and Mearsheimer. He summarizes these scolars approach and states that “density matters rather than just force size: the higher the “force-to-space” ratio, the greater the defender’s relative advantage, and vice versa”. (Biddle, 2006, p. 14)

*Basil Liddle Hart, The ratio of troops to space, Military Review 40, April 1960,*

*Mearsheimer, Conventional Deterrence, pp.47-48, 181-183.*

**p.15**

He summarizes also briefly the approaches of threshold effects via **“rules of thumb”** from again mainly Liddle Hart and Mearsheimer, saying that most common holds that successful attack requires at least a 3:1 local superiority. He reflects that especially Liddle Hart and Mearsheimer thought which states that these ratios should compare quality-adjusted “combat power” rather than simple troop strength, yet he says, these scholars and writers doesn’t provide explanation on how these adjustments will occur. (Biddle, 2006, p. 15)

*Basil Liddle Hart, Defense of Britain (London: Faber and Faber, 1939) pp.54-55*

*John Mearsheimer, Assessing the Conventional Balance: The 3:1 Rule and its critics, International Security 13, 4(Spring 1989), pp.54-89*

He finalises this approach by stating that; in this approach it is relied on simple measures of gross preponderance per se: the greater A’s numerical superiority over B, the greater its relative capability. (Biddle, 2006, p. 15)

1. **Technology**

There are two schools within this approach.

* **Systemic Technology Theory:** 
  + Focuses on the gross “state of the art” in the international system at any given time rather than the particulars of individual states’ holdings.
  + The difference between era of tanks and the era of the horse is the “key”, not which side’s tanks are better than the others.
  + **Offense-defence theory:** 
    - Technology changes **shifts** the relative ease of attack and defence for all states in the international system.
    - Ex: Prior to 1914 it mattered little how any single state was armed. The machine gun made attack impossible for anyone. Tanks balanced back to attack. The one who took offence has important edge over opponent.
    - Offers political science’s chief understanding of technology’s role in international security.
    - Widely used to explain war causation, arms racing, alliance formation, crisis behaviour.
  + **Technology’s main effect** is not to strengthen state A to state B- it strengthens attackers over defenders (or vice versa) regardless of who attacks and who defends.

Second school in the technology approach is dyadic technology theory which claims the one who has the technology edge prevails.

**On War**

**Clausewitz**

**BOOK ONE: ON THE NATURE OF WAR**

**CHAPTER ONE: WHAT IS WAR?**

**+ Definition:**

**p.75**

* War is nothing but a duel on a larger scale.
* Each tries through physical force to compel the other to do his will; his immediate aim is to throw his opponent to make him incapable of further resistance.
* War is thus an **act of force** to compel our enemy to do our **will** (definition based on “hostile intentions” perspective of human psychology, p.76).
* Force, to counter opposing force, equips itself with the inventions of art and science.
* Force-that is, physical force, for moral force has no existence save as expressed in the state and the law-is thus the means of war; to impose our will on the enemy is its object.
* To secure that object we must render the enemy powerless; and that, in theory, is the true aim of warfare.
* That aim takes the place of the object, discarding it as something not actually part of war itself.

**+ The maximum use of force**

* There is no ingenious way to disarm or defeat an enemy without too much bloodshed. Do not imagine this as the true goal of the art of war.
* To disarm or defeat an enemy one must use maximum force possible. Using intellect may go alongside it.
* Not be deterred by the bloodshed, which **nature of the war** necessitates.

**p.76:**

* Social conditions of the sides which cause war may moderate and designate the severity.
* To introduce the principle of moderation into the theory of war would always lead to logical absurdity.
* Cause of the war is based on the human insticnts.
  + There are two different motives that cause the fight between two men: hostile feelings and hostile intentions.
  + The definition of war is based on the hostile intentions because of it is more general.
  + Every human feeling, like hatred can be explained with hostile intention.
    - There is no difference between the nature of civilized and savagery societies.
    - The difference is the level of institutional progress.
    - Even the most civilized of peoples, can be fired with passionate hatred for each other.
  + **Wars are not resulted from rational act only; these feelings play its role also.**
* Without these feelings, it would be enough to compare physical forces to decide who wins and war would be termed as “algebra war”, which never happens.
* Because the war is act of force, the emotions do involve and affect the war to some degree. And this depends on how far conflicting interest exist, not in level of civilization.
* The invention of gunpowder and the constant improvement of firearms are enough to show that the advance of civilization has done nothing practical to alter the impulse to destroy the enemy, which is central to the very idea of war.

**p.77:**

* War is an act of force, and there is no logical limit to the application of that force. Each side, compels its opponent to follow suit; a reciprocal action is started which must lead, **in theory**, to extremes. This is the first case of interaction and the **first "extreme"** we meet with.

**+ The aim is to disarm the enemy:**

* Aim of the warfare is to disarm the enemy. To achieve he argues that the enemy should be put in an enough dangerous situation to accept that. Otherwise, it should wait to improve condition.
* War is not the action of a living force upon a lifeless mass. The enemy is also living force so it m ay do the same thing for me. So, these reciprocal aims constitute the **second extreme**.

**+ The maximum exertion of strength**

* If you want to overcome your enemy you must **match your effort against his power of resistance**, which can be expressed as the product of two inseparable factors, viz. the total means at his disposal and the strength of his will”.
* While means should be measurable, strength of will can only be measured “approximately” by the strength of the motive animating it. Once you accurately estimate power of resistance of opponent you adjust yours.
* That is, “you can either increase them until they surpass the enemy's or, if this is beyond your means, you can make your efforts as great as possible”. And according to his conceptualization since the sides do the same this situation will take us to **third extreme**.

**6. Modifications in practice:**

**p.78**

* Since each side will try their extreme ends on the means and objectives, this will never produce real life understanding of the war.
* It is nearly impossible to reach this kind of perfection. In other word, realities will force participants to be far more back of the desired means and desired objectives.
* Belligerents shall act in line with pure concept of abstracts if;
  + War was an isolated act,
  + War consists single act,
  + Decisions were complete and perfect.

**7. War is Never an isolated act**

* There are three reasons which prevents the human to reach such a perfection. First, war is not an isolated act which means resistance of power depends on the human will and this will fall short of perfection. And this according to Clausewitz should be measured with comparing past actions of the sides.

**8. War does not consist of a single short blow**

**p.79**

* Second reason why it is impossible to act in line with pure concept is war necessitates successive decisions and actions rather than a set of simultaneous decisions and a single action.
* This nature also moderates the warfare, preventing it to reach extreme. Since these decisions and actions are seen in context, they will provide a measurement for those that follow.
* It is impossible to mobilise all available means to a single action. Real world calculations will force sides to allocate part of the resources which in turn will make the war successive actions and decisions.
* Resources in question is fighting forces, the country, with its physical features and population, and its allies.

**9. In war the result is never final**

**p.80**

* Third reason to prevent to reach to extremes is the thought that every participant should think that political conditions should appease the transitory evils.

**10. The probabilities of real life replace the extreme and the absolute required by theory**

* These real-life conditions modify these three extremes.
* Since these real-life conditions will prevent each side to act in line with extremes, they will **decide** the degree of effort.
* This degree of effort will be based on the phenomena of real world and the laws of probability. From the enemy's character, from his institutions, the state of his affair: and his general situation, each side, using the laws of probability, forms an estimate of its opponent's likely course and acts accordingly.

**11. The political object now comes to the fore again**

* The more the law of extremes loses power with real life condition modifications, political object become more important.
* Political object should be always included in the calculation of probabilities. Because it is the **original motive** for the war.

**p.81**

* Resistance of opponent depends on the penalty you request from him.
* So, if an opponent request high value asset, it will face greater resistance. This is another modification.
* With this feature political object determines both military objective and amount of effort it requires.
* The political object cannot, however, provide the standard of measurement. It differs time to time and according to people. We can therefore take the political objects a standard only if we think of the influence it can exert upon the **forces** it is meant to move.
* The **nature of those forces** therefore calls for study. Depending on whether their characteristics increase or diminish the drive toward a particular action, the outcome will vary.
* Relations between political military objectives are calibrating themselves according to degrees of importance and intensity of the war itself.

**+ An interruption of military activity is not explained by anything yet said:**

**p. 81, 82**

* Every action needs a certain time to be completed. That period is called its duration, and its length will depend on the speed with which the person acting works.
* Now if every action in war is allowed its appropriate duration, any additional expenditure of time-any suspension of military action-seems absurd.
* Suspension means not the progress made by one side or the other but the progress of military interaction as a whole.

+ **Only one consideration can suspend military action, and it seems that it can never be present on more than one side**

**p.82**

* If two parties have prepared for war, that motive will make the hostility persist.
* Only if one side thinks that it is beneficial to wait for a better moment, acting may pause.
* In this condition other side would desire to act rather than wait.
* It is not concept of balance that result a standstill but it is aim and strength.

**p.83**

**+ Continuity would thus be brought about in military action and would again intensify everything**

* There is another extreme point, where one side will never let the other side pause the hostility if it is advantageous to act.
* War does not show such continuity. In real life he implies, there will be times in warfare the sides will cease activities for any reason that circumstances require.

+ **Here a principle of polarity proposed**:

* There is a truly polarity in warfare since one side’s victory cancels other sides.
* This polarity lies not in the things (two sides) but in their relationships.

+ **Attack and defence being things different in kind, polarity cannot be applied to them**

* Polarity lies in the “decision”, which two side is trying to achieve objective. It doesn’t lie in the kind of warfare or kind of military action like attack or defence.
* If it is in A's interest not to attack B now but to attack him in four weeks, then it is in B's interest not to be attacked in four weeks' time, but now.

**+ The superiority of defence over attack often destroys the effect of polarity, and this explains the suspension of military action.**

**p.84**

* Defense is stronger form of fighting than attack.
* Questions to answer:
  + Postponing a decision is more advantageous for attacker or defender?
  + Is that advantage is bigger than the natural advantage of defence?
* If this advantage is not bigger than the natural advantage of defence, then the attacker will not postpone the decision.
* To fight a defensive battle under less favourable conditions may still be better than to attack immediately.
* For attack good preparation is needed. If you attack immediately defence will stop, you. So, attacker will wait to consolidate his power.
* **Conclusions:** 
  + Polarity impulse would be moderated by this trade-off.
  + Natural advantage of defence explains periods of inactions in the war.

**+ A second cause is imperfect knowledge of the situation**

**p.84-85**

* Human nature tends to see enemy’s strength too high, so this nature when coupled with insufficient intelligence about enemy, makes the commander halt the action.
* The **possibility of inaction** has a further **moderating effect** on the progress of the war by diluting it, so to speak, in time by delaying danger, and by increasing the means of restoring a balance between the two sides.
* **Periods of inaction depends on tension.**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Tension | Motive | Willpower | Effort | Inaction periods |
| High | High | Strong | High | Short |
| Low | Low | Weak | Low | Long |

**P.85**

**+ Frequent periods of inaction remove the war from abstraction and extremes and make even more a matter of assessing probabilities.**

* Since with inevitable interruptions of activities it will be easier to correct any possible mistakes so that **generals** can make **bolder decisions**.

**+ Therefore, only the element of chance which always exists is needed to make war a gamble:**

* Since now, all explanations bring us to the point that since there is no absolute assessments, since there are no extremes, the **objective nature of the war** makes it a matter of assessing probabilities.
* And, if chance factor is added to this nature, that it always exists, then war becomes **gamble**.
* Through this chance element, **guesswork and luck** come to play a great part in war.

**+ subjective nature of the war also makes war a gamble:**

* **Subjective nature of the war** is “**the means** by which war has to be fought”.
* Because of these means the war look more than ever like a gamble.
* In **danger,** which is an **objective nature of the war**, human beings exhibit different **moral qualities.** 
  + “courage” is the most important quality in danger.
  + courage is compatible with the “**prudent calculation**” although these two stems from different **psychological forces.**
  + boldness, rashness, trusting luck are variants of courage
  + In war courage seek its proper element – chance.

**p.86**

* **Absolute (mathematical) factors**, never find a firm basis in military calculations.
* There is an interplay of possibilities, probabilities, good luck and bad that weaves the outcome.
* In the whole range of human activities, war most closely resembles a game of cards.

**+ This situation best suits human nature:**

* While **intellect** prefers **certainty**, human nature finds **uncertainty** fascinating.
* Human being evaluates these possibilities and activates **human feelings** like **courage**.
* Because of this, human factor must be included to the theory of war.
* The art of war deals with living and with **moral forces**. Because of this forces theory of war must always leave a margin for **uncertainty.**
* This uncertainty however is **balanced with** **courage** and **self-confidence**. The greater these two scales are, the greater margin that can be left for accidents. ?
* Thus, courage and self-confidence are essential in war, and theory should propose only rules that give ample scope to these military virtues, in all their degrees and variations.

**+ War is a serious means to a serious end: a more precise definition**

* This is the nature of war. There is commander who directs it, and the theory governs it.
* This nature of war although resembles a game of chance, it is a serious means to serious ends.

**p.87**

* Political situation & object (purpose) is always constituting the reason for war.
* War is not absolute manifestation of violence like a mine that explodes in predefined direction. In such case, war might drive the policy out of function.
* But war is the effect of forces that creates pulsation of violence, variable in strength and in the speed.
* Since war is a mean to reach political purpose, it will remain subject to the political will. This will remain the supreme consideration in conducting it.

**+ War is merely the continuation of policy by other means**

* **Second definition of war**: “war is both an act of policy and a true political instrument, a continuation of political intercourse, carried on with other means. What remains peculiar to war is simply the peculiar nature of its means.”
* Commander may request modifications of policy if there are inconsistencies in the use of means.

**+ The diverse nature of the war:**

**p. 88**

* War approaches to its abstract concept if the **motive** of the war is high. In this case political objectives coincides with military element’s **natural tendency to violence** and objectives.
* Conversely if the motives are less impulsive, political object will be more at variance with the aim of war, and the conflict will be predominantly political.
* **Tendencies of the forces** are separate subject and includes **morale** and the **emotions of the combatants**.

**+ All wars can be considered acts of policy**

* Policy is effaced in high motivated war and strong in the motives for the war is less.
* But both kinds are equally political.
* But if politics is apparently abstaining from using of force, then the second one becomes more political than the first one.
* Political will mut be ready for the contingencies in which policy effect is negated by violence, military.

**+ Effects of this view:** Nature and the theory of war:

* 1st: War is never something autonomous but always is an **instrument of policy.**
* 2nd: This is how **wars varies** with the **nature of their motives** and of the **situations** which give rise to them.
* 3rd: Judgment or **decision** to be made by statesman and commander&1st strategic question: identify the kind and nature of war.

**+ Consequences of the theory:**

**p.89**

* War is more than a chameleon that slightly adapts its characteristics to the given case.
* Dominant tendencies of war make it a paradoxical trinity.
* Tendencies of this trinity variable in their relationship. Any theory would contain all three and would not fix them to some degrees. It is important to develop a theory that maintains a balance to given situation.
* These three are the magnets and theory like an object suspended between.
* Preliminary concept of war which we have formulated casts a first ray of light on the basic structure of theory.

**Paradoxical Trinity of War**

|  |  |  |  |
| --- | --- | --- | --- |
| **No** | **Elements & tendencies** | **Mainly concerns** | **Depends** |
| 1 | Violence, hatred, and enmity: regarded as blind natural force. | People | Passion to kindle |
| 2 | Play of chance and probability within which the creative spirit is free to roam. | Commander and his army | Character of play of the courage and talent in the realm of probability and chance |
| 3 | Element of subordination to policy. | Government |  |

**BOOK ONE: ON THE NATURE OF WAR**

**CHAPTER TWO: Purpose and Means in War**

**P.90, 91**

1. **ENDS:**

+ Complex and changeable nature of the war **influences** its purpose and means.

+ Military objectives of war serve to political end. And it may vary like its political objective and circumstances.

+ **In the pure theory (**theoretical concept**) of war**:

* **Political purpose of war had no connection with war itself**; for if war is an act of violence meant to force the enemy to do our will **its aim** would have **always** to be to **overcome the enemy and disarm him.**
* Many wars do come very close to fulfilling it, let us examine this kind of war first.
* **Distinguish 3 things & objectives that cover everything:**

**3 Broad Objectives of War**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Broad objectives** | **Function** | **What to do?** | **Mean** |  |
| 1st objective: Armed forces | Assure the safety of country | To be destroyed, gradual process | Put them a  condition that they can no longer carry on the fight |  |
| 2nd objective: Country | Keeps army functioning | To be occupied, gradual process | To the degree enemy could not raise fresh military forces | Occupied country restarts the resilience with the help of allies |
| Final objective: Enemy’s will |  | To be broken, to be taken to peace table, | Government to sign peace, population to submit.  With the conclusion of peace, the purpose of the war has been achieved. | reciprocal effects of hostile elements, cannot be considered to have  ended so long as the enemy's will has not been broken |

**p.91**

* Most peace treaties are done before totally **disarming the enemy**. This political aim in pure theory is unreal.
* There is **one category of war** where enemy is stronger: idea of defeating the enemy is unreal.
* Theoretical object of the war is sometimes inappropriate. Because of the **two kinds of war**.
  + **Pure theory:** States are equal in strength (reciprocal actions). At most, material disparity could not go beyond the amount that **moral factors could replace** (Europe today).
  + **In reality:** War shifts itself from pure concept toward probabilities. Wars are fought between states with unequal strength. Analysis of probabilities may show these **grounds for making peace.**
    - Inability to carry on struggle
    - improbability of victory
    - its unacceptable cost.
  + Not every war need be fought until one side collapses. When the motives and tensions of war are slight, very faintest prospect of defeat might be enough to cause one side to yield.
  + If from the very start the other side feels that this is probable, it will obviously concentrate on bringing about this probability rather than take the long way round and totally defeat the enemy.

**p.92**

* Consciousness of efforts so far and efforts to come influence **decision to make peace**.
* Policy decides **sacrifices to be made in magnitude** and in duration to reach to political aim.
* Once the expenditure of effort exceeds the value of the political object, the object must be renounced, and peace must follow.
* If one side cannot completely disarm the other desire for peace on either side rise or fall according to the probability of further success and amount of effort these would require.
* If the incentive grows on one side, it should diminish on the other. Peace will result so long as their sum is sufficient
* Side that feels the lesser urge for peace will naturally get the better bargain.
* **Positive or negative character of the political ends** is bound to produce a difference. And this difference is ignored for now.
* Original political objects can greatly alter or completely change during the course of the war.
* **1st question- how success can be made more likely?**
* **One way:**
* To choose two objectives that will incidentally bring about the enemy's collapse
  + destruction of his armed forces and
  + conquest of his territory.
* These two would not happen If the real object is total defeat of enemy.**?**
* Series of ops until all resistance is broken **differs** an operation to obtain single victory to make unsecure the enemy. Resource allocation differs.
* Conquest of territory is a different matter if the enemy's collapse is not the object.
* If we wish to gain **total victory**, then the destruction of his armed forces is the most appropriate action and the occupation of his territory only a consequence.
* Occupation of land before destroying the opposing army is evil unless this aim is subtask.
* **Another way:**
* To disrupt the opposing alliance, favourably affect the political scene. Shorter route to the goal than the destruction of the opposing armies.
* Operations that have direct **political repercussions,** without defeating the enemy's forces.

**p.93**

* **2nd question -** **how to influence (increase) the enemy's expenditure of effort? Or how to make the war more costly to him?**
  + Expenditure of effort consists wastage of his forces and loss of territory.
  + **5 Methods:** 
    - **Destroy the enemy** for wastage of forces.
    - **Conquer the land** for loss of territory.
* **Both factors** vary in their significance with variation in objectives.
* As a rule, the **differences will be slight**, but when strong motives are not present, the slightest nuances often decide between the **different uses of force**.
  + - **Invade** to exact financial contributions not to retain it to cause damage.
    - **Give priority to operations that will increase the enemy's suffering:** 
      * **Priority to military operations,** if the purpose is to defeat the enemy, this is advantageous.
      * **Priority to political alternatives**: more profitable if the enemy cannot be defeated.
    - **Wear down (outlast) the enemy** which lies at the heart of pure resistance, is also the natural formula for this.
      * Use the duration of the war to bring about a gradual exhaustion of physical and moral resistance. the most important.
      * **Holding out more than enemy is possible with being content with the minimum** possible object.
      * **Negative aim (policy):**
* The **minimum object** is pure self-defense (negativity); in other words, fighting without a positive purpose.
* Relative strength will be at its height, and thus the prospects for a favourable outcome will be greatest.
* How far? Not to the point of [absolute passivity (sheer endurance)!= fighting]
* But resistance is a form of action, aimed at destroying enough of the enemy's power to force him to renounce his intentions.
* If a single action succeeds, contribution of positive policy is greater than negative one.
* But the probability of succeeding in negative policy is greater than positive one and gives you more security. What it lacks in immediate effectiveness it must make up for in its use of time, that is by prolonging the war.

**p.94**

* This distinction makes the difference between attack and defence.
* All the advantages comes from the negative purpose.
* With negative aim the advantage need only be enough to balance any superiority the opponent may possess. In the end his political object will not seem worth the effort it costs.
  + - * This method applies to the great number of cases where the weak endeavour to resist the strong.
      * Frederick the Great as an example of wearing down the enemy, as he was although had bad conditions throughout the war in Sever Year War, he used his strength patiently and by this time opponents against him weakened by other circumstances (for example Russian Czar died, for other states the cost of war has raised) he succeeded.
* **Summary ~ Roads lead to success is** range from the destruction of the enemy's forces, the conquest of his territory, to a temporary occupation or invasion, to projects with an immediate political purpose, and finally to passively awaiting the enemy's attacks. Any one of these may be used to overcome the enemy’s will. Choice depends on circumstances.
* **Ad hominem:** 
  + Another shortcut to reach to aim.
  + Direct the attacks to personality.
  + Personalities and relations between personalities of commander and statesman may be manipulated.
  + The sparks that caused because of this may be used to reach the goal.
* These shortcuts never be omitted because of its rarity. Because wide a range of political interests can lead to war. From war of independence to a war reluctantly declared because of the alliance. Between these two there are numerous gradations. Do not omit one.

**p.95**

1. **MEANS**

**Combat**

He argues that there is only one mean, and it is “combat”.

In the concept of war that everything that occurs must originally come from battle although it has many forms, and the severity varies. Because in war there are armed forces. Whenever armed forces used, combat is present.

Warfare comprises everything related to the fighting force;

* Creation and maintenance are means of it
* Usage is ends

Combat in war is a contest between individuals. It is made up of many parts.

**Two distinguishable elements of combat:**

|  |  |  |
| --- | --- | --- |
| **element** | **Determined by** |  |
| mass of combatants in an army forms fresh elements of a greater structure, The fighting activity of these parts | subject | (More or less) Defined element |
| element of war by its very purpose | objective |  |

**Engagements:**

* **Engagement:** is a combat activity where these two elements become distinct.
* Use of fighting forces is possible through planning and organizing of a series of engagements.
* The whole of military activity must therefore relate directly or indirectly to the engagement. The end for which a soldier is recruited is simply that **he should fight** at the right place and the right time.
* **Purpose of military engagements:** (varies like pol object, not only destruction of armed forces)
* All threads of military activity led to the engagement. Then if we control the engagement, we comprehend them all.
* Their results are produced by the orders of commander.
* In the engagement the goal is: the destruction of the armed forces. This is one of the means by which the political purpose of the engagement is achieved. (Remember: there are other ways to get the pol objects)
* There are other objectives for which the war is waged.
* Those other objectives can also become the purpose of particular military operations, and thus also the purpose of engagements.

**p.96**

* The separate units often be assigned tasks that are not related with the destruction of the enemy's forces. Ex: a battalion is ordered to drive the enemy from a hill, the true purpose is normally to occupy that point. Destruction of the enemy's force is only a means to an end, a secondary matter.
* If with only show up cause the enemy to abandon his position, the objective has been achieved; but as a rule, the hill is captured to inflict more damage to the enemy.
* This is the case on the theatre of operations, where two nations face each other.
* In this case (when total destruction is not aimed) the engagement becomes a **trial of strength**. It is of no value in itself; its significance lies in the outcome of the trial.
* 100s of examples where objectives may be attained by, this possible, consistent with overall purpose
  + showup force
  + evaluation of situation
  + entire campaign fighting is unimportant
* one mean: combat; multiple form and multiple aims took us different directions.
* But the fact is: only one means (~combat) constitutes a strand that runs through the entire web of military activity and really holds it together.

**p.97**

**Question:** there are multiple objections, okay, but what is the **relative importance of destruction of enemy force?**

* Depend on circumstances
* Combat is only effective force in war.
* Destroy the enemy forces;
  + is a mean to a further end.
  + underlies all military actions; all plans are ultimately based on it.
* all action is done in the belief that “ultimate test of arms” is tried with the expect of **favourable** outcome. The **“decision by arms”** is like cash payment is in commerce.
* Decision by-fighting (arms) is the basis of all plans and operations.
  + The enemy can prevent everything through a successful battle.
  + Destruction of opposing forces-reacts on all other possibilities
* destruction of the enemy forces is always the superior,
* Destruction of the enemy is more effective if we can assume that all other conditions are equal. Skillfull caution is better than blind aggressiveness. Greater effectiveness relates not to the means but to the end; we are simply comparing the effect of different outcomes.
* DoEF is not done with only physical force. **Moral element** must be included.
  + Two interact throughout.
  + Two are inseparable
  + Effect of destructive act: a major victory, exerts on all actions, it is exactly at such times that the moral factor is the most fluid element of all. Therefore, morale spreads most easily to affect everything else.
  + Means of DoEF advantage to other means is balanced by its cost and danger and requires more efforts. If failed danger so high. Policies manage these risks.
  + Other methods, therefore, are less costly.

**p.98**

* + Two kinds of means: DoEF and other means positive purposes. If one commander choice force other commander to conduct same mean. Meaning if other choose other means the one who choose major battle will have excellent chance of success.
* negative side of DtEF: the preservation of our own.
* **Two efforts interact:**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Efforts** | **Purpose** | **Leads to** | **Final aim** | **Calls?** |
| DtEF | **Positive** | **Positive results** | enemy's collapse | act of destruction into being |
| Preserving our own forces  (pure resistance) | **Negative** |  | to prolong the war until the enemy is exhausted | **waits** |

* How far waiting attitude?
  + The answer lies in the theory of attack and defense,
  + policy of waiting must never become passive endurance,
  + In the end this policy has to aim to seek the destruction of the opposing forces at the end.
  + fundamental error: imagine a negative aim implies a preference for a bloodless decision over the destruction of the enemy.
  + It has this risk: it is not the appropriate course: that depends on factors that are determined by the opponent.
  + Avoidance of bloodshed, then, should not be taken as an act of policy if our main concern is to preserve our forces.

**p.99**

* + Certain effect of negative policy: retard the decision: waiting for the decisive moment.
  + further waiting would bring excessive disadvantages, then the benefit of the negative policy has been exhausted.
  + DtEF now reemerges.

**Result:**

* Many different roads can lead to the attainment of the political object, fighting is the only possible means.
* Everything is governed by a supreme law, **“the decision by force of arms”**.
* If the opponent does seek battle, accept it.
* A commander who prefers another strategy must first be sure that his opponent either will not appeal to that force or that he will lose the verdict if he does.
* To sum up: of all the possible aims in war, the destruction of the enemy's armed forces always appears as the highest.
* other kinds of strategies can achieve in war. admit the general possibility of their existence, the possibility of deviating from the basic concept of war under the pressure of special circumstances.
* But even at this point violent resolution of the crisis, the wish to annihilate the enemy's forces, is the first-born son of war.
* If the political aims are small, the motives slight and tensions low, a prudent general may look for any way to avoid major crises and decisive actions, exploit any weaknesses in the opponent's military and political strategy, and finally reach a peaceful settlement.
* If his assumptions are sound and promise success we are not entitled to criticize him. But he must never forget that he is moving on devious paths where the **god of war** may catch him unawares.
* He must always keep an eye on his opponent. Do not encounter an enemy with sharp sword only with an ornamental rapier.
* nature of war and the function of its purposes and means;
  + war in practice deviates in varying degrees from its basic concept
  + but always remaining subject to that basic concept, as to a supreme law.

**BOOK ONE: ON THE NATURE OF WAR**

**CHAPTER THREE: ON MILITARY GENIUS**

**P.100**

* If intellect and temperament is outstanding and reveal themselves in exceptional achievements in complex activities, their possessor is called a "genius."
* "genius" refers to a very highly developed mental aptitude for a particular occupation.
* What are the gifts of mind and temperament that in **combination** bear on military activity? (Essence of military genius)
  + It is not a single gift like courage.
  + Genius consists in a harmonious combination of elements, in which one or the other ability may predominate, but none may conflict with the rest.
  + Genius ~ Rarely occur because it is special cast of mental and moral factors
  + Numbers& Quality:
    - The more military activity dominates the more likely genius exist in numbers.
    - Quality depends on the general intellectual development of society.
  + **Warrior spirit:** far more common in primitive societies than in civilized ones.
  + Truly great commander: far more common in civilized societies. since this requires a degree of intellectual powers beyond anything that a primitive people can develop. As the Romans and the French have shown us.

**P.101**

* **Intellectual power play in the higher forms of military genius**
  + War is the realm of danger; therefore, courage is the soldier's first requirement.
  + Courage is of two kinds: courage in the face of personal danger, and courage to accept responsibility. 1st one is discussed here
  + **Courage in face of personal danger** is also of two kinds. The highest kind of courage is a compound of both.

**Courage in face of personal danger**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | Due to | Nature of it | Acts | There is | Mind |
| **indifference to danger** | individual's character | permanent | More dependable, never fail | More reliable | Calmer |
| **positive motives** likeambition, patriotism, or enthusiasm | Feeling, emotion | temporary | Achieve more | boldness | Stimulated, blind sometimes |

**Nature of war and requirements of war: managed by** “powers of intellect”.

|  |  |  |
| --- | --- | --- |
| Nature | Effect | requirement |
| realm of physical exertion and suffering | Destroy the soldier | Courage in personal danger  (Indifferent to them, train the body and soul). |
| realm of uncertainty  (three quarters of the factors of war are wrapped in a **fog of uncertainty**). |  | A sensitive and discriminating judgment is called for; a skilled intelligence to scent out the truth. |
| the realm of chance | makes everything more uncertain and interferes with the whole course of events. |  |

**p.102**

* Uncertainty (informations and assumptions are open to doubt) + chance at work everywhere = unexpected things happened + decisions to be made at once and quick = commander mind must be permanently armed to deal with them.
* Two indispensable qualities to cope with:
  + **Intellect** (coup d'oeil): even in the darkest hour, retains the inner light which leads to truth
  + **Courage** (determination) to follow this faint light wherever it may lead.
* Since time and space are important elements of the engagement. So, this feature attracts attention as an aspect of war.
  + cavalry attack as a decisive factor: **idea of rapid and accurate decision** first based on an evaluation of time and space, and received a name which refers to visual estimates only ~ limited sense
  + But soon it was also used of any sound decision taken in the midst of action-such as recognizing the right point to attack.
  + **Coup d'oeil** therefore refers not alone to the physical but, more commonly, to the inward eye. The expression, more applicable to tactics, but it must also have its place in strategy, since here as well quick decisions are often needed.
  + concept merely refers to the quick recognition of a truth that the mind would ordinarily miss or would perceive only after long study and reflection.
* **Determination** in a single instance is an expression of courage.
  + we are referring to the courage to accept responsibility, courage in the face of a **moral** danger, not to physical courage. Also called **courage d'esprit**, because it is created by the intellect.
  + But it is an act of temperament. Intelligence alone is not courage.
  + Since in the rush of events a man is governed by feelings rather than by thought, the intellect needs to arouse the quality of courage, which then supports and sustains it in action.

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* + The role of determination is to limit the agonies of doubt and the perils of hesitation when the motives for action are inadequate. But when a man has adequate grounds for action-whether subjective or objective, valid or false-he cannot properly be called "determined."
  + Determination, which dispells doubt, is a quality that can be aroused only by the intellect.
  + create determination :
    - conjunction of superior insight with the appropriate emotions.
    - Courage and intellect should work together (not in separate compartments)
    - **It is engendered only by a mental act**; the mind tells man that boldness is required, and thus gives direction to his will. This particular cast of mind, which employs the fear of hesitating to suppress all other fears, is the force that makes strong men determined.
* coup d'oeil and determination is related to “presence of mind” which play a great role in war, the domain of the unexpected. Increased capacity of dealing with the unexpected.

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**Climate of war ~ four elements: Danger, Exertion, Uncertainty, Chance**

* much fortitude of mind and character are needed to make success.
* use of such terms as energy, firmness, staunchness, emotional balance, and strength of character.
* These **psychological forces** are products of the same force-strength of will. And it adjusts itself to circumstances: but though closely linked, they are not identical.
* Difficulties challenges the psychological strength of the soldier. Only a small part of these hardships comes directly from enemy's activity.
* The direct impact of enemy activity falls, initially, on the soldier's person without affecting the commander.
* Enemy's resistance directly affects the commander by two ways:
  + **One way:** If the enemy’s resistance prolonged, the commander’s danger augments; but the higher an officer's rank, the less significant this factor becomes, and to the commander-in-chief it means nothing at all.
  + **A second way:** the loss that is caused by prolonged resistance and the influence this exerts on his sense of responsibility.
* **strength of will** of commander and then others:
  + **is rarely needed**: when things are going well, and the spirit is high.
  + **is tremendously needed:**
    - when conditions become difficult, the machine itself begins to resist, disobedience may occur, and arguments are on rise.
    - **impact of the ebbing of moral and physical strength**: spectacles of the dead and wounded
  + As each man's strength gives out, as it no longer responds to his will, the inertia of the whole gradually comes to rest on the commander's will alone. The ardour of his spirit must rekindle the flame of purpose in all others; his inward fire must revive their hope. Otherwise, the mass will drag him down to the brutish world where danger is shirked, and shame is unknown.

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* **Energy** in action or strength varies in proportion to the strength of its motive (convictions or emotions).
  + Most powerful passions that inspire man in battle: desire for **honour** and **renown(fame)**.
  + Other emotions may be more common and more venerated-patriotism, idealism, vengeance, enthusiasm of every kind-but they are no substitute with the first two.
  + they cannot give the **commander** the ambition to strive higher than the rest, as he must if he is to distinguish himself.
  + They cannot give him, as can ambition, a personal, almost proprietary interest in every aspect of fighting, so that he turns each opportunity to best advantage -plowing with vigour, sowing with care, in the hope of reaping with abundance.
  + It is primarily this spirit of endeavour on the part of commanders at all levels, this inventiveness, energy, and competitive enthusiasm, which vitalizes an army and makes it victorious.
* **Staunchness & endurance:**
  + **Staunchness** indicates the will's resistance to a single blow; endurance refers to prolonged resistance.
  + Difference is significant: Staunchness in face of a single blow may result from strong emotion, whereas intelligence helps sustain endurance. The longer an action lasts, the more deliberate endurance becomes, and this is one of its sources of strength.

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* **strength of mind** or **character:**
  + Ability to keep one's head at times of exceptional stress and violent emotion.
  + Strength of intellect alone is not enough for such a faculty.
  + Some men of outstanding intellect do lose their **self-control.**
  + faculty known as self-control-the gift of keeping calm even under the greatest stress-is rooted in temperament.
  + It is an emotion which serves to balance the passionate feelings in strong characters without destroying them, and it is this balance alone that assures the dominance of the intellect.
  + the urge to **always act rationally**. Therefore, we would argue that a strong character is one **that will not be unbalanced by the most powerful emotions.**
* **Men differ in their emotional reactions:** 
  + **1st group** with small capacity for being roused, known as "stolid" or "phlegmatic."
    - hard to throw off balance,
    - but total lack of vigour cannot really be interpreted as strength of character.
    - imperturbability of such men gives them a certain narrow usefulness in war.
    - They are seldom strongly motivated, lack initiative and consequently are not particularly active; on the other hand, they seldom make a serious mistake.
  + **2nd group**: Extremely active, but whose feelings never rise above a certain level, sensitive but calm.
    - Small things can suddenly stir them to act, whereas great issues are likely to overwhelm them.
    - will gladly help an individual in need, but the misfortune of an entire people will only sadden him; they will not stimulate him to action.
    - In war such men show no lack of energy or balance, but they are unlikely to achieve anything significant unless they possess a very powerful intellect to provide the needed stimulus. But it is rare to find this type of temperament combined with a strong and independent mind.
  + **3rd group**: passions are easily inflamed suddenly but soon burns out, like gunpowder.
    - general of little value in practical life, and therefore of little value in war.
    - Their impulses are strong but brief.
    - If the energy of such men is joined to courage and ambition, they will often prove most useful at a modest level of command, simply because the action controlled by junior officers is of short duration.
    - Often a single brave decision, a burst of emotional force, will be enough. A daring assault is the work of a few minutes, while a hard-fought battle may last a day, and a campaign an entire year.
    - Their volatile emotions make it doubly hard for such men to preserve their balance; they often lose their heads, and nothing is worse on active service.
    - Highly excitable minds could sometimes be strong. they usually have sense of own dignity, but there is not time for it to take effect. Once the crisis is past, they tend to be ashamed of their behaviour.
  + **4th group**: do not react to minor matters, who will be moved only very gradually, not suddenly, but whose emotions attain great strength and durability. These are the men whose passions are strong, deep, and concealed.
    - Lastly, we come to men who are difficult to move but have strong feelings-men who are to the previous type like heat to a shower of sparks. These are the men who are best able to summon the titanic strength it takes to clear away the enormous burdens that obstruct activity in war. Their emotions move as great masses do-slowly but irresistibly.
    - These men are not swept away by their emotions so often as is the third group, but experience shows that they too can lose their balance and be overcome by blind passion. This can happen whenever they lack the noble pride
    - of self-control, or whenever it is inadequate.
* **These** psychological **variants.**
  + are related to the physical forces of dual organism (physical and psychological).
  + affect military activity.
* Strength of character requires powerful feelings + maintain balance in spite of them (like ship compass).
* A man of character: if sticks to his convictions ~ firmness. Not constantly changing

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* War: rob men confidence in themselves and in others, doubt is plenty: divert them from original **course of action.**
* Presence of suffering danger = psychological fog --> emotion can easily overwhelm intellectual conviction. Action based on firmer than instinct, a sensing of the truth.
* Often there is a gap between principles and actual events that cannot always be bridged by a succession of logical deductions. Then a measure of self-confidence is needed, and a degree of scepticism is also salutary.
* Stick to imperative principle, refuse to change unless forced to do so by a clear conviction.
* Stick to overriding truth of tested principles. Do not yield to transient vivid impressions.
* Men of character again: strength of character depends on balanced temperament; most men of emotional strength and stability are therefore men of powerful character as well.
* Strength of character but not obstinacy.
  + Obstinacy is not an intellectual defect; it comes from reluctance to admit that one is wrong.
  + Obstinacy is a fault of temperament. Stubbornness and intolerance of contradiction result from a special kind of egotism. It might also be called vanity.
  + We would therefore argue that strength of character turns to obstinacy as soon as a man resists another point of view not from superior insight or attachment to some higher principle, but because he objects instinctively
* great commander needs in war has been concerned with qualities in which mind and temperament work together.

**p.109**

* **Warfare and terrain:** act of intellect:
  + Relationship between warfare and terrain determines the peculiar character of military action. In general, we lack info like the enemy, defender advantageous.
  + This problem is unique. To master it a special gift is needed, which is given the too restricted name of a **sense of locality**. It is the faculty of quickly and accurately grasping the topography. This is an act of the imagination.
  + it can only be achieved by the mental gift that we call imagination.
  + We also admit that a good memory can be a great help

**P.111**

* + Appropriate talent is needed at all levels if distinguished service is to be performed. But history and posterity reserve the name of "genius" for those who have excelled in the highest positions-as commanders-in-chief-since here the demands for intellectual and moral powers are vastly greater.

**BOOK ONE: ON THE NATURE OF WAR**

**CHAPTER FOUR: ON DANGER IN WAR**

**P.113**

* Danger is alarming in nature.
* When charging the enemy, ignoring the bullets and casualties, in a surge of excitement, death may happen in any time.
* For the victory. It must not be that difficult.
* Such moments are rare. They are not brief like a heartbeat, but come rather like a medicine, in recurring doses, the taste diluted by time.
* Accompanying novice:
  + With the rumbles of guns, cannonballs,
  + Distraction by wounded and dead,
  + Forward to the frontline, increasing danger, musket balls begin to whistle around.
  + A little further, infantry endures the hammering for hours with incredible steadfastness. The air is filled with hissing bullets that sound like a sharp crack if they pass close to one's head.
  + For a final shock, the sight of men being killed and mutilated moves our pounding hearts to awe and pity.
* The novice cannot pass through these layers of increasing intensity of danger without sensing that here ideas are governed by other factors. Light of reasoning is quite different from normal life or academic speculation.
* It is an exceptional man who keeps his powers of quick decision intact if he has never been through this experience before. It is true that (with habit) as we become accustomed to it the impression soon wears off, and in half-an-hour we hardly notice our surroundings anymore.
* **Ordinary qualities are not enough**; and the greater the area of responsibility, the truer this assertion becomes.

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* Danger is debilitating element. What is needed? All these characteristics (like headlong, dogged, or innate courage, overmastering ambition, or long familiarity with danger) must be present to a considerable degree.
* Danger is part of the friction of war. Without an accurate conception of danger, we cannot understand war.

**BOOK ONE: ON THE NATURE OF WAR**

**CHAPTER FIVE: ON PHYSICAL EFFORT IN WAR**

**P.115**

* Objective and accurate views on military operation are rare. Views are mostly subjective. This indicates how much influence physical effort exerts and shows how much allowance must be made for it in all our assessments.
* Among the many factors in war that **cannot be measured**, **physical effort** is the most important. Unless it is wasted, physical effort is a coefficient of all forces, and its exact limit cannot be determined.
* But it is significant that, just as it takes a powerful archer to bend the bow beyond the average, so it takes a **powerful mind** to drive his army to the limit.
* General demand these physical efforts from his troops.
* Like danger **physical effort** is one of the great **sources of friction** in war. Because its limits are uncertain, it resembles one of those substances whose elasticity makes the degree of its friction exceedingly hard to gauge.
* A general and an army cannot remove the stain of defeat by explaining the dangers, hardships, and exertions that were endured; but to depict them adds immensely to the credit of a victory.
* We are prevented from making an apparently justified statement by our feelings, which themselves act as a higher judgment.

**BOOK ONE: ON THE NATURE OF WAR**

**CHAPTER SIX: INTELLIGENCE IN WAR**

**P.117**

* **Intelligence:** every sort of **information about the enemy and his country**.
  + constitute basis of plans and operations.
  + Actual basis of this information is unreliable and transient, so the war is a flimsy structure that can easily collapse and bury us in its ruins.
  + Feeble (not usable) maxim: believe reliable intelligence and approach to these with suspicion. This maxim is not coming true wisdom but from minds who run out of ideas.
* Many **intelligence reports** in war are contradictory; or false, and uncertain, and the effect of fear is to multiply lies and inaccuracies.
  + Officer should possess a standard of judgment. He should be guided by the laws of probability.
  + Difficult to apply these to plans when they are drafted in office, far from the **sphere of action**; the task harder in the **thick of fighting**, with reports streaming in.
  + One is lucky if their contradictions cancel each other out. It is much worse one report tallies with another, confirms it, magnifies it, lends it colour, till a quick decision is made on it which is soon recognized to be mistaken.
  + As a rule, most men would rather believe bad news than good, and rather tend to exaggerate the bad news. The dangers that are reported may soon, like waves, subside; but like waves they keep recurring, without apparent reason.
  + The **commander** must trust his judgment and stand like a rock on which the waves break in vain. It is not an easy thing to do. If he does not have a buoyant disposition, if experience of war has not trained him and matured his judgment, he had better make it a rule to suppress his personal convictions and give his hopes and not his fears the benefit of the doubt. Only thus can he preserve a proper balance.
* This difficulty of **accurate recognition** constitutes one of the most serious sources of **friction in war**, by making things appear entirely different from what one had expected.
  + The senses make a more vivid impression on the mind than systematic thought.
  + Commanders tend to launch operations with feeling obliged to repress some doubts from the start.

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* + Ordinary men tend to lose self-confidence when they reach the scene of action: things are not what they expected.
  + But even the man who planned the operation and now sees it being carried out may well lose confidence in his earlier judgment, whereas **self-reliance** is his best defence against the pressures of the moment.
  + War has a way of **masking the stage** with fearsome apparitions. Once this is cleared away, developments will confirm his earlier convictions -this is one of the great chasms between planning and execution.

**BOOK ONE: ON THE NATURE OF WAR**

**CHAPTER SEVEN: FRICTION IN WAR**

**P.119**

* Difficulties and need of brilliant and exceptional ability of commander understood only by experiencing the war.
  + Everything, like the required knowledge and the strategic options looks simply.
  + Once war starts, the difficulties become clear; but it is extremely hard to describe the unseen.
* Everything in war is very simple, but the simplest thing is difficult. **The difficulties accumulate** and **produce a kind of friction** that is conceivable by experiencing the war.
  + Countless unpredictable minor incidents combine to lower the **general** (commander) level of performance, so that one always falls far short of the intended goal.
  + **Iron will-power** can overcome this friction; it pulverizes every obstacle, but of course it wears down the machine as well.
  + The proud spirit's firm will dominate the **art of war** as an obelisk dominates the town square on which all roads converge.
* Friction is the only **concept** that corresponds to the factors that distinguish real war from war on paper.
  + The **military machine (**the army and everything related to it) is very simple and seems easy to manage.
  + But none of its components is of one piece: each part is composed of individuals, every one of whom retains his potential of friction.
  + **In theory**: a battalion commander’s (a man of tested capacity) duty is to carry out his orders; discipline keeps the battalion together, and so everything runs in a way with a minimum of friction.
  + **In fact**, it is different, and every fault and exaggeration of the theory is instantly exposed in war. A battalion is made up of individuals who may chance to delay things or make them go wrong. The dangers and the physical exertions can aggravate the problem.

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* **This tremendous friction** cannot be reduced to a few points. And these are in contact with chance and brings about effects that cannot be measured. One is the **weather**. **Fog** can prevent the enemy from being seen in time, **rain** can prevent a battalion from arriving, etc.
* It would take volumes to cover all difficulties.
* **Action in war** is like movement in a resistant element. Just as walking cannot easily be performed in water, in war it is difficult for normal efforts to achieve even moderate results. A genuine theorist is like a swimming teacher, who makes his pupils practice motions on land that are meant to be performed in water.
  + To those who are not thinking of swimming the motions will appear exaggerated.
  + Theorists who have never swum, are impractical and even ridiculous: they teach only what is already common knowledge: how to walk.
* **Every war is rich in unique** episodes. Each is an uncharted sea, full of reefs. The commander may suspect the reefs' existence without ever having seen them. If a contrary wind springs up, he will need the greatest skill and personal exertion, and the utmost presence of mind.
* **An understanding of friction** is a large part of that **much-admired sense of warfare** which a good general is supposed to possess.
  + Best general is the one who takes idea of friction to heart.
  + Good general must know friction to overcome it whenever possible, and not to expect a standard of achievement in operations which friction makes impossible.
  + **It is a force that theory can never define**. Development of instinct and tact would still be needed in any case, a form of judgment much more necessary in an area littered by endless minor obstacles.
  + **Instinct** becomes almost habit so that he always acts appropriately, so only the experienced officer will make the right decision in major and minor matters-at every pulsebeat of war. Practice and experience dictate the answer: "this is possible, that is not."

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* Friction is the force that makes the apparently easy so difficult. E
* Eminent commander needs more than experience and a strong will. He must have other exceptional abilities as well.

**BOOK ONE: ON THE NATURE OF WAR**

**CHAPTER EIGHT: CONCLUDING OBSERVATIONS ON BOOK ONE**

**p.122**

* Danger, physical exertion, intelligence, and friction are the elements that coalesce to form the **atmosphere of war** and turn it into a medium that impedes activity.
* In their restrictive effects they can be grouped into a single concept of **general frictio**n.
* **Lubricant to reduce abrasion: combat experience** (not readily available). Habit 'hardens the body for great exertions, strengthens the heart in great peril, and fortifies judgment against first impressions. Habit breeds that priceless quality, calm, which, passing from hussar and rifleman up to the general himself, will lighten the commander's task.
* In war the **experienced soldier** reacts in the same way as the human eye does in the dark: the pupil expands to admit what little light there is, discerning objects by degrees, and finally seeing them distinctly.
* **Way of gaining familiarity** with war in peacetime:
  + **1. Peacetime manoeuvres**: No general can accustom an army to war. Manoeuvres are a feeble substitute for the real thing; but even they can give an army an advantage.
    - To plan manoeuvres so that some of the elements of friction are involved, which will train officers' judgment, common sense, and resolution.
    - No soldier should wait for war to expose him these frictions. He must be familiar with it.
    - This is true even of physical effort. Exertions must be practiced, and the mind must be made even more familiar with them than the body.
    - When exceptional efforts are required from soldiers, they tend to think that they result from mistakes at the top. In consequence, **morale** is doubly depressed.
    - If manoeuvres prepare him for exertions, this will not occur.
  + **2. Attract foreign officers** who have seen active service. A state that has been at peace for many years should try to attract some experienced officers. Alternatively, some of its own officers should be sent to observe operations and learn what war is like.

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* Experienced officers may be less, but their influence can be very real. Their experience, their insights, and the maturity of their character will affect their subordinates and brother officers.

**BOOK TWO: ON THE THEORY OF WAR**

**CHAPTER ONE: CLASSIFICATIONS OF THE ART OF WAR**

**p.127**

* **Concept of fighting**:
  + Essentially war is **fighting. F**ighting is the only effective principle in the manifold activities generally designated as war.
  + Fighting, in turn, is a trial of **moral and physical forces** through the medium of the latter. Naturally moral strength must not be excluded, for **psychological forces** **exert a decisive influence** on the elements involved in war.
  + The need to fight quickly led man to invent appropriate devices to gain advantages in **combat**, and these brought about great changes in the forms of fighting. The concept of fighting remains unchanged. **That is what we mean by war**.
* **Fighting vs. Combat:** Different things but interact
  + Weapons and equipment are not essential to the concept of fighting, since even wrestling is fighting of a kind. They are only the preparation for it, not its conduct.
  + Fighting has determined the nature of the weapons employed. These in turn influence the combat; thus, an **interaction** exists between the two.
  + But **fighting** itself **remains a distinct activity**; the more so as it operates in the danger.
  + This is the difference between two activities.
  + **Two activities** separate: an armed and equipped fighting force is a means, about which one need to know its chief effects to use it properly.
* Conclusion: **art of war** is the **art of using the given means in combat**; there is no better term for it than the **conduct of war**. Art of war includes all activities that exist for the sake of war, such as the creation of the fighting forces, their raising, armament, equipment, and training.
* It is essential to the validity of a theory to distinguish between these two activities:
  + If the **art of war** were always to start with raising armed forces and adapting them to the requirements of the **particular case**, it would be applicable only to those few instances where the forces available exactly matched the need.

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* + If, on the other hand, one wants a theory that is **valid for the great majority of cases**, it must be based on the most prevalent means and their most significant effects.
* The **conduct of war**, then, **consists in the planning and conduct of fighting**. If fighting consisted of a single act, no further subdivision would be needed. However, it consists of several complementary acts, are called "**engagements**" and which form new entities.
* **Tactics & Strategy Classification:** 
  + **Tactics:** Planning and executing these engagements themselves. **T**eaches the **use of armed forces in the engagement**
  + **Strategy**: Coordinating each of them with the others to further the object of the war. Teaches **the use of engagements for the object of the war**.
* Fighting

|  |  |  |
| --- | --- | --- |
| Consist | Name |  |
| Single act | Single engagement |  |
| Several complementary acts | Engagements |  |

* The concept of a **single engagement** and the conditions of its unity:
  + In terms of space (that is, of simultaneous engagements) its unity is bounded by the range of personal command.
  + In terms of time, however (that is, of a close succession of engagements) it lasts until the turning point, which is characteristic of all engagements, has been passed.
* **Doubtful cases**: number of engagements could be regarded as a single engagement.
  + But that will not spoil basis for classification since the point is common to all practical systems of classification where distinctions gradually merge on a descending scale.
  + There may be individual acts which, without a shift in point of view, may belong either to strategy or to tactics; for instance, very extended positions that are little more than a chain of posts, or arrangements for certain river-crossings.
* Our **classification** applies only the utilization of the fighting forces. But war is served by many activities (creation, training, and maintenance of forces) that are quite different from it.

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* **Activities preparatory to battle:** Closely related to the action. They are part of military operations
* **Narrower meaning** of the **art of war**-the actual conduct of war: Excluding these activities is justifiable. Prep activities be in constant interaction with the utilization of the troops but the two are very different.
* **Activities that exist in addition to the engagement:** 
  + If combat or the engagement is **defined** as the only **directly effective activity**, the threads of all other activities will be included because they all get their purpose from combat, and they all lead to combat.
  + Other activities differ widely:
    - **Part of the combat activities**: in one respect part of combat, while in another respect they serve to maintain. **Marches**, camps, and billets: each concerns a separate phase of existence of the troops, and when one thinks of troops, the idea of the engagement must always be present.
    - **Only maintenance activities**: Influences combat because of its interaction with the **outcome of the fighting**. Consists of supply, medical services, and maintenance of arms and equipment.
  + **Marches**
    - Identical with the utilization of troops.
    - Marching **in the course of an engagement (**deployment**): N**ot entails actual use of weapons, but it is integral part of engagement.
    - Marching **not taken in the course of an engagement**: **Means** of carrying out strategic plan (as strategy determines when, where and with what forces an engagement is to be fought).
    - Marching forces may at any time become involved in an engagement, the execution of the march is **subject to the laws of both tactics and strategy**.
      * **March as a strategic measure:** Column is ordered to take a route on the near side of a river. It implies that if an engagement must be fought in the course of the march, one prefers to offer it on the near rather than the far side.
      * **March as a tactical measure:** If on the other hand a column takes a route along a ridge instead of following the road through a valley or breaks up into several smaller columns for the sake of convenience, these are tactical measures: The **internal order of march** bears a constant relationship to **readiness for combat** and is therefore of a tactical nature: it is nothing more than the first preliminary disposition for a possible engagement.

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* + - The march is the **tool** by which **strategy deploys** its effective elements, the **engagements**.
      * But these often become **apparent only in their effect**, and not in their actual course.
      * Tool has often been confused with the effective element.
      * Decisive skilful marches mean combinations of engagements to which they lead.
      * **One such error occurs** when strategic combinations are believed to have a value irrespective of their tactical results.
      * Being successful without fighting an engagement with only marches and manoeuvres.
      * **False deduction:** It is possible to defeat the enemy without fighting.
    - **If marching is not integral part of combat**, it becomes neither tactical nor strategic.
      * These include all measures taken solely for the convenience of the troops, such as building roads and bridges, and so forth.
      * These are merely preconditions; under certain circumstances they may be closely linked with the use of troops and be virtually identical with them-for instance, when a bridge is built in full view of the enemy.
      * But essentially these activities are alien to the conduct of war, and the theory of the latter does not cover them.
  + **Camp:** Term for any concentration of troops in readiness for action.
    - Places for rest and recuperation, but they also imply strategic willingness to fight wherever they may be.
    - Camp sites determines the engagement's basic lines-a precondition of all defensive engagements. So, they are essential parts both of strategy and of tactics.
    - Camps are replaced by **billets** whenever troops are thought to need more extensive recuperation. Like camps, they are therefore strategic in location and extent, and tactical in their internal organization which is geared to readiness for action.
    - Another function of camps and billets: Serve to protect a certain area or maintain a position.
    - **Remember:** strategy may pursue a wide variety of objectives: anything that seems to offer an advantage can be the purpose of an engagement, and the maintenance of the instrument of war will often itself become the object of a particular strategic combination.

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* So, in a case where strategy merely aims at preserving the troops, the use of troops is still the main concern, since that is the point of their disposition anywhere in the theatre of war.
* Maintenance of troops in camps or billets: Activities that do not constitute a use of the fighting forces, such as the building of shelters, the pitching of tents, and supply and sanitary services. **These are neither tactical nor strategic in nature.**
* Even **entrenchments**, where site and preparation are obviously part of the order of battle and therefore tactical, are not part of the conduct of war so far as their actual construction is concerned.
* On the contrary, troops must be taught the necessary skills and knowledge as part of their training, and the theory of combat takes all that for granted.
  + **Supply:**
    - Of the items wholly unconnected with engagements, serving only to maintain the forces, supply is the one which most directly affects the fighting.
    - It takes place almost every day and affects every individual.
    - Thus, it thoroughly permeates the strategic aspects of all military action. The reason why we mention the strategic aspect is that in the course of a given engagement **supply will rarely tend to cause an alteration of plans.**
    - Interaction therefore will be most frequent between strategy and matters of supply, and nothing is more common than to find considerations of supply affecting the strategic lines of a campaign and a war.
    - Still, no matter how frequent and decisive these considerations may be, the business of supplying the troops remains an activity essentially separate from their use, its influence shows in its results alone.
  + **Other administrative functions**:
    - Further removed from the use of troops.
    - Medical services, though they are vital to an army's welfare, affect it only through a small portion of its men, and therefore exert only a weak and indirect influence on the utilization of the rest.
    - Maintenance of equipment, other than as a constant function of the fighting forces, takes place only periodically, and will therefore rarely be taken into account in strategic calculations.
  + In any individual case these things may indeed be of decisive importance. The distance of hospitals and supply depots may easily figure as the sole reason for very important strategic decisions-a fact we do not want to deny or minimize.
  + However, we are not concerned with the actual circumstances of any individual case, but with **pure theory**.
  + This type of influence occurs so rarely that we should not give the theory of medical services and replacement of munitions any serious weight in the theory of the conduct of war. Unlike the supplying of the troops, therefore, it would not seem worthwhile to incorporate the various ways and systems those theories might suggest, and their results, into the theory of the conduct of war.
  + To sum up: we clearly see that the activities characteristic of war may be split into **two main categories:** those that are merely **preparations for war**, and **war proper**. **The same distinction must be made in theory as well.**

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* + The knowledge and skills involved in the **preparations** will be concerned with the creation, training and maintenance of the fighting forces. It is immaterial what label we give them, but they obviously must include such matters as artillery, fortification, so-called elementary tactics, as well as all the organization and administration of the fighting forces and the like.
  + **The theory of war proper:** concerned with the use of these means for the purposes of the war. All that it requires from the first group is the final product, an understanding of their main characteristics. That is what we call **"the art of war"** in a **narrower sense**, or "**the theory of the conduct of war**," or "the theory of the use of the fighting forces."
  + That **narrower theory**, then, **deals with the engagement**, with fighting itself, and treats such matters as marches, camps, and billets as conditions that may be identical with it. It does not comprise questions of supply but will take these into account on the same basis as other given factors.
  + **The art of war in the narrower sense** must now in its turn be broken down into **tactics and strategy**. **The first is concerned with the form of the individual engagement, the second with its use**. Both affect the conduct of marches, camps, and billets only through the engagement; they become tactical or strategic questions insofar as they concern either the engagement's form or its significance.
  + **Theoretical distinctions show direct results on the battlefield.**
  + The primary purpose of any theory is to clarify concepts and ideas. Tactics and strategy are two activities that permeate one another in time and space but are nevertheless essentially different. Their inherent laws and mutual relationship cannot be understood without a total comprehension of both.

**BOOK TWO: ON THE THEORY OF WAR**

**CHAPTER TWO: ON THE THEORY OF WAR**

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* **Originally the term “Art of War” only designated the preparation of the forces** 
  + Formerly, the terms "art of war" or "science of war" were used to designate only the total body of knowledge and skill that was concerned with **material factors** which contributed to the establishment of an effective fighting force (like weapons, the construction of fortifications, organization of the army, and the mechanism of its movements).
  + It did not yet include the use of force under conditions of danger, subject to constant interaction with an adversary, nor the **efforts of spirit** and courage to achieve a desired end.
* **True war first appears in siege warfare**
  + Siege warfare gave the first glimpse of the conduct of operations, of **intellectual effort**; but this usually revealed itself only in such new techniques.
  + A **thread** needed to **link** these **material inventions**.
* **Next the subject was touched on by tactics**
  + Later, tactics attempted to convert the structure of its component parts into a general system.
  + This led to the battlefield, but not yet to creative intellectual activity.
  + Armies transformed their formations and orders of battle into automata, designed to discharge their activity like pieces of clockwork set off by a mere word of **command**.

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* **The actual conduct of war occurred only incidentally and incognito**
  + The actual conduct of war was not considered a suitable subject for theory, but one that had to be left to natural preference.
  + Gradually, war progressed from medieval hand-to-hand fighting toward a more orderly and complex form.
  + Then, the human mind gave some thought to this matter; but as a rule, its reflections appear only incidentally in histories.
* **Reflections on the events of war led to the need for a theory**
  + Reflections grew more numerous and history more sophisticated, a need arose for principles and the controversies.
  + This maelstrom of opinions, lacking in basic principles and clear laws was annoying.
* **Efforts to formulate a positive theory**
  + Efforts were made to equip the conduct of war with principles, rules, or even systems.
  + This was a positive goal, but people failed to take adequate account of the endless complexities involved.
  + The conduct of war branches out in almost all directions and has no definite limits; while any system, any model, has the finite nature of a synthesis.
  + An irreconcilable conflict exists between this type of theory and actual practice.
* **Limitation to Material Factors**
  + Theorists soon found out how difficult the subject was and felt justified in **evading the problem** by again directing principles **only to** physical matters and unilateral activity.
  + As in the science concerning preparation for war, they wanted **to reach a set of sure and positive conclusions**, and for that reason **considered only** factors that could be **mathematically calculated.**
* **Numerical Superiority**
  + Numerical superiority was a **material factor**.
  + It was chosen from all **elements** that **make up victory** because, by using combinations of **time and space**, it could be fitted into a mathematical system of laws.
  + It was thought that all other factors could be ignored **if they were assumed to be equal on both sides** and thus cancelled one another out.
  + That might have been acceptable as a **temporary device** for the study of the characteristics of this single factor; but to make the device permanent, to accept superiority of numbers as the one and only rule, and to reduce the whole **secret of the art of war** to the formula of numerical superiority at a certain time in a certain place was an **oversimplification** that would not have stood up for a moment against the realities of life.

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* **Supply**
  + Another theoretical treatment sought to reduce a different **material factor** to a system: supply. Based on the assumption that an army was organized in a certain manner, **its supply was set up as a final arbiter for the conduct of war**.
  + That approach also produced some concrete figures, but these rested on a mass of arbitrary assumptions. They were therefore not able to stand the test of practical experience.
* **Base**
  + One (referring Bülow, Paret, Genesis of On War, p.10) sought to condense a whole **array of factors**, some of which stood in relation to one another, into a single concept, that of the base.
  + This included feeding the army, replacing its losses in men and equipment, assuring its communications with home, and even the safety of its retreat in case that should become necessary.
  + He started by substituting this concept for all these **individual factors**; next substituting the area of this base for the concept itself and ended up by substituting for this area the angle which the fighting forces created with their base line.
  + All this led to a purely geometrical result which is completely useless.
  + Because none of these substitutions could be made without doing violence to the facts and without dropping part of the content of the original idea.
  + The concept of a base is a necessary tool in strategy and the author deserves credit for having discovered it; but it is completely inadmissible to use it in the manner described. It was bound to lead to one-sided conclusions which propelled that theorist into the rather contradictory direction of believing in the superior effectiveness of enveloping positions.
* **Interior Lines**
  + As a reaction to that fallacy, **another geometrical principle** was then exalted: that of so-called interior lines (Referring Jomini, P.Paret, Genesis of on war, p.10).
  + Even though this tenet rests on solid ground on the fact that the engagement is the only effective means in war-it’s purely geometrical character, still makes it another lopsided principle that could never govern a real situation

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* **All these attempts are objectionable**
  + These attempts at theory can be called advances in the search of truth, however they are useless in terms of rule offer.
  + They aim at fixed values; but in war everything is uncertain, and calculations must be made with **variable quantities**.
  + They direct the inquiry exclusively toward **physical quantities**, whereas all military action is intertwined with **psychological forces and effects**. They consider only unilateral action, whereas war consists of a continuous interaction of opposites.
* **They exclude genius from the rule**
  + Any factor that could not be explained by such one-sided points of view was held to be beyond scientific control: it lay in the **realm of genius**, which rises above all rules.
  + Genius does the best rule, and theory can show how and why this should be the case.
  + Theory does not need to conflict with reason.
* **Problems facing theory when moral factors are involved**
  + Theory becomes difficult as soon as it touches the realm of **moral values**.
  + Architects and painters know precisely what they are about if they deal with material phenomena. But when they come to the **aesthetics**, the rules dissolve into vague ideas.
  + Medicine is usually concerned only with **physical** phenomena, which, is subject to constant change. This renders the task of medicine difficult and makes the physician's judgment count for more than his knowledge. **Difficulty increased** when a **mental factor is added**, we value the psychiatrist greatly.

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* **Moral Values Cannot be ignored in war**
  + Military activity is never directed against **material force alone**; it is always aimed simultaneously at the **moral forces which give it life**, and the two cannot be separated.
  + But **moral values** can only be **perceived by the inner eye**, which differs in each person, and is often different in the same person at different times.
  + Danger is the common element in war, so, **courage**, the sense of one's own strength, is the **principal factor** that influences judgment. It is the **lens** through which impressions pass to the brain.
  + **Experience** will by itself provide a degree of objectivity to these impressions.
    - Everyone knows the **moral effects** of an ambush or an attack in flank or rear.
    - Everyone rates the enemy's bravery lower once **his back is turned** and takes much greater risks in pursuit than while being pursued.
    - Everyone gauges his opponent in the light of his reputed talents, age, and experience, and acts accordingly.
    - Everyone tries to assess the spirit and temper of his own troops and of the enemy's.
    - These effects in the **sphere of mind and spirit** have been **proved by experience**: they recur constantly and are therefore entitled to receive their due as **objective factors**. Theory must not ignore them.
    - These truths must be rooted in experience. No theorist or commander should bother himself with philosophical sophistries.
* **Principal Problems in Formulating a theory of the conduct of war**
  + To understand difficulties of formulating a theory of the conduct of war and so be able to deduce its character, look at the major **characteristics of military activity**.
* **First Property: Moral Forces and Effects** 
  + **HOSTILE FEELINGS**
    - The first of these attributes consists of **moral forces** and the effects they produce.
    - Combat is an expression of **hostile feelings**. But in the war (largescale combat) hostile feelings often have become **hostile intentions**.
    - There are usually no hostile feelings between individuals. Such emotions exist some degree in war.

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* + - Modern wars are seldom fought without hatred between nations; this serves as a substitute for hatred between individuals.
    - Even where there is no national hatred and no animosity to start with, the fighting itself will stir up hostile feelings: violence committed on superior orders will stir up the desire for revenge and retaliation against the perpetrator rather than against the powers that ordered the action.
    - That is only human, but it is a fact.
    - Theorists tend to look on fighting in the abstract as a trial of strength without emotion entering it, which is wrong.
    - Apart from **emotions** stimulated by the nature of combat, there are **other emotions** not linked but associated with fighting because of an affinity like ambition, love of power, enthusiasms of all kinds, and so forth.
  + **The effects of Danger**
    - COURAGE
      * Combat gives rise to the **element of danger** in which all military activity must move and be maintained.
      * The **effects of danger**, however, **produce an emotional reaction**, either as a matter of immediate instinct, or consciously. The former results in an effort to avoid the danger, or, where that is not possible, in fear and anxiety.
      * Where these effects do not arise, it is because **instinct has been outweighed by courage**.
      * But courage is by no means a conscious act; like fear, it is an emotion.
      * Fear is concerned with physical and courage with moral survival.
      * Courage is the nobler instinct, and as such cannot be treated as an inanimate instrument that functions simply as prescribed. So, courage is not simply a counterweight to danger, to be used for neutralizing its effects: it is a quality on its own.
  + **Extent of the influence exercised by danger**
    - **Influence** sphere **of danger in war**: Not limited its to the physical hazards of the moment.
    - Danger dominates the commander.
      * not merely by threatening him personally, but by threatening all those entrusted to him.
      * not only present, but also, through the imagination, at all other times when it is relevant.
      * not just directly but also indirectly through the sense of responsibility that lays a tenfold burden on the commander's mind.
    - He decides on a major battle with a certain feeling of strain and distress at the thought of the danger and responsibility.
    - One can make the point that action in war is never completely free from danger.

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* + **Other emotional factors:**
    - **Emotions** **aroused by hostility and danger** of war, doesn’t exclude others that accompany man throughout his life. There is a place for them in war as well.
    - Some emotions are silenced by the serious duties of war; but that holds only for **men in the lower ranks** who, rushed from one set of exertions and dangers to the next, lose sight of the other things in life, forego duplicity because death will not respect it, and thus arrive at the soldierly simplicity of character that has always represented the military at its best.
    - **In the higher ranks** placed broader point of view. Different interests and a wide variety of passions, good and bad, will arise on all sides. Envy and generosity, pride and humility, wrath and compassion-all may appear as effective forces in this great drama.
  + **Intellectual Qualities**
    - In addition to his emotional qualities, the intellectual qualities of the commander are of major importance. One will expect a visionary, high-flown and immature mind to function differently from a cool and powerful one.
  + **The diversity of intellectual Quality Results in a diversity of roads to the goal**
    - The influence of the intellectual qualities is felt chiefly in the higher ranks and increases as one goes up the ladder.
    - It is the primary cause for the diversity of roads to the goal and for the disproportionate part assigned to the **play of probability and chance** in determining the course of events.
* **Second Property: Positive Reaction**
  + **The second attribute** of **military action:** It must expect positive reactions and the process of interaction caused by these reactions.
  + Main concern is that “the nature of interaction will make reactions unpredictable”. No deal with calculating reactions which is part of calculating psychological forces.
  + **The effect** that any measure will have on the enemy is the most singular factor.
  + All theories must stick to categories of phenomena and can never take account of a truly unique case; this must be left to judgment and talent.
  + Plans of military activity based on general circumstances, are so frequently disrupted by unexpected events; should remain largely a matter of talent.

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* **Third Property: Uncertainty of all information**
  + Finally, unreliability of all information presents a special problem in war: all action takes place in a kind of twilight, which, like fog or moonlight, often tends to make things seem grotesque and larger than they really are.
  + This information in this environment must be guessed at by talent, or simply left to chance.
* **A positive doctrine is unattainable**
  + So, it is not possible to construct a model for the **art of war** that can serve as a scaffolding on which the commander can rely for support at any time.
  + Whenever he falls back on **his innate talent**, he will find himself outside the model and in conflict with it, **no matter how versatile the code.**
  + Situation will always lead to the consequences to talent and genius operate outside the rules, and theory conflicts with practice.

**Alternatives which make a theory possible:** There are **two ways out of this dilemma**.

* **The first way** out of this difficulty**:** THE DIFFICULTIES VARY IN MAGNITUDE
  + **In the first place**, our comments on the nature of military activity in general **should not be taken as applying equally** to action at all levels.
    - In the lower ranks:
      * Courage and self-sacrifice are most needed.
      * Less problems to be solved by intelligence and judgment.
      * The field of action is limited, means and ends are fewer.
      * Data more concrete: usually limited to what is visible.
    - Higher the rank, the more the problems multiply, reaching their highest point in the supreme commander. At this level, almost all solutions must be left to imaginative intellect.
  + Even if we **break down war** into its **various activities**, we will find that the **difficulties are not uniform** throughout. In brief, tactics will present far fewer difficulties to the theorist than will strategy.

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| --- | --- | --- | --- | --- | --- | --- |
| **activity** | **Nature of activity** | **Main effort** | influence | **Difficulties** | **To use theory** | **Dominate** |
| Conduct of combat | Tactic | physical  weapon |  | less | easier to organize, plan, and conduct an engagement | Material factors |
| Using effect of engagement, material successes turn into motives for further action | Strategy | intellectual | Commander's will | increase | determining the engagement's purpose. | intellect |

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* **The second way** out of this difficulty**: Theory should be study, not doctrine**
  + Theory need not be a positive doctrine, a sort of manual for action. Whenever an activity deals primarily with the same things, these are **susceptible of rational study.** 
    - It is precisely that inquiry which is the most essential part of any **theory.**
    - It is an analytical investigation leading to a close acquaintance with the subject; applied to military history.
    - The closer it comes to that goal, the more it proceeds from the objective form of a science to the subjective form of a skill or talent.
    - Theory fulfils its main task when it is used to analyse the constituent elements of war.
      * to distinguish precisely what at first sight seems fused,
      * to explain the properties of the means and to show their probable effects,
      * to define the nature of the ends, and to illuminate all phases of warfare in a thorough critical inquiry.
    - Theory then **becomes a guide,** it will light his way, train his judgment.
  + Theory exists so that one need not start; fresh each time sorting out the material and plowing through it but will find it ready to hand and in good order. It is meant to **educate the mind of the future commander,** not to accompany him to the battlefield.
  + If the theorist's studies result in principles and rules, theory will not resist this natural tendency of the mind. But this is simply in accordance with the **scientific law of reason**, to indicate the point at which all lines converge, but **never to construct an algebraic formula** for use on the battlefield.

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* **This point of view makes theory possible and eliminates its conflict with reality**
  + This kind of theory:
    - needs “intelligent treatment” to make it conform to action.
    - ends the **absurd difference** between prescriptive theories and practice.
    - **That difference** has often been used as a pretext by limited and ignorant minds to justify their congenital incompetence.
* **Theory thus studies the nature of ends and means:** It is the task of theory, then, to study the nature of ends and means.
* **ENDS AND MEANS IN TACTICS**
  + Means are the fighting forces trained for combat; the end is victory. Enemy's withdrawal from the battlefield is the sign of victory.
    - Strategy gains the end it had ascribed to the engagement, the end that constitutes its real **significance**.
    - This significance will exert an influence on the planning and conduct of combat and the kind of victory achieved.
      * A victory aimed at weakening the enemy's fighting forces is different from one that is only meant to seize a certain position.
  + **Factors that always accompany the application of the means:** There are certain constant factors in any engagement that will affect it to some extent.
    - **Terrain**
      * Terrain is the combination of the geographical surroundings and the nature of the ground. It could be of no influence at all on an engagement fought over a flat, uncultivated plain.

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* + - **Time of day**
      * The time of day **affects an engagement** by the difference between day and night.
      * These precise limits may be exceeded: every engagement takes a certain time, and major ones may last many hours.
      * When a major battle is being planned, it makes a decisive difference whether it is to start in the morning or in the afternoon.
      * On the other hand, there are many engagements where the time of day is a neutral factor (minor importance).
    - **Weather**
      * It is rarer still for weather to be a decisive factor. As a rule, only fog makes any difference.
* **ENDS AND MEANS IN STRATEGY**
  + Means of the strategy is victory (tactical success).
  + End of the strategy is the **objects** which will lead directly to peace.
  + **Factors that affect the application of the means**
    - Geography (country and people of the entire theatre of war)
    - Terrain
    - Time of day (including the time of year)
    - Weather (particularly unusual occurrences such as severe frost, etc.).
  + **These factors form new means**
    - Strategy, in connecting these factors with the outcome of the engagement, gives a special significance on engagement: it assigns a particular aim to engagement.
    - That aim is a mean to overall aim not the one that will lead directly to peace.
    - Combination of engagements (A winter campaign) by being directed toward a common aim can also be considered as a means.
    - In the way of ends, then, only those objects that lead directly to peace is remained now.
    - All these ends and means must be examined by the theorist in accordance with their effects and their relationships to one another.

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* + **Strategy derives the means and ends to be examined exclusively from experience**
    - **1st question**: How to produce complete list of objects?
      * Use experience (military history) -more realistic, not theory of war.
      * The result will be a **limited theory**, based only on facts recorded by military historians.
    - **2nd question: How far should an analysis of the means be carried?**
      * So far as the separate attributes will have significance in practice.
      * The range and effectiveness of different firearms is tactically most important; but their construction is irrelevant.
      * Strategy uses maps without worrying about trigonometric surveys; it does not inquire how a country should be organized and a people trained and ruled to produce the best military results.
  + **Substantial Simplification of Knowledge**
    - Range of subjects of theory is simplified and the knowledge required for the conduct of war is reduced.
    - Military activity is served by an enormous amount of expertise and skills, all of which are needed to place a well-equipped force in the field.
    - They merge into a few great results before they attain their **final purpose**.
    - **Commander** must familiarize himself only with those activities that empty themselves into the final purpose of war.

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* + **This simplification explains the rapid development of great commanders, and why commanders are not scholars**
    - This explains why men have so often emerged in the higher ranks, whose former field of endeavour was entirely different.
    - Future general with a knowledge of all the details is not needed.
    - That may be harmful: mind is formed by the knowledge, ideas, and the guidance.
  + **EARLIER CONTRADICTIONS**
    - The simplicity of the knowledge required in war has been formed together with all other fields contributions.
    - Only with presence of **genius** this contradiction solves.
  + **USEFULNESS OF ALL KNOWLEDGE WAS DENIED, AND EVERYTHING WAS ASCRIBED TO NATURAL APTITUDE**
    - It is understood:
      * There is a **vast distance** between a genius and a learned pedant.
      * **Free thinking** needed, may reject all belief in theory if situation necessitates
      * **Conduct of war** is a natural function of man with appropriate aptitude.
    - No activity of the human mind is possible without a certain stock of ideas; not innate and constitute a man's knowledge.
    - The only question is what type of ideas they should be. Only things with which he will be immediately concerned as a soldier.
  + **Knowledge will be determined by commanders’ area of responsibility**
    - Lower ranks: focused upon minor and more limited objectives.
    - Senior: Upon wider and more comprehensive ones.

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* + **Knowledge required in War is very simple, but not easy to apply**
    - The obstacles to action in general are in Book I (frictions etc.).
    - There are obstacles which may be overcome only by courage.
    - Genuine intellectual activity:
      * Simple and easy only in the lower ranks.
      * Difficulty increases with every step up the ladder.
      * Commander-in-chief: becomes the most extreme.
  + **The nature of such knowledge-** Commander in chief

|  |  |
| --- | --- |
| **Not** | **But** |
| not be a learned historian nor a pundit | must be familiar with:   * the higher affairs of state and its innate policies, * current issues, * questions under consideration, * leading personalities,   and be able to form sound judgments. |
| not an acute observer of mankind or a subtle analyst of human character | must know the character, the habits of thought and action, and the special virtues and defects of the men. |
| not know how to manage a wagon or harness a battery horse | must be able to gauge how long a column will take to march a given distance under various conditions. |

* + - The knowledge needed by a senior commander:
      * only be attained by a special talent,
      * through the medium of reflection, study and thought
      * an intellectual instinct which extracts the essence from the phenomena of life, as a bee
      * Experience, with its wealth of lessons, may bring calculations of a Conde' or a Frederick.
    - No great commander was ever a man of limited intellect.

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* + **Knowledge must become capability**
    - One more factor: Knowledge must be so absorbed into the mind that it almost ceases to exist in a separate way.
    - In almost any other profession a man can work with truths he has learned from musty books, but which have no life or meaning for him.
    - When an architect determines the strength of an abutment by a complicated calculation, the truth of the answer at which he arrives is not an expression of his own personality.
    - He selects the data, then he submits them to a mental process not of his own invention, but which he applies for the most part mechanically.
    - It is never like that in war. Continual change and the need to respond to it compels the commander to carry the whole intellectual apparatus of his knowledge within him. He must always be ready to bring forth the appropriate **decision**.
    - By total assimilation with his mind and life, the commander's knowledge must be transformed into a genuine capability.
    - That is why it all seems to come so easily to men who have distinguished themselves in war, and why it is all **ascribed** to **natural talent**. We say natural talent in order to distinguish it from the talent that has been trained and educated by reflection and study.
  + **Summary** 
    - These observations have clarified the problems that confront any theory of warfare and suggested an approach to its solution.
    - **Conduct of war** is **divided into the two fields** of tactics and strategy.
      * The theory of the strategy will unquestionably encounter the greater problems since the tactics is virtually limited to material factors, whereas for strategic theory, dealing as it does with ends which bear directly on the restoration of peace, the range of possibilities is unlimited.
      * As these ends will have to be considered primarily by the commander-in-chief, the problems mainly arise in those fields that lie within his competence.
    - In the field of strategy, therefore, even more than in tactics, **theory will be content with** the **simple consideration of material and psychological factors,** especially where it embraces the highest of achievements.
    - It will be sufficient if it helps the commander acquire those insights that, once absorbed into his way of thinking, will smooth and protect his progress, and will never force him to abandon his convictions for the sake of any objective fact.

**CHAPTER THREE: Art of War or Science of War**

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**Concepts of ABILITY AND KNOWLEDGE**

* A book cannot really teach us “the art” or how to do anything. But we define **the knowledge required for the practice of art** by the term **"theory of art"** or simply "**art**".
  + **Art: whose object is creative ability**, as, for instance, architecture.
  + **Science: whose object is pure knowledge**, example: mathematics or astronomy.
* Every theory of art may contain sciences. No science can exist without some element of art: in mathematics, for instance, the use of arithmetic and algebra is an art.
* Although there is difference, it is extremely difficult to separate them entirely.

**THE DIFFICULTY OF SEPARATING PERCEPTION FROM JUDGMENT**

* **Perception & Judgement & Art of War** 
  + All thought is art. The point where the premises resulting from perceptions end and where judgment starts, is **where art begins**.
  + But further: perception by the mind is already a judgment and therefore an art is perception by the senses.
  + It is impossible to separate art and knowledge. So, the term **"art of war"** is more suitable than **"science of war."**

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* **War is neither an art nor a science.** To take these concepts for war as a point of departure is misleading and incorrect analogies.
* This difficulty was already recognized in the past, and it was therefore suggested that **war was a craft.** That, however, proved more of a loss than a gain, because a craft is simply an inferior form of art and as such subject to stricter and more rigorous laws.

**WAR IS AN ACT OF HUMAN INTERCOURSE**

* War is no art and science but part of man's social existence.
* War is a **clash between major interests**, which is resolved by bloodshed-that is the only way in which it differs from other conflicts.
* It is better to compare war to **commerce** rather than art, which is also a conflict of human interests; and it is still closer to politics, which in turn may be considered as a kind of commerce on a larger scale.
* **Politics is the womb in which war develops**-characteristics of war is embryos in it.

**DIFFERENCE**

* War is not an exercise of the will directed at inanimate matter (like mechanical arts) or animate but passive matter like (fine arts).
* In war, the will is directed at an animate object that reacts. **Intellectual codification used in the arts and sciences is inappropriate for war.**
* Theory of war tended to imitate mechanical arts because, unlike fine arts, they had certain laws in place.
* Object is to examine whether a conflict of living forces in war remains **subject to general laws or not.**

**CHAPTER THREE: Concepts of METHOD AND ROUTINE, play important role in war**

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* To understand these, look to the logical hierarchy that governs any action.
* **Law** is the broadest concept applicable to both perception and action.
  + Literal sense: subjective element, expresses the thing on which man and his environment depend.
  + Viewed as a matter of cognition: relationship between things and their effects.
  + Viewed as a matter of the will: determinant of action; decree and prohibition.
* **Principle** is also a law for action, it represents only the spirit and the sense of the law.
  + If the diversity of the real world cannot be contained within the rigid form of law, the application of principle allows for a greater latitude of judgment.
  + Objective if it rests on objective truth and is therefore equally valid for all.
  + Subjective (maxim) if subjective considerations enter it.
* **Rule:**
  + **Sense of law**; it then becomes synonymous with principle. The proverb "there is an exception to every rule" and not "to every law," which shows one reserves the right to a more liberal interpretation.
  + **Sense of means**: to recognize a truth through a single relevant **feature** enables to derive a general **law of action**. Rules in games are like this, and so are the short cuts used in mathematics, and so on.
* **Regulations and directions** are directives dealing with a mass of minor, more detailed circumstances, too numerous and too trivial for general laws.
* **Method (**mode of procedure) is a **constantly recurring procedure** that has been selected from several possibilities.
* It becomes **routine** when action is prescribed by method rather than by general principles or individual regulation.
  + Cases to which such a routine is applied will be essentially alike.
  + Methodical procedure should be designed to meet the most probable cases.
  + **Routine** is not based on definite individual premises, but rather on the average probability of **analogous cases** to postulate an average truth. When applied constantly, will acquire nature of a mechanical skill, which does the right thing automatically.

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* In the conduct of war, **perception cannot be governed by laws**: the complex phenomena of war are not so uniform to make laws. No prescriptive formulation universal enough to deserve the name of law in the theory of law.
* Principles, rules, regulations, and methods are concepts for the **theory of war** that leads to positive doctrines in which truth can express itself in compressed forms.
* **Those concepts** appear most frequently in tactics (part of war in which theory can develop into a positive doctrine).
  + Examples of tactical principles (can be applied dogmatically to every situation):
    - except in emergencies cavalry is not to be used against unbroken infantry.
    - firearms should not be used until the enemy is within effective range.
    - As many troops as possible should be preserved for the final phase.
* **Rule:** inferring the truth, deduction from the enemy's intentions from a single visible fact
  + Cooking in the enemy camp at unusual times suggests that he is about to move.
  + The intentional exposure of troops in combat indicates a feint.
  + If the rule necessitates to resume attack as soon as enemy starts to withdraw his artillery, then a whole course of action is determined by this single phenomenon. This revealed that he is ready to give up the fight and cannot offer resistance.
* To the extent that **regulations** (drill and field-service instructions) **and methods** (field manuals) have been drilled into troops as **active principles**, theoretical preparation for war is part of its actual conduct.
* The actual conduct of war is based on these things; they are accepted as given procedures and as such must have their place in the theory of the conduct of war.

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* In the employment of forces, some activities remain a **matter of choice.**
  + **Regulations** do not apply to them, because they preclude freedom of choice.
  + **Routines** on the other hand, represent a general way of executing tasks on average probability.
    - Represent the dominance of principles and rules, carried through to actual application.
    - Have a place in the theory of the conduct of war if they are not regarded as binding frameworks for action.
    - Rather they are the best of the general forms that may be substituted for individual decisions.
* The frequent **application of routine in war** is essential because actions is based on pure assumption or ignorance, either because lack of information or time.
  + Even if everything is known, their complexities will not permit to take the steps to deal with them.
  + Therefore, our measures must always be determined by a limited number of **possibilities.**
  + We must remember the **countless minor factors implicit** in every case. The only possible way of dealing with them is to treat each case as implying all the others and **base our dispositions** on the general and the probable.
  + Finally, we must remember that as the number of officers increases steadily in the lower ranks, the less the trust that can be placed on their **true insight and mature judgment.**
* Officers who have less understanding than regulations and less experienced to be helped along by routine methods. These will steady their judgment, and guard them against eccentric and mistaken schemes, which are the greatest menace in a field where experience is so dearly bought.
* Routine, apart from its sheer inevitability, also contains one positive advantage. Constant practice leads to **brisk, precise, and reliable leadership**, reducing natural friction and easing the working of the machine.
* **In short, routine will be more frequent and indispensable**, the lower the level of action. As the level rises, its use will decrease to the point where, at the summit, it disappears completely. **Consequently, it is more appropriate to tactics than to strategy.**
* War, in its highest forms, is **not an infinite mass of minor events** which can be controlled with effectiveness depending on the methods applied. War consists rather of single, great decisive actions, each of which needs to be handled individually (not field of wheat, stalk, scythe but like mature trees, axe used judiciously according to the characteristics of each individual trunk).
* **The highest level that routine may reach** determined not by rank but by the nature of each situation. The highest ranks are least affected by it. A standard order of battle or system of advance guards and outposts are methods by which a general may be binding not only his subordinates, but also himself.
  + Of course, these methods may be his own inventions, and adapted to conditions; they can also be a subject of theory.
  + Any method by which strategic plans are turned out ready-made must be totally rejected.

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* If no acceptable theory of war exists, routine methods will tend to take over even at the highest levels. Some of the men in command not improved by education.
  + They cannot cope with the arguments of theorists and critics their only insights are experience.
  + They prefer to use the means with which their experience has equipped them.
  + They will copy their supreme commander's favourite device-thus automatically creating a new routine.
  + Repetitions of a ready-made method: Even the highest ranks are not above the influence of routine.
    - Generals of Frederick the Great using the so-called oblique order of battle.
    - Generals of the French Revolution using turning movements with a much-extended front.
    - Commanders under Bonaparte attacking with a brutal rush of concentric masses.
  + Once an improved theory helps the study of the conduct of war and educates the mind and judgment of the senior commanders, routine methods will no longer reach so high.
  + Indispensable routines will be based on a theory rather than sheer imitation. No matter how superbly a great commander is, there is always a subjective element.
* Eliminating subjective routines not possible and not correct from the conduct of war.
  + These are **manifestations of the influence** exerted on distinct case.
  + It is natural that War of the French Revolution had its characteristic style. What theory could have been expected to accommodate it?
  + The danger is that this style, developed out of a single case, used in other cases where the conditions different. That danger is the very thing a theory should prevent.
  + When in 1806 the Prussian generals made mistake by using Frederick the Great's oblique order of battle. This style outlived its usefulness. This was poverty of the imagination to which routine has ever led. The result: Prussian army under Hohenlohe was ruined.

**CHAPTER THREE: Critical Analysis**

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* Critical analysis
  + The influence of theoretical truths on practical life is always exerted more through critical analysis than through doctrine.
  + **Critical analysis is the application of theoretical truths to actual events.** 
    - Reduces the gap between the truths and events.
    - Accustoms the mind to these truths through their repeated application.
    - vital to reach the point of incontrovertible truth
* **Criterion for critical analysis**.
* There is difference between the critical approach and the plain narrative of a historical event.
* Three different intellectual activities may be contained in the critical approach.
  + The discovery and interpretation of equivocal facts. This is historical research proper and has nothing in common with theory.
  + The tracing of effects back to their causes. This is critical analysis proper. It is essential for theory, described by experience.
  + The investigation and evaluation of means employed. This last is criticism proper, involving praise and censure. Here theory serves history, or rather the lessons to be drawn from history.
* In the last two activities, it is vital to analyse everything down to-its basic elements. One must not stop half-way, as is so often done, at some arbitrary assumption that others may not accept.
* **Obstacles to critical research** (deduction of effect from cause)
* 1st Obstacle: true causes may be quite unknown.
  + In war the facts and the underlying motives are seldom fully known (intentionally concealed or not recorded).
  + That is why critical narrative must go hand in hand with historical research.
  + Even so, the disparity between cause and effect may be such that the critic is not justified in considering the effects as inevitable results of known causes.
  + This is bound to produce **gaps**-historical results that yield no useful lesson.
  + Theory demands that investigation should be resolutely carried on till such a gap is reached. At that point, judgment must be suspended.
  + Serious trouble arises when known facts are forcibly stretched to explain effects; for this confers on these facts a spurious importance.

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* 2nd obstacle to **critical research**: intrinsic one: effects in war result from multiple causes.
  + It is not enough to trace a sequence of events back to their origin:
  + Each **identifiable cause** still must be correctly assessed.
  + This leads to a closer analysis of the nature of these causes, and in this way critical investigation gets us into theory proper.
* Questions of critical **inquiry** (the examination of the means):
  + What are the **peculiar effects** of the means are employed?
  + Whether these effects conform to the intention with which they were used?
* The particular effects of the means lead to an investigation of their nature-in other words, into the realm of theory again.
* We have seen that:
  + In criticism it is vital to reach the **point of incontrovertible truth**; never stop (offer) an arbitrary assumption that others may not accept, unnecessary discussion commences and resulting in no lesson.
  + Both investigation of the causes and examination of the means leads to the realm of theory.
    - If a usable theory does indeed exist, the inquiry can refer to its conclusions and at that point end the investigation.
    - If a theoretical criterion does not exist, analysis must be pressed until the basic elements are reached. If this happens often, it will lead the writer into a labyrinth of detail: he will have his hands full and find it almost impossible to give each point the attention it demands. As a result, **in order to set a limit to his inquiries**, he will have to stop short of **arbitrary assumptions** after all. Even if they would not seem arbitrary to him, they would to others, because they are not self-evident and proved.
* In short, a **working theory** is an essential basis for criticism. Without such a theory it is generally impossible for criticism to reach that point at which it becomes truly instructive.
* But a theory cannot cover every abstract truth, so critic had to classify the case studied under the appropriate heading.
  + Equally, criticism need not to reverse the course whenever it came up against the limits of another theory.
  + The spirit of analytical investigation of critic should cross into the realm of theory in order to elucidate any points of special importance.
  + The function of criticism missed if criticism were to degenerate into a mechanical application of theory.
  + All the positive results of theoretical investigation (principles, rules, and methods) will lack universality the closer they come to being positive doctrine.

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* + They are there to be used when needed, and their suitability in any given case must always be a matter of judgment.
  + A critic should never use the results of theory as laws and standards, but as aids to judgment.
    - If theory lays down: Cavalry should be posted not in line with but behind the infantry: foolish to condemn every different deployment. Critic to analyse **reasons** for the exception. If these **reasons** are inadequate the critic may appeal to theoretical principles.
    - If theory lays down: **an attack with divided forces reduces the probability of success:** unreasonable
      * to attribute failure to the separation of forces when defeated.
      * to conclude that theory is incorrect when an attack with divided forces is successful.
      * The inquiring nature of criticism can permit neither.
    - In short, criticism largely depends on the results of the theorist's analytic studies. What theory has already established the critic need not go over again, and it is the theorist's function to provide the critic with these findings.
* **Investigating the relation of cause and effect** and the **appropriateness of means to ends** will be easy when cause and effect, means and ends, are closely linked.
  + When a surprise attack renders an army incapable of employing its powers, then the effect of the surprise cannot be questioned.
  + When theory said: **an enveloping attack** leads to **greater success**. Question: whether the general used envelopment for this purpose or not.
    - If so, he chose the right way to go about it.
    - But if he used it to make **certain of success**, basing action not on the nature of enveloping attacks, he misunderstood the nature of the means and committed an error.
    - **Critical analysis** is easy if one restricts oneself to the most immediate aims and effects. This may be done if one isolates the matter from its setting.
    - But in war all parts of a whole are interconnected, and the effects influence all subsequent military operations and modify final outcome to some degree. In the same way, every means must influence even the ultimate purpose.
    - Tracing the effects of a cause may be traced so long as it seems worthwhile. In the same way, a means may be evaluated with respect to its immediate and next ends maybe till the **ultimate objective**, which is to bring about peace.

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* + - Every stage in this progression implies a new basis for judgment. Some may be seen correct, when viewed from a higher one, appear objectionable.
  + In a critical analysis of the action, the search for the causes of phenomena and the testing of means in relation to ends always go hand in hand, for only the search for a cause will reveal the questions that need to be studied.
  + The pursuit of this chain presents problems.
    - **Cause and Effect:** 
      * The greater the distance between the event and the cause, the larger the number of other causes to be considered.
      * The greater the magnitude of any event, the wider the range of forces and circumstances that affect it.
      * When the causes for the loss of a battle have been ascertained, we know some of the causes of the effects, since the final outcome may have been affected by other causes.
    - **Means and ends:**
      * Same multiplicity exists as our viewpoint becomes comprehensive.
      * The higher the ends, the greater the number of means by which they may be reached.
      * The final aim of the war is pursued by all armies simultaneously, and we therefore have to consider the full extent of everything that has happened or might have happened.
  + This may lead to a complex field of inquiry in which we may get lost. Many assumptions have to be made about things that did not actually happen but seemed possible.
  + When in March 1797 Bonaparte advanced from the Tagliamento to meet the Archduke Charles, **their object** was to force a decision on the Austrians before the arrival of their reinforcements from the Rhine.
    - For the immediate objective, the means are well-chosen. The Archduke's forces were still so weak that he resisted a little bit on the Tagliamento. He abandoned the area.
    - **How could Bonaparte make use of this success?** 
      * Bonaparte**: Should press on into the heart of the Austrian Empire**, ease the advance of the two armies of the Rhine.
      * Critic’s wider view: French Directory see campaign on the Rhine **would not begin for another 6 weeks**. Bonaparte's advance through the Norican Alps is an unjustifiable risk.
      * If the Austrians moved reserves with which the Arcduke Charles attack the Army of Italy; Army may be destroyed, but the entire campaign would have been lost.
      * Bonaparte realized this by the time he reached Villach, and **this persuaded him to sign the Armistice of Leoben**.

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* + - * **Critic’s wider view:** Austrians had no reserves between the Archduke's army and Vienna. Advance of the Army of Italy was a threat to the capital. **If** Bonaparte knew that his advance into Vienna would be right.
      * The value of the attack would now depend on the value the Austrians think on the retention of Vienna.
        + AUS: Rather than lose the capital, accept everything.
        + NAP: Vienna to be considered as final aim.
        + If Bonaparte knew this, critic have no more to say.
        + But if it is uncertain, critic to take wider view and ask: what happens if the Austrians abandons Vienna, and withdrawn back.
        + **That question** can be answered with reference to the probable encounter between the two armies on the Rhine. There the French were superior in numbers-130K against 80K-that the issue is clear.
    - **How could Directory use the victory?** 
      * Would pursue advantage to the frontiers and shatter the Empire?
      * Would be satisfied with the conquest of a part as a surety for peace?
      * Define the results of both, after determine the choice of the Directory.
        + Assumption: Directory thought that the French forces were too weak to bring total collapse of Austria, so attempt to do so would have reversed the situation.
        + This is what persuaded Bonaparte, although he realized the Archduke's hopeless situation, to sign the peace of Campo Formio, on conditions that imposed on the Austrians only the loss of some provinces.
        + But the French could not have counted gains of Campo Formio, and therefore could not have made them the objectives, **had it not been for two considerations**.
        + **The first** was the value the Austrians placed on the two possible outcomes. Though both of them made eventual success appear probable, would the Austrians have thought it worth the sacrifices they entailed-the continuation of the war-when that price could have been avoided by concluding a peace on not too unfavourable terms?
        + **The second** consists in the question whether the Austrian government would even pursue its reflections and thoroughly evaluate the potential limits of French success, rather than be disheartened by the impression of current reverses?

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* + - * + 1st consideration is important as it always arises whenever one aims at total victory. It is this which usually prevents such plans from being carried out.
        + 2nd consideration is just as essential, for war is waged against a real enemy.
        + Certainly, a man as bold as Bonaparte was conscious of this, confident as he was in the terror inspired by his approach.
        + The same confidence led him to Moscow in 1812, but there it left him. In the course of the gigantic battles, the terror had already been somewhat blunted. But in 1797 it was still fresh, and the secret of the effectiveness of resisting to the last had not yet been discovered. Still, even in 1797 his boldness would have had a negative result if he had not, as we have seen, sensed the risk involved and chosen the moderate peace of Campo Formio as an alternative.
* This example is enough to show character of critical analysis (comprehensive, complex, and difficult).
* **Natural talent needed:** 
  + Enhances the value of critical analysis (illuminate the connections of events and to determine which are the essential ones).
  + Critical analysis is not just an evaluation of the means, but of all possible means.
  + Range of possible combinations in most cases may be small, listing unused means analysis of existing things and achieved depends on the creativity of the intellect.
* Suggesting the realm of true genius is to be found in cases where a handful of simple schemes is quite absurd, though it is often done (treating the turning of a position as an invention of great genius)
* On 30 July 1796, Bonaparte decided to raise the **siege of Mantua** to fell on the Wurmser's two columns (came to relieve Mantua) separated by Lake Garda and the Mincio.
  + He did it because this seemed the surest way to decisive victories. And he gained it.
  + There is only one opinion about this: **unbounded admiration.**

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* + Bonaparte choose this with renouncing hope of taking the city (would have fallen within a week if the siege maintained). Siege turned into a mere blockade and held out for six more months despite all Bonaparte's victories in the field.
* Critics, unable to recommend a better way of resistance, have considered this an unavoidable misfortune.
  + Resisting a relieving army behind lines of circumvallation disrepute.
  + In the days of Louis XIV, it successfully employed (whim of fashion), 100 years later nobody at **least to weigh** its merits.
  + **Possibility deserved notice**: 40,000 of the finest infantrymen well placed behind a line of circumvallation, would, have had so little cause to fear the 50,000 Austrians.
  + Not known whether Bonaparte himself ever considered the plan.
  + Critics has to think of staying at trench and to compare it with the means which Bonaparte in fact employed (follow the columns).
* Admired: when Bonaparte, in February 1814, turned from Blücher after beating him, to fall on Schwarzenberg, and beat him at Montereau and Mormant.
  + By rapidly moving his main force back and forth, Bonaparte brilliantly exploited the allies' mistake of **advancing with divided forces**.
  + If, people thought, these superb strokes in all directions failed to save him, at least it was not his fault.
  + No one has yet asked what would have happened if, he had gone on hammering Blücher and had pursued him back to the Rhine.
  + We are convinced that the complexion of the whole campaign would have been changed and that, instead of marching on Paris, the allied armies would have withdrawn across the Rhine.
  + The option is obvious than in the previous case. But overlooked because people are biased and blindly follow a single line of thought.

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* The need for suggesting a better method than the one that is condemned has created the type of criticism which is used almost exclusively: **the critic** need to **furnish proof** to convince to evade fruitless controversy.
* **The proof** is not plain enough to rule out all doubts; it consists in taking each of the means and assessing and comparing the particular merits of each in relation to the objective.
  + **By this way** matter reduced to simple truths, so the controversy either stop, or at least lead to new results.
  + By the other method, the pros and cons simply cancel out.
* Suppose last example: We are not satisfied and wanted to prove that the pursuit of Blücher serve Napoleon better than turning against Schwarzenberg.
* We would rely on the following simple truths:
  + Better to strike in the same direction than to shift one's forces, lose time. Easier to achieve further successes where the **enemy's morale** shaken by losses; in this way, **none of the superiority** that has been attained will go unexploited.
  + Even though Blücher was weaker than Schwarzenberg, his **enterprising spirit** made him more important. The **centre of gravity** lay with him, and he pulled the other forces in his direction.
  + The losses of Blücher: scale of a serious defeat. Bonaparte had **so great a superiority** as to he would have to retreat as far as the Rhine.
  + It would **cause so much alarm** or impress the allies' mind. For Schwarzenberg (known to be as timid and irresolute), this was an important consideration. Bonaparte's desperate thrust toward Vitry at the end of March was an attempt to test the effect that the threat of a strategic envelopment would have on the allies. It was obviously based on the **principle of terror**, but in wholly different circumstances now that Bonaparte had been defeated at Laon and Arcis, and Blücher had joined Schwarzenberg with 100.000 men.

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* Some people will not be convinced by these arguments. But they cannot reply that if Bonaparte thrust to Rhine (threatening Schwarzenberg's base), Schwarzenberg was threatening Paris, which was Bonaparte's. For the reasons above it would not have occurred to advance on Paris.
* For the instance of 1796: Bonaparte considered his plan as the best guaranteed to beat the Austrians.
  + Even if this had been true, the outcome would have been an empty triumph which could not affect the fall of Mantua.
  + Our proposal more likely to prevent Mantua from being relieved;
  + Even if we put ourselves in Bonaparte's place and take the opposite view-that it offered a smaller prospect of success-the choice would have been based on balancing;
    - a likelier but almost useless, and therefore minor victory,
    - a less likely but far greater one.
  + **Boldness** would have opted for the 2nd course: but the opposite occurred. Bonaparte held to the bolder intention, so he did not think the matter through to assess the consequences as fully as we can in the light of **experience.**
* **In the study of means**, the critic must naturally frequently refer to military history, for in the **art of war** experience counts more than abstract truths. Historical proof is subject to conditions of its own, but these conditions are so seldom met with those historical references. This only confuse matters more.
* How far is the critic free to assess a single case in the light of his greater knowledge?
* If the critic wishes to distribute praise or blame, he must certainly try to put himself exactly in the position of the commander; in other words, he must assemble everything the commander knew and all the motives that affected his decision and ignore all that he could not or did not know, especially the outcome.
* However, this is ideal. Situation giving rise to an event can never look the same to the analyst as it did to the participant. A mass of minor circumstances that may have influenced his decision are now lost to us, and many subjective motives may never have been exposed at all. These can only be discovered from the **memoirs of the commanders**.

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* But it is even more **difficult** for the critic to shut off his superfluous knowledge.
  + Example: outcome. We see these things in the light of their result. Military history in all its aspects is itself a source of instruction for the critic, and it is only natural that he should look at all particular events in the light of the whole.
  + The critic has more information than the participant. He cannot ignore it.
    - Because knowledge of previous circumstances does not rest on specific information alone but on numerous conjectures and assumptions.
    - Information in general, preceded by assumptions.
    - Later critics who know all the circumstances must not be influenced by their knowledge when they ask which among the unknown facts, they themselves would have considered probable at the time of the action.
* Partly possible putting in the situation of the participant in making critique. In many cases possible, but sometimes it is completely impossible.
* Critic to identify himself with the commander not necessary and desirable.
  + Trained natural aptitude is necessary in war. This virtuosity may be great or small.
    - If it is great, it may easily be superior to that of the critic, profit from the wider horizons.
    - To judge even the slightest act of talent, it is necessary for the critic to take a more comprehensive point of view, so that he, in possession of any number-of objective reasons, reduces subjectivity to the minimum.

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* This elevated position of criticism, dispensing praise or blame with a full knowledge of all the circumstances, will not insult our feelings.
  + The critic will do this only if he implies that all the wisdom that is in fact derived from his complete knowledge of the case is due to his own abilities.
  + Vanity may very easily lead to it, and it will naturally give offense.
  + More often the critic does not mean to be arrogant; but, unless he makes a point of denying it, a hasty reader will suspect him of it.
* If the critic points out that a Frederick or a Bonaparte made mistakes, it does not mean that he would not have made them too. He may even admit that in the situation of these generals he might have made far greater errors.
* This is a judgment based on the pattern of events and therefore also on their outcome. But, in addition, the **outcome may have a completely different effect on judgment**-when the outcome is simply used as proof that an action was either correct or incorrect. This may be called a **judgment by results**. At first sight such a judgment would seem entirely inadmissible, but that is not the case.
* 1812 advance on Moscow, crucial question: would Czar make peace if capital is captured?
  + If, however, peace was not made at Moscow, Bonaparte would have no choice but to turn back, which would have meant a strategic defeat.
  + Leave aside
    - number of missed opportunities that might have made the Czar decide on peace.
    - terrible circumstances of the retreat, which may have had their root in the conduct of the entire campaign.
  + Even he manages to retreat, it could have been a major strategic defeat.
  + If the Czar had concluded a disadvantageous peace, the campaign of 1812 would have ranked with those of Austerlitz, Friedland, and Wagram. But if these campaigns had not resulted in peace, they would probably have led to similar catastrophes.
  + Regardless of the power, skill, and wisdom shown by the conqueror of the world, the final fatal question remained everywhere the same.
    - Should we then ignore the actual results of the campaigns of 1805, 1807, and 1809, and, by the test of 1812 alone, proclaim them to be products of imprudence, and their success to be a breach of natural law?
    - Should we maintain that in 1812 strategic justice finally overcame blind chance? That would be a very forced conclusion, an arbitrary judgment where half the evidence is missing, because the human eye cannot trace the interconnection of events back to the decisions of the vanquished monarchs.

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* It cannot be said that failure of campaign of 1812 due to something extraneous.
* What can be more natural than to say that in 1805, 1807, and 1809 Bonaparte had gauged his enemy correctly, while in 1812 he did not? In the earlier instances he was right, in the latter he was wrong, and we can say that because the outcome proves it.
  + In war all action is aimed at **probable** rather than at certain **success**. The lack of **degree of certainty** must in every case be left to fate, chance, or whatever you like to call it.
  + One may of course ask that this dependence should be as slight as possible, should be as small as possible in that individual case. But we should not habitually prefer the course that involves the least uncertainty. That would be an enormous mistake. There are times when the utmost daring is the height of wisdom.
* So, commander's personal merits, and his responsibility, become irrelevant to all questions that have to be left to chance.
* Nevertheless, we cannot deny an inner satisfaction whenever things turn out right; when they do not, we feel a certain intellectual discomfort. That is all the meaning that should be attached to a judgment of right and wrong that we deduce from success, or rather that we find in success.
* But it is obvious that the intellectual pleasure at success and the intellectual discomfort at failure arise from an obscure sense of some delicate link, invisible to the mind's eye, between success and the commander's genius. It is a gratifying assumption.
* The truth of this is shown by the fact that our sympathy increases and grows keener as success and failure are repeated by the same man. That is why luck in war is of higher quality than luck in gambling. So long as a successful general has not done us any harm, we follow his career with pleasure.
* The critic, then, having analysed everything within the range of human calculation and belief, **will let the outcome speak** for that part whose deep, mysterious operation is never visible. The critic must protect this unspoken result of the workings of higher laws against the stream of uninformed opinion on the one hand, and against the gross abuses to which it may be subjected on the other.
* Success enables us to understand much that the workings of human intelligence alone would not be able to discover. That means that it will be useful mainly in revealing intellectual and psychological are so closely involved with the will that they may easily control it. Wherever decisions are based on fear or courage, they can no longer be judged objectively; consequently, intelligence and calculation can no longer be expected to determine the probable outcome.

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* Remarks about the instruments critics use-their idiom; for in a sense, it accompanies action in war. Critical analysis, after all, is nothing but thinking that should precede the action.
* Essential that the language of criticism should have the same character as thinking must have in wars; otherwise, it loses its practical value and criticism would lose contact with its subject.
* On the theory of the conduct of war, commander's, guide his education; theory is not meant to provide him with positive doctrines and systems to be used as intellectual tools.
* Moreover, if it is never necessary or even permissible to use **scientific guidelines** in order to judge a given problem in war, if the truth never appears in systematic form, if it is not acquired deductively but always directly through the natural perception of the mind, then **that is the way it must also be in critical analysis.**
* If it is too hard to determine the facts of the situation, we must have recourse to the relevant principles established by theory. But in the same way as in war these truths are better served **by a commander who has absorbed their meaning in his mind** rather than one who treats them as rigid external rules, so the critic should not apply them like an external law or an **algebraic formula** whose relevance need not be established each time it is used.
* Although impossible to completely achieved, it must remain the aim of critical analysis. The complex forms of cognition should be used as little as possible, and one should never use elaborate scientific guidelines as if they were a kind of truth machine. Everything should be done through the natural workings of the mind.
* That has rarely prevailed in critical studies; on the contrary, a kind of vanity has impelled most of them to an ostentatious exhibition of ideas.
* **The first common error** is an awkward use of certain narrow systems as formal bodies of laws. They are one-sided systems. We are dealing here with a limited problem, and since the number of possible systems is after all finite, this error is the lesser of two evils that concern us.

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* **A far more serious menace** is the retinue of jargon, technicalities, and metaphors that attends these systems. They swarm everywhere. Any critic who has not seen fit to adopt a system will still apply an occasional scrap of one as if it were a ruler, to show the crookedness of a commander's course. Few of them can proceed without the occasional support of such scraps of scientific military theory.
* **The most insignificant of them** are sometimes nothing more than ornamental flourishes of the critical narrative. But it is inevitable that all the terminology and technical expressions of a given system will lose what meaning they have, if any, once they are torn from their context and used as general axioms or nuggets of truth that are supposed to be more potent than a simple statement.
* Thus, it has come about that our theoretical and critical literature, instead of giving plain, straightforward arguments in which the author at least always knows what he is saying and the reader what he' is reading, is crammed with jargon, ending at obscure crossroads where the author loses his readers.
* Sometimes these books are even worse: they are just hollow shells. The author himself no longer knows just what he is thinking and soothes himself with obscure ideas which would not satisfy him if expressed in plain speech.
* **Critics have yet a third failing**: showing off their erudition, and the misuse of historical examples. We have already stated what the history of the **art of war** is, and our views on historical examples and military history in general will be developed in later chapters. A fact that is cited in passing may be used to support the most contradictory views; and three or four examples from distant times and places, dragged in and piled up from the widest range of circumstances, tend to distract and confuse one's judgment without proving anything. The light of day usually reveals them to be mere trash, with which the author intends to show off his learning.
* What is the practical value of these obscure, partially false, confused, and arbitrary notions? Very little-so little that they have made theory, from its beginnings, the vey opposite of practice, and not infrequently the laughingstock of men whose military competence is beyond dispute.
* This could never have happened if by means of simple terms and straightforward observation of the conduct of war theory had sought to determine all that was determinable; if, without spurious claims, with no unseemly display of scientific formulae and historical compendia, it had stuck to the point and never parted company with those who have to manage things in battle by the light of their native wit.

**Allegiance, Ability, and Achievement in the American Civil War: Commander Traits and Battlefield Military Effectiveness**

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**p.2**

**1 Introduction**

* Battlefield victory depends on many factors that may change over time.
  + In the ancient world, military combat was heroic in nature, with aristocrats doing battle and masses of infantry essentially serving auxiliary roles.
  + Greek democracy brought with it the democratization of warfare, in which companies of hoplites fought one another in phalanx formation.
  + Military engagements were further altered when Persia invaded the Greek city-states, and Militiades’ genius was instrumental in developing a strategem to defeat Darius’ forces (Andreatta,2015). Without his insights, the battle might well have been lost.
* The **critical role of command** has long been recognized by military strategists and historians.
  + A. A. Vandegrift, a USMC General in WWII: “positions are seldom lost because they have been destroyed, but because the leader has decided in his mind that the position cannot be held” (United States Marine Corps, 1997, 1).
  + Rulers seek for the right commander to win the conflict:
    - Plutarch (1992) describes Quintus Fabius Maximus as the only man capable of stopping Hannibal’s rampage through Italy, following the defeat of Gaius Flaminius at Lake Trasimene.
    - Liddell Hart (1996) traces the importance of six great commanders in the second millennium.
    - And Taaffe (2011) highlights the decisions made by U.S. Army Chief of Staff George C. Marshall in World War II in selecting officers who could defeat the Axis powers.
* For the American Civil War (hereafter, the “Civil War”), military leadership has been deemed especially important.
  + The Confederacy possessed superior leadership (e.g., Alexander, 2007), enabling its forces to achieve several early victories (McPherson, 1988, 327) (Defeat of Unions at the First Battle of Bull Run).
  + As the war progressed, the gap narrowed, and the Union was able to exploit its own advantages in terms of resources and manpower, turning the tide in its favour (Bond, 1998). This account suggests Lincoln might have appointed more competent commanders later in the war. (It also implies the possibility of learning over the course of the war.)

**p.3**

* However, while commanding officers were likely chosen for some combination of leadership capabilities and loyalty.
  + Standard theories of executive appointments admin politics suggest a trade-off between loyalty and competence (e.g., Edwards, 2001, Hollibaugh, Horton and Lewis, 2014, Hollibaugh, 2016a, Krause and O’Connell, 2015, Lewis, 2008).
  + The incentives are likely different between context of administrative politics, and that of military leadership in war.
  + Thus, the **Civil War** provides an excellent opportunity to examine not only the **relationship between traits of military leaders and battlefield performance**, but also the generalizability and applicability of extant theories of executive politics.
* Provide several contributions to the study of military success.
  + First, we employ large- scale data on the attributes of battlefield commanders in the Civil War.
  + Then use these data to compute measures of loyalty and competence for commanders on both sides.
  + Finally, we assess the respective roles that loyalty and competence play in determining battlefield outcomes.
  + Our results are broadly supportive of the traditional hypothesis, suggesting that leadership is indeed related to success, and that while the Confederacy began the war with a competence advantage among its commanders, the gap narrowed considerably as the war progressed.

**2 Military Leadership and Battlefield Outcomes**

* While the international relations literature has devoted attention to factors influencing outcomes of military conflict, its focus has been directed primarily at its highest level—wars and militarized disputes—ignoring combat within wars (Gartner, 1998, Reiter, 2009).

**p.4**

* At the interstate level, researchers have focused on factors such as regime type, alliances, material capabilities, and attributes of political leadership (e.g., Biddle and Long, 2004, Choi, 2004, Lake, 1992, Reiter and Stam, 1998, Wolford, 2007) to explain why one state might defeat or surrender to another.
* At the intrastate level, analyses have emphasized the importance of state capacity, regime type, industrialization, terrain, tactics, and outside intervention (e.g., Balch-Lindsay, Enterline and Joyce, 2008, Chatagnier and Castelli, 2016, Cunningham, Gleditsch and Salehyan, 2009, DeRouen and Sobek, 2004, Fortna, 2012, Mason, Weingarten and Fett, 1999).
* The purpose in each case is to determine the likelihood that one side achieves strategic victory over the other. Neither successes at the tactical or operational level, nor how those successes lead to strategic success, are explained.
* The decision to ignore **battlefield success** is surprising, as many scholars have acknowledged its importance in determining overall outcomes (Reed and Clark, 2000, Slantchev, 2003, Smith and Stam, 2004). Although exceptions exist (e.g., Biddle and Long, 2004, Grauer and Horowitz, 2012, Reiter and Stam, 1998), **little research** has been dedicated to understanding the components of **battle-level effectiveness**. This is noteworthy given claims that traditional quantitative indicators of success in military conflicts are poor predictors of battlefield success (Biddle, 2006, Freedman, 2005), suggesting the need for additional study.
* Moreover, **a crucial determinant of battlefield success**, military leadership, has been particularly understudied.
  + Research on leaders has focused primarily on political leaders, and their incentives to initiate or participate in wars (Bueno De Mesquita and Siverson, 1995, Chiozza and Goemans, 2011, Fuhrmann and Horowitz, 2015, Goemans and Fey, 2009, Horowitz and Stam, 2014).
  + The relationship between leadership and success has mostly been confined to the (often conflict- specific) literature on coup-proofing—that is, where leaders stack officer corps with individuals personally loyal to them, often leaving them ill-prepared to resist domestic uprisings and foreign invasions (Gaub, 2013, Hosmer, 2007, Pilster and Böhmelt, 2011, 2012).

**p.5**

* One notable focus on battlefield success is Reiter and Wagstaff:
  + Analyses how battlefield success in World War II affected decisions to promote or remove commanders.
  + They outline how tactical expertise, the ability to inspire soldiers, the choice of competent subordinates, and the provision of better strategic options allow leaders to affect battlefield outcomes.
  + Their analysis, however, focuses on the effects of tactical victories, rather than their causes. Here, we opt for the opposite tack and examine how commander qualities affect the likelihood of success.
* The Civil War is ideal for this purpose.
  + Though the conflict was an intrastate dispute, the manner of fighting by the combatants—two standing armies engaging in pitched battles over territory—was more akin to conventional warfare than the insurgency combat more common to civil conflicts.
  + Indeed, although it has generally been overlooked within the subfield, the Civil War has been analyzed in several recent works by IR scholars (Poast, 2015, Reiter, 2009). Second, while historical within-war data are scarce, the Civil War is well-documented (Weiss, 1966). This may be due to its place as “the single most important event in American history” (Reiter, 2009, 140), as well as its idiosyncrasies.
  + Using these data, we can show precisely how individual-level commander competence contributed to tactical victory, addressing an issue that has long been ignored by conflict scholars.

**3 Military Appointments in the American Civil War**

* Focusing on leadership in the Civil War provides us with an opportunity to speak to a second literature and examine the generalizability of extant theories of executive appointments.
* Whereas foundational works focused on several personal traits, recent research has focused on loyalty and competence, with a consensus emerging regarding a trade-off between the two (e.g., Edwards, 2001, Hollibaugh, Horton and Lewis, 2014, Krause and O’Connell, 2015, Lewis, 2008, 2009).
* Although these works were (largely) situated within the contexts of appointments to executive agencies and cabinet departments, there is reason to believe the negative relationship between loyalty and competence is applicable to questions of martial prowess. This is especially true of the Civil War, the background of which made loyalty an important criterion.4 Indeed, there is evidence that both Lincoln and Davis considered questions of loyalty when deciding whom to promote. After General Don Carlos Buell’s failure to defeat Braxton Bragg’s forces in Kentucky, Union leaders relieved him of command and searched for a replacement. General George Thomas—a top tactical mind, and one of the only Union commanders to enjoy early success—was a natural successor. Lincoln, however, expressed a reluctance to “replace one Southern-born commander for another,” and opted for William Rosecrans, whose partisan and religious identification were politically expedient (Broadwater, 2009, 87). When Secretary of War Edwin Stanton expressed little confidence in Rosecrans, urging Lincoln to replace him with Thomas, Lincoln referenced Thomas’ origin, saying, “Let the Virginian wait” (Piatt and Van Boynton, 1893, 327), illustrating a willingness to trade competence for loyalty. Thomas was given command of the Army of the Cumberland at the end of 1863, but only after he prevented Rosecrans’ defeat at Chickamauga from turning into a disaster.
* Loyalty played an important role in the selection of Confederate commanders as well, though Davis arguably placed a premium on personal loyalty, rather than birthplace.5 Indeed, the most senior officer in the Confederate military—outranking Generals Robert E. Lee and P. G. T. Beauregard—was New York native Samuel Cooper, who was appointed adjutant general of the Confederate Army, responsible only to President Davis himself. William Davis (1996, 360) argues that Cooper was awarded his lofty rank because of his friendship with the Confederate president, and his willingness to do Davis’ bidding, allowing the latter to “solidify [his] control over his armies. Davis could act through Cooper, and the rank insulated Cooper from question.”
* These anecdotes suggest that perceptions of loyalty influenced both Confederate and Union decision making during the war. This does not mean, however, that loyalty was the only—or even paramount—criterion. Indeed, relative to bureaucratic appointments, the importance of battlefield competence and the existential threat posed to the Confederate government (as well as uncertainty over repercussions in the event of capture or a Confederate loss) likely rendered competence even more critical.6,7 Moreover, the unique context of the war may have mitigated any relationship between loyalty and competence. For example, uncertainty over punishment in the case of a Confederate loss might have ensured the pool of potential flag officer nominees was disproportionately loyal. Current models rarely consider the pool of potential nominees (but see Hollibaugh, 2015) and none, to our knowledge, endogenize self-selection into the pool. Conceivably, the inclusion of high penalties for failure and self-selection might affect longstanding results.
* Additionally, cultural differences might alter the aforementioned effects, or even exert their own influence. Indeed, while both the Union and the Confederacy were part of the United States prior to secession, cultural differences existed between the two—and persist to this day. One of those most relevant to our analysis is honor, which has long been valorized within the American South (Nisbett and Cohen, 1996). Characterizing honor as a reputation for resolve, Dafoe and Caughey (2016) find that Southern presidents have been more likely to initiate, continue, and win militarized disputes.If the same dynamic held in the Civil War, then those commanders who most identified with the Confederacy (i.e., those most “loyal”) likely also identified most with Southern honor, and would be more likely to achieve success on the battlefield due to the desire to maintain a reputation of unwillingness to back down. This should not hold (at least not to the same extent) for Union commanders, not having grown up in a culture that placed the same emphasis on honor; in these cases, the standard loyalty-competence tradeoff would be more likely to be observed, with loyalty having neutral—or even negative—effects on outcomes.

Finally, for Confederates with military backgrounds, traits related to competence may be associated with increased (personal) loyalty. Unlike Lincoln, Davis was a Mexican War veteran and a West Point graduate. As such, he maintained personal connections within the officer corps. When putting together the Confederate government and military, he “looked to West Pointers and to men he knew and trusted” (Davis, 1996, 316). For Davis, some attributes associated with competence as an officer—such as training at West Point—might also have been related to personal loyalty. Thus, the circumstances involved in military appointments—as well as the characteristics of the South—could result in a positive association between loyalty and competence for Confederate commanders, in contrast to the long literature on the loyalty-competence tradeoff among executive appointees.8 However, these considerations should be absent for Union commanders, who (for the most part) neither grew up in the culture of the American South nor faced uncertainty over the possible outcomes in the case of a Union loss (e.g., they faced no possibility of being executed for treason, as conquest of the Union was not among the goals of the Confederacy).

**Why Soviets Can’t Win Quickly in Central Europe**

**John. J. Mearsheimer**

International Security, 1982, Vol.7, No:1

**p.3**

* **Balance of conventional forces:** 
  + Important, due to the strategic parity between NATO and Warsaw Pact.
  + What to do to counter perceived inferiority at the conventional level? Newyork times: neutron bomb.
  + NATO does not have the capability to win a conventional war, but NATO can deny the Soviets a quick victory and then turn the conflict into a lengthy war of attrition.
* **Aim:** Examine the Soviets prospects for effecting a blitzkrieg against NATO. 2 related issues:
  + Whether Soviets have the force structure, doctrine and the raw capability to implement this strategy?
  + When NATO’s defence capabilities and terrain considered, what are the prospects for Soviet success?

**p.6**

* The balance of forces on the central front (figure from Robert Lucas Fischer, Defending the central front: The balance of forces, 1976): **Overall ratio of forces**
  + Pact has 57 divisions, NATO has 28. Pact has slightly more than 2:1 advantage.

**p.7**

* + Number of divisions gives distorted view of the balance:
  + 2 other alternatives: Manpower and weaponry.
  + NATO: 414k: 564k:Pact, soviet advantage shrinks to 1.36:1
  + There is a category of “soldiers in fighting units”: soviets advantage is 1.2:1

**p.8**

* + Weapons: pact advantage in tanks 2.5:1, in artillery 2.8:1,
    - not included qualitative differences within same category
    - problem pf comparing different categories (tank vs. rtillery)
    - DoD: system of weighing weapons: 3 principal chars take into account: mobility, survivability, firepower. Armoured division equivalents-ADE, pact has 1.2:1 advantage.

**p.9**

* Reinforcement and mobilization:
  + Ratio of forces in any mobilization influenced by the time which side starts.
  + Simulteneaous: pact has adv 1.2:1 ADE, 1.36:1 MANPOWER
  + After pact mob: 2:1 pact adv.
  + Mobilization gap widens
* **Numbers and Strategy: the critical connection:** 
  + There are definite limits to the utility of measuring force levels.
  + Even a cursory study of military history would show that it is impossible to explain the outcome of many important military campaigns by simply comparing the numbers of forces each side.
  + Nevertheless, it is clear that if one side has an overwhelming advantage in forces, that glaring asymmetry is very likely to lead to a decisive victory.
  + In essence, large force will simply overwhelm the smaller onei ex: German-Poland, 1939
  + Soviets doesn’t have such an overwhelming advantage. Success depends not to nums here but to how they employ their forces. Success will be a function of strategy, not overwhelming nums. Success depend on the Sov cap to effect blitzkierg.

**p.10**

* **Doctrine**
  + NATO forward defence: sov. Can mass the troops to the points of overwhelming force ratios to break the line. Pierce the front run through rear.

**p.13:**

* + 1945 offensive against Japanese army was blitzkierg, although attrition strategy could have better.

p.14

* Soviet prospects for effecting a blitzkierg : 2 key question
  + Can sov achieve necessary force ratios on their main axes of advance?
  + If sov tear open front, can they exploit these opennings?
  + Impossible given the present balance of forces to achieve overwhelming force ratios. Pact 64 div, nato 32: soviets 6 axes

**p.15**

* + It is usually assumed that to overwhelm the defense, an attacking force needs more than a 3:1 advantage in forces on the main axes of advance.
  + Hypothetical: Sov decides
    - 5:1, NATO 4 div/sector Pact 20 div gerek--->3 axis yapabilir.

**p.16**

* + - 4:1, pact 16 div egerek , 4 axis
    - 6 axe karar veremez hacı, force ratio 2.5 :1 e düştü. Which hardly satisfactory in light of the widely recognized assumption that an attack requires more than a 3:! Advantage on each main axis to succeed.

**p.26**

* **Force to space ratios:**
  + when examining the prospects of breakthrough at the main point of attack, focus only by balance of forces is not enough.
  + Consider also force to space ratios: num of div that the defendef requires to hold a specific sector of territory.
  + If a defender confortably defends 100km with 4 div, then even if the attacker has 24 div, that attacker will have to sacrifice a significant num of his 24 divisions before he finally wears the defender down to the point where he can effect a penetration.
  + Time consuming and costly
  + There is an important factor which complicates the attacker task in such a situation: the crossing the T phenomenon. There is not enough room for the attacker to place all of his 24 divisions at the point of attack. He will put in echelons.
  + In essence, the defender is in the enviable position of being able to deal with the attackers forces on a piecemeal basis.
  + 5 sov div to 2 us div. first sov has to put 3. Ratio drops to 3:2

**p.30**

* Sov cap for blitzkierg warfare
  + Force structure
  + Doctrine
  + Skill
* There is an inverse relationship between the mass and the velocity of an attacking force. As the size of the attacking force increases, logistics and c2 decrease. Difficult to blitzkierg.

**p.32,33**

* Training and initiative:
  + Blitzkierg reqs highly flexible c2 and officers,ncos. In blitzkierg success is ultimately a consequence of able commanders making rapid-fire decisions in the “fog of battle”.
  + Success will be largely the result of highly skilled officers and ncos making the decisions that will enable the armoured spearheads to outrun nato’s defense .
* Conclusion:
  + If our American fighting men ever conclude that high levels of this government have them deployed on a strategy that is inevitable failure, then nothing could destroy military morale of our country quicker, senator sam nunn, 1977

**Opening Up the Black Box of War**

**Scott Sigmund Gartner**

The Journal of Conflict Resolution; June 1998, 42, 252-258

**p.252**

* What factors influence victory or defeat in war?
  + **Realist approaches to IR**, with their emphasis on system structure: Ken Woltz, 1979 Theory of international politics, Random House
    - Wartime decisions and behaviour are largely unimportant in determining the nature of politics during and after a conflict.
    - View war as a scale that balances bundles of pre-war capabilities.
  + **Dominance of realist approach for the last 40 years:**
    - Analyses focused on the initiation of war, rather than behaviour within war.
    - Siverson and Starr(1991,The diffusion of war: a study of opportunity and willingness ), Licklider (1993, Stop the killing: how civil wars end)
    - Cold war: focus was on how to avoid conflict initiation or deterrence,
    - CoW data set of interstate wars treats each war as an exclusive, single observation. (Small and Singer, 1982)
  + Democracies don’t fight literature, fail to examine wartime behaviour.

**p.253:**

* **A New wave of research:** 
  + Wartime decisions influence;
    - War’s outcome: Ray and wang, 1994
    - Duration: Benneth and Stam, 1996
    - How is conducted: Gartner in press
  + Wartime factors influence domestic politics: during, Downs and Rocke, 1994, after, Bueno de Mesquita and Siverson, 1995
  + Domestic politics influences the conduct of war: Avant, 1993
  + These studies suggests that politics does not stop with war onset.
  + How war and politics jointly interact.
* **Why a new wave now?**

1. Though explanation is given like this: 23\*√2=32.5, means since combined fleet is divided, they need √2 plus force to make equation with the UK fleet. I make this deduction to reach 2/1 force equation: 32²=23²+23², thus in the first battle would be fight with 32²=23² this portion. Equals to 1024 vs 529. [↑](#footnote-ref-1)