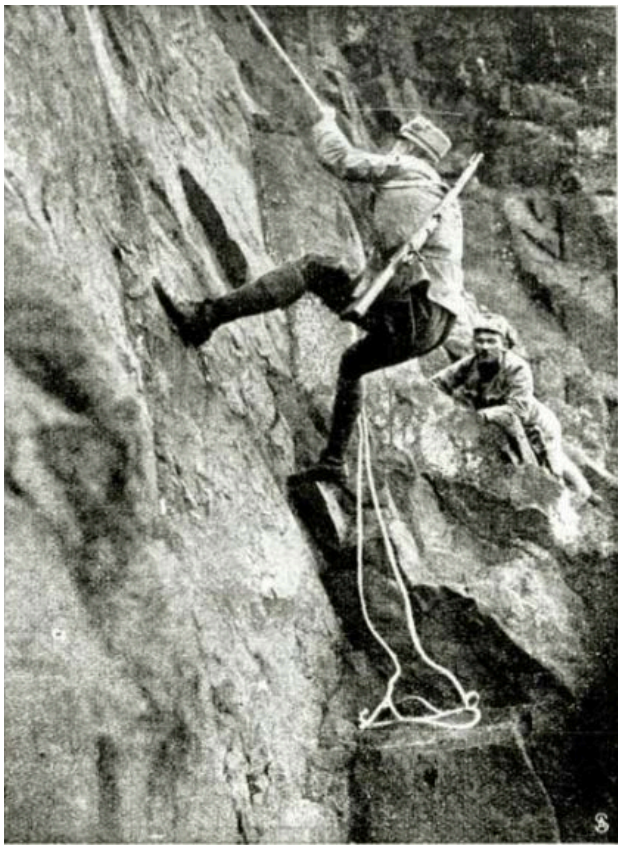
A "White Death"

The First World War in the Dolomites and the Genesis of Modern Warfare, 1915-1918



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To my grandparents, Vito, Vincenzo, and Giuliana,

without whom none of this would have been possible,

and to Gemma and Umberto Marzotto, forever lovers of the Dolomites.

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Cover Image: "Bergführer-Abteilung in den Dolomiten," 1915–1918, KA BS I WK Fronten Tirol, 11751, OSV

Acknowledgements

The Dolomites are a magical place. I have been struck by their beauty from as early as I can remember, and fascinated by the mysticism with which they are shrouded. I have had the fortune of spending many winters and summers in these mountains. When I was maybe eight or nine years old, my ski coach took me to visit trenches and tunnels on the Falzarego Pass, near Cortina d'Ampezzo. I still remember the mixture of wonder and sadness I felt at learning how a place so beautiful could also be the ground for such utter devastation. In a sense, this thesis has been in the making for far longer than my time at Columbia.

This project has been the most challenging piece of work I have ever completed, and it likely would not have come into being without the support and guidance of professors, mentors, friends and family, to whom I owe a sincere debt of gratitude. Thank you, first of all, to my dedicated seminar instructor, Professor Michael Stanislawski, whose guidance throughout this process, both methodological and moral, has been invaluable. Professor, thank you for reading over countless drafts, pushing me to find my voice, and never ceasing to believe in the viability of the thesis, even when I myself was starting to doubt it. Thank you also to my second reader, Professor Adam Tooze. Thank you, Professor, for your dedication, your time, and most importantly your encouragement. I have been struck throughout the past year by the brilliance of your analysis and historical thought, and I can only hope this thesis has absorbed a fraction of our conversations and your insights.

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Note on Geography

Locating the Dolomites is a complex task, and certainly not the primary concern of this thesis. There is little consensus on the exact perimeter of the mountain range, not least because at its edges it blends so seamlessly with the rest of the Alps. In the following chapters I adopt a deliberately broad geographic definition of the Dolomites shaped by the nature of warfare and character of military operations. Some of the sites discussed may be considered marginally outside the strict boundaries of the region, but are included herein because they formed part of a contiguous front, were of strategic relevance for contemporary officials coordinating operations in the Dolomites, and, most importantly, share the same terrain and climate as the mountains we are focused on. The thesis is thus structured around not cartographic precision but rather environment, topography and lived experience.

List of Maps and Tables

Abbreviations and Terminology

k.u.k.	Kaiserlich und Königliches (Imperial and Royal)
AOK	Armee Ober Kommando (Austro-Hungarian high command)
CS	Comando Supremo (Italian high command)
OHL	Oberste Heeresleitung (German high command)
NCO	Non-commissioned officer
OSV	Österreichisches Staatsarchiv, Vienna, Austria
MSIG	Museo Storico Italiano della Guerra, Rovereto, Italy
k.u.k. Armee	Austro-Hungarian Army
Regio Esercito	Italian Army
Deutsches Heeres	German Army

INTRODUCTION

KING LAURIN'S GARDEN

As dawn broke on October 24, 1917, Austro-Hungarian and German forces unleashed a ferocious attack on Italian positions near Caporetto, a small town nestled in the Julian Alps. What followed was one of the greatest disasters of modern military history. Under the pressure of devastating artillery and piercing attacks by elite infantry units, Italy's Second Army disintegrated. By November 12 Italian forces had withdrawn across the Piave River, some 150 kilometers west of Caporetto—on no other occasion during the First World War would so much ground be gained in so little time. The losses were equally staggering: 12,000 dead, 30,000 wounded, and 294,000 prisoners. But in the end the routing the Germans and Austro-Hungarians had looked for failed to materialize. The front line stabilized on the Piave, and the coming of the new year saw a return to trench warfare.[1]

This is a well-known tragedy. The memory of Caporetto remains etched in Italy's national consciousness, its lessons foundational for much of what is taught to young cadets at West Point or Sandhurst. Few, however, remember what held the Italian front line together in November 1917. As the Second army poured across the plains of Venetia, their retreat was anchored in the northwest. Here, across the mountains of the Dolomites, the Fourth Army provided the protection necessary for their comrades to regroup and for the Italian high command to regather its composure. The men of the Fourth Army had been locked in a brutal struggle against Austro-Hungarian forces since the summer of 1915. The war they were fighting was unprecedented—never before had two armies faced off at often over two thousand meters of elevation, amid incessant snowfall, deadly avalanches and freezing cold. It was also a war that was bringing into being a new understanding of warfare.

[1] For further discussion of the Battle of Caporetto, see Nicola Labanca, *Caporetto: Storia di una Disfatta* (Firenze: Giunti, 1997); and Claudio Alberto Andreoli, *Caporetto (1917): Una Disfatta tra Cronaca e Storia* (Città di Castello, Italy: LuoghInteriori, 2017).

Challenged by broken topography, restricted space, and primitive infrastructure, between 1915 and 1918 the Italian and Austro-Hungarian armies would find themselves the protagonists of a process of theoretical evolution that laid bare the inadequacies of old military ideas and the urgent need for new ones. This is the story of this process and of the theater in which it unfolded, of its contradictions, devastation, and often painful humanity.

* * *

The Dolomites are a dramatic mountain range. Located in the Eastern Alps, they unfold across the regions of South Tyrol and Trentino, forming a natural frontier between Austria and Italy. They take their name from the French geologist Dieudonné de Gratet de Dolomieu, who in the late 18th century identified the special limestone from which they are made, the mineral dolomite. The friability of this rock gives the Dolomites their unique form—battered by millenia of rain, snow and wind, these mountains appear worn and scarred. Their topography is characterized by sharp pinnacles, cathedral-like spires, and steep cliffs, giving them a menacing, imposing presence. Between their peaks sit deep valleys and wide plateaus. At sunrise and sunset the Dolomites turn pink and fiery orange, a mystical phenomenon known as "Enrosadira." According to local legend, King Laurin, ruler of the dwarf kingdom of Catinaccio, once tended a beautiful rose garden so vast it stretched across the mountains. After being captured for kidnapping a princess he had fallen in love with, Laurin cursed the garden so that it could never be seen again, neither by day nor by night. But in his rage, he forgot to banish dawn and dusk, when the Dolomites continue to glow with the color of his roses.[2]

Historically, the Dolomites have served as a region of critical strategic significance. The Romans built fortifications and roads across them as they spread northward from the Italian peninsula and into Western Europe. Though the Dolomites were not known as such at the time,

[2] Antonio Berti, *Le Dolomiti Orientali: Guida Turistico-alpinistica* (Milano: Fratelli Treves, 1928), 1-72; Reginald Farrer, *The Dolomites: King Laurin's Garden* (London: Adam and Charles Black, 1913), 1-19.

Polybius, Livy, Strabo and Pliny would all comment on their landscapes in their writings. As the Roman Empire began to fall apart, the region's passes and valleys became invasion routes for waves of barbarians, including the Goths, Visigoths, and Huns. After the barbarians came Charlemagne, who used the Brenner Pass to impose Frankish rule over the Lombards in 781.[3] Several centuries later the Republic of Venice would strike defensive agreements with communities in the Dolomites to protect its rear, before the Austrian acquisition of Venetia in 1797 transferred control of the mountains to the Habsburg monarchy.[4]

With the 19th century came an increasing politicization of the territory. In 1815 the Austrians decided to merge the predominantly Italian region of Trentino with the almost entirely Germanic Tyrol, setting off a nationalist movement that would twice erupt into violence over the course of the next century—in 1848 with the year of revolutions and in 1866 with an Italian military offensive on Trento led by the revolutionary Giuseppe Garibaldi. Both failed, and by 1914 Trentino and the Dolomites remained under Austrian control.[5] But the Habsburgs' aversion towards brutal and repressive mechanisms of imperial administration allowed for the rise of gentler types of nationalism, which by the turn of the century would take the form of intense sporting competition. The politicization of the Dolomites, in fact, had coincided with the birth of mountaineering, quickly transforming the sport into a medium for the performance of national identity. Throughout the late 1800s and early 1900s the Austrians and Italians raced to conquer peaks, name passes, and establish alpine clubs in a quiet but potent contest for symbolic ownership of the landscape.[6]

To the men who had partaken in this rivalry, often risking life and limb, the explosion of violence in 1915 seemed like a natural culmination of a process that had long been underway. The Italians struck the first blow. They declared war on Austria-Hungary on May 23 and moved to break

[3] Alexander Robertson, *Through the Dolomites: From Venice to Toblach* (London: George Allen, 1896), 3-11
[4] A. J. P. Taylor, *The Habsburg Monarchy, 1809–1918* (Chicago: University of Chicago Press, 1948), 34-37.
[5] Mark Thompson, *The White War: Life and Death on the Italian Front 1915-1918* (New York: Basic Books, 2008), 96-99.
[6] Leoni, *La Guerra Verticale* (Torino: Giulio Einaudi editore, 2015), 18-26.

through the Dual Monarchy's alpine frontier. The army's officials envisioned a swift victory, hoping to catch the Austro-Hungarians—by then already occupied against Russia and Serbia—unprepared and march swiftly across the Dolomites. But the ineptitude of the Italian army, together with the defensive advantage which elevation offered the Austrians, brought this initial offensive to a halt, and positional warfare soon set in.[7]

Over the next three years the two armies would fight bitterly over this sector of the Italian front. For both, control of the Dolomites was imperative. For the Italians, it offered a chance to outflank Austrian defenses in the Adige Valley, break into southern Tyrol, and seize Trento, the city that had eluded Garibaldi in 1866. At the same time, however, if they were pushed to the edge of the mountains, back to the Vicentine Prealps and the Asiago Plateau, they risked total collapse. A successful Austro-Hungarian drive through the Dolomites would threaten the logistical heart of the Italian army in the Po Valley, and put Italian forces locked in combat a hundred kilometers to the east on the Isonzo front at risk of encirclement.

[7] Basilio di Martino and Filippo Cappellano, *La Grande Guerra sul fronte Dolomitico: La 4a Armata Italiana* (1915-1917) (Edizioni DBS Zanetti, 2014), 57-88.

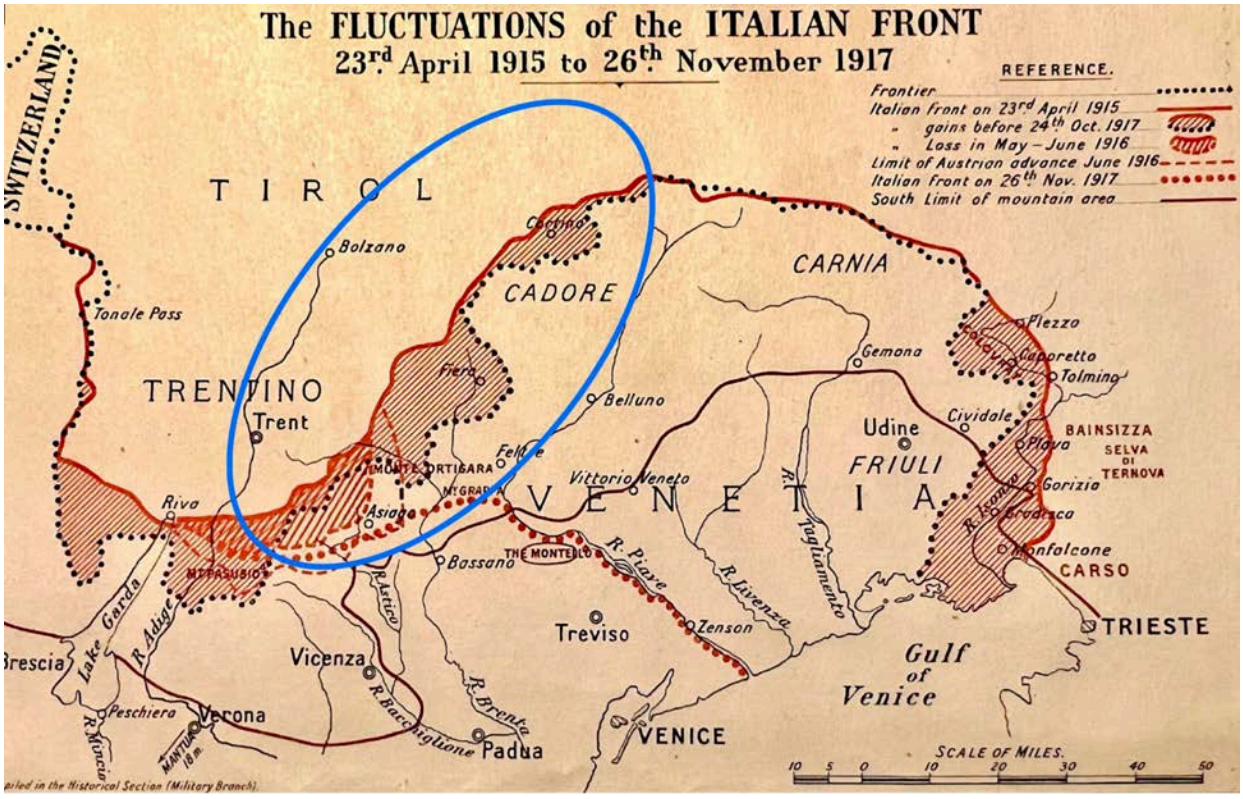

Figure 1 - Map of the Italian front in the First World War, 1915-1917 (Dolomites identified in blue)

Neither scenario materialized until the final days of the war. The Italians battled fiercely to dislodge the Austrians from their positions, but found no way through to Trento. The Austrians were slightly more successful, nearly reaching the Po Valley in the spring of 1916. They, too, however, could not overcome the grinding character of modern warfare, and the front stabilized on the Asiago Plateau. Then, in late October of 1918, everything changed. The Austro-Hungarian Empire collapsed, and with it so did its defenses. Supported by the British and the French, the Italians stormed through the Asiago Plateau and the Dolomites, before driving up the Adige Valley and capturing Trento on November 3.

Historiographical Interventions

In reconstructing these events, an important body of literature has built a highly particularized image of the Dolomites as a theater of war. Many scholars have pointed to the peculiar features of mountain warfare to argue that fighting in the Dolomites was unlike anything seen on other fronts during the First World War. Of particular concern to these authors are the athletic demands of such warfare, and their relationship to the pre-war mountaineering tradition described above. Diego Leoni argues that, building in the wake of this tradition, the Dolomites witnessed the birth of "war as sport." Here, posits Leoni, "most operations [...] easily resembled stunts," creating a unique "acrobatic spectacle."[8] According to Michael Wacthler, such athleticism returned soldiers to a Hellenic form of classical warfare. In the Dolomites, writes Wachtler, "man to man combat and heroism became once again critical," transforming war into a "reenactment of Greek mythology [...] no different from Trojan legend: Achilles vs. Hector, Petrachles vs Ulysses."[9] Still others have claimed that the engrossing beauty of the Dolomites created a transcendent condition in which men could "forget that [war] was more than an occasional disturbance."[10]

This tendency to particularize and aestheticize has pushed most scholars seeking to understand the events of 1915 to 1918 towards endogenous explanations. Stefano Di Martino and Mark Thompson, for example, have argued that the initial struggles of the Italian and Austro-Hungarian armies stemmed from their "poor preparedness [...] for mountain warfare."[11] According to authors like Di Martino and Thompson, the failure to develop tactical doctrine appropriate for the unique demands of high-altitude combat directly contributed to the persistence of these difficulties. As Mario Isnenghi and Giorgio Rochat note, both armies "took for granted that

[8] Leoni, *La Guerra Verticale*, 205; 403.
[9] Michael Wachtler and Günther Obwega, *Dolomiti: La Grande Guerra* (Bolzano, Italy: Athesia, 2003), 49.
[10] Luciana Palla, "La Grande Guerra in Zona di Confine: Le Valli Dolomitiche," in *Una Trincea Chiamata Dolomiti*, ed. Emilio Franzina (Udine, Italy: Paolo Gaspari editore, 2003), 146-59.
[11] Di Martino and Cappellano, *La Grande Guerra sul Fronte Dolomitico*, 50; Thompson, *The White War*, 193-206.

the war would mostly be fought on flat land," and this prevented either from preparing appropriately for the peculiar fighting conditions they would face in the Dolomites.[12]

This thesis engages with this body of literature by adopting an exogenous approach to the study of the Dolomite front. It argues that the kinetic events observed throughout the front—particularly the early struggles of both armies—were shaped by a much broader process of European military development that predated the outbreak of war by nearly half a century. In doing so, it moves the reader's attention away from narrow concerns of tactical doctrine and endogenous explanations to wider questions of military theory and organizational structure.

The thesis employs this focal shift to trace the evolution of Austro-Hungarian and Italian military thought. As the following chapters will demonstrate, the Dolomites created powerful incentives for the development of new theoretical paradigms by demonstrating the obsolescence of pre-war military models. From these paradigms was born a new system of warfare which eschewed quantity in favor of quality. In the Dolomites, the thesis will argue, the ability to embrace this new system and integrate its core ideas into military organization determined how events unfolded—the Austro-Hungarians, successful in their recalibration of theory, were able to hold out until 1918 despite a precarious material and strategic situation, while the Italians, incapable of doing the same, struggled to fulfill their war aims. By investigating the causes of such failure and success, the thesis will place the Dolomites at the heart of a complex European network of military dialogue, shifting alliances, and nationalist politics.

Discussing the performance of Habsburg forces on the Italian front inevitably places the forthcoming pages in conversation with the large corpus of scholarship concerned with their spectacular collapse. In trying to explain how an army that had held out with remarkable resilience for over four years of war could fall apart in a week, most authors have pointed to a devastating

[12] Mario Isnenghi and Giorgio Rochat, *La Grande Guerra, 1914-1918* (Milano: Sansoni, 2000), 162.

confluence of material and political pressures in 1918. A. J. P. Taylor, one of the leading scholars of Austrian imperial history, argued in 1941 that in the end "the [Austro-Hungarian] army succumbed to the national torrents which had swept away the Imperial organisation at home."[13] Similarly, István Deák worked to demonstrate that the implosion of the Dual Monarchy's army was caused by the sudden unraveling of the complex political order the monarchy had built across Central Europe, and "the international peace it guaranteed."[14] Graydon Tunstall has focused on how "Austria-Hungary entered the First World War totally unprepared to conduct a prolonged economic and military conflict," and how the economic crisis and explosion of nationalist sentiment of 1918 catalyzed a process of decline that had started long ago.[15]

By tracing the development of Austro-Hungarian military theory in the Dolomites, I argue, we can offer a new framework through which to understand the final days of the Habsburg army. As I will show, political and economic conditions may clarify why the latter was brought to the verge of destruction, but alone they cannot explain how such destruction unfolded. More specifically, they fail to fully account for the dichotomous behaviour of Austro-Hungarian units in the final days of war. If nationalist pressure pushed men to abandon the front line and return home, why did some non-Germanic units continue fighting while their compatriots mutineered? And if the shortage of food and other materiel destroyed any remaining resilience, how did troops guarding passes at over 2,000 meters of elevation fend off the enemy until the very end?

I argue that the answer to these questions, and to the collapse of the Austro-Hungarian army more broadly, lies in the shift to a qualitative understanding of warfare. This understanding decentralized the Austro-Hungarian army as an institution by encouraging an unprecedented degree

[13] Taylor, *The Habsburg Monarchy*, 251.
[14] István Deák, "The Habsburg Army in the First and Last Days of World War I: A Comparative Analysis," in *East Central European Society in World War I*, ed. Béla K. Király and Nándor F. Dreisziger (New York: Columbia University Press, 1985), 311.
[15] Graydon A. Tunstall, *The Austro-Hungarian Army and the First World War* (Cambridge: Cambridge University Press, 2021), 1, 323-58.

of attention on the individual unit and its men. In doing so, it assigned far greater importance to the political ideas and general sentiments of the soldier, who was now effectively entrusted with the army's survival. Such decentralization, however, also allowed units to exist independently of one another, ultimately explaining why the disintegration of the Dual Monarchy's military forces did not unfold as a linear, coordinated process but rather a more complicated, highly varied, and ultimately chaotic chain of events.

In short, this thesis presents the Dolomites as an important medium through which to observe the transformation of European military thought. By focusing on the evolution of theoretical paradigms, it reveals the importance of these mountains in encouraging the development of new ideas and demonstrating their importance to operational success. These ideas, grounded in qualitative questions of force employment, serve as a framework through which to understand why the First World War in the Dolomites unfolded in the way that it did. In particular, they explain the resilience of the Austro-Hungarian army and the uneven nature of its final collapse. The thesis thus urges the reader to see the Dolomites not as a fascinating, idiosyncratic backdrop to the rest of the war, but as a crucible in which modern warfare was forged and the underlying structural tensions of the modern army brought into sharp relief.

Sources and Chapter Outline

This investigation is grounded in the official documentation of the Italian and Austro-Hungarian armies, through which I sketch the process of institutional development that unfolded in the Dolomites. Two levels of documentation are particularly important. First, I rely on the reports, directives and internal communications of the Italian and Austro-Hungarian high commands to highlight the shift—and stasis—in the reasoning of military officials with respect to operations on the front. Second, I draw on the dispatches, after-action accounts, and orders of

lower-level commands and individual units to trace a gradual process of decentralization, as well as the dissemination and integration of new ideas. I must also, however, acknowledge the importance of primary accounts penned by officers and soldiers, without which this thesis could hardly expect to capture the color and darkness of war.

The thesis is organized in three chapters and an epilogue, proceeding in chronological order to follow the process of theoretical development on which it is centered. Chapter 1 introduces the Dolomites as a theater of war. It begins by highlighting the initial struggles and failures of the Italian and Austro-Hungarian armies, before investigating their causes through an analysis of late 19th-century and early 20th-century war planning to show how they were rooted in an inadequate theorization of warfare. Chapter 2 builds on this discussion by outlining how the two armies responded to the aforementioned challenges. Two antithetical cases are illustrated here—one of successful innovation, that of Austria-Hungary, and one of profound institutional obstinacy, that of Italy. Chapter 3 begins with an attempt to explain such divergence through an attentive analysis of continental alliances, strategy, and other issues, situating the Dolomites within a larger canvas of European politics and strategy. As the evolution of politico-strategic conditions is traced, the reader is brought to confront the end of the mountain war and the collapse of the Austro-Hungarian army. Here, the theoretical innovations discussed in Chapter 2 are used to offer a new interpretation of this collapse. The epilogue challenges this interpretation, before resolving it through a more detailed account of the war's final days and a discussion of the modern army.

CHAPTER ONE

RUDE AWAKENING

> Black makes me feel mystery, fear, the absolute, infinity, God, universal life; but white gives me the sense of things ending, the iciness of death.[16]
> —- Giuseppe Ungaretti, 1917

Across the Dolomites, war presented itself in perversely comedic ways. Throughout 1915 and into 1916, the inexperience of young recruits, officers and command posts often created bizarre, almost unbelievable scenes. Karly Mayr, an 18 year-old private in the Austro-Hungarian Army (*Kaiserlich und Königlich Armee*, or k.u.k. Armee for short), recorded the disbelief of his peers and commanding officer when, a few days into their deployment, they observed a group of Italian *Lancieri*—special cavalrymen in the Italian Army—approach to within a few hundred meters of their position on horseback.[17] The *Lancieri*, apparently unaware of the enemy's presence and with no consideration for the basic features of mountain warfare, slowly dismounted, donning colored uniforms and brandishing regimental flags. With no cover from enemy fire in sight, they proceeded to dig trenches in broad daylight. Such was the shock of Mayr and the men in his company that a few minutes went by in dead silence, the Austrians watching on in bewilderment as the Italians went about their work untroubled. After a short while, the officer snapped the men out of their daze, ordering an enfilading field of fire and announcing, "We will show them who rules here." Within five minutes the small plateau the *Lancieri* had chosen to build their position across was littered with

[16] Giuseppe Ungaretti, *Lettere a Soffici* (Firenze: Sansoni, 1981), 12. Trans. Thompson, *The White War*, 193.
[17] The *Lancieri* were a rare, elite type of cavalrymen whose origins date back to the mid-18th century. Their name is translated as "spearmen," in reflection of their history as spear-wielding soldiers of the early 19th century (by the turn of the 20th-century most units had dropped the spear in favor of more modern weaponry). For further discussion and details of particular units, see Rodolfo Puletti, *I Lancieri di Aosta, 1774-1974: duecento anni di storia di un reggimento di cavalleria* (Modena: STEM, 1975); and Giorgio Pugliaro, *I Lancieri di Novara: storia di un reggimento di cavalleria dal Risorgimento a oggi* (Milano: Mursia, 1978).

carcasses and bodies, the colored uniforms and flags the Italians had worn and flown so proudly now forming a disturbing palette in a field of death.[18]

The Austro-Hungarian Army, for all the conceited rhetoric of its officers, was not exempt from similar instances of incompetency in the early phases of the war. German Alpenkorps commanders deployed in defensive assistance of the Austro-Hungarians in late 1915 routinely commented on the profound inadequacy of Emperor Franz Joseph's forces.[19] Austro-Hungarian units, reported the commander of a Bavarian *Schneeschuhbataillon* ("snowshoe battalion"), operated "without understanding the special requirements of positional warfare and, above all, mountain warfare with modern technology." All too often they would leave crossings and vantage points of critical strategic value completely unguarded, only for the Germans to protest furiously and have men deployed there. Most shocking and worrying to the Alpenkorps was the apparent lack of training their Austrian counterparts had received. Officers observed that many of the *Standschützen*, the citizen militia tasked with defending the local region of Tyrol, "were not even familiar with the rifles…with which they were equipped." The *Landsturm*, a reserve force made up of men aged 30-50, had only fired a handful of shots prior to mobilization.[20]

A Cold Welcome

This was the reality of 1915. For both armies, the first year of war in the Dolomites presented huge challenges. The environment within which they were called to operate was deadly

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[18] Michael Wachtler, *La pace fra noi: Nelle memorie di un soldato diciottenne la storia di una giovinezza marchiata dalla guerra* (Bolzano, Italy: Athesia, 2004), 23-25.

[19] The German Army deployed the Alpenkorps, a division specialized in mountain warfare, in support of the Austrians in May 1915. Their mission was almost entirely defensive, but their vastly superior training and methodical way of war soon created friction and frustration with the Austrians, who often could not understand the tactical logic behind the behavior of their allies. For an in-depth study and account of the Alpenkorps in World War I, see Günther Hebert, *Das Alpenkorps: Aufbau, Organisation und Einsatz einer Gebirgstruppe im Ersten Weltkrieg* (Boppard am Rhein: H. Boldt, 1988); and Holger Jaruschek, *Il Deutsche Alpenkorps sul Fronte Dolomitico nel 1915* (Udine: P. Gaspari, 2003).

[20] "Ueberblick über die Tätigkeit des Bayer. Schneeschuhbataillon K2 1 in Alpenkrieg von Mai bis Oktober 1915," n.d., Fondo Esercito Italiano, 5.90, Archivio della Fondazione Museo Storico Italiano della Guerra, Rovereto, Italy; Tunstall, *The Austro-Hungarian Army*, 24-57.

and prohibitive. For starters, there was the weather. If temperatures were bearable in summer, they turned into the bane of a soldier's existence with the onset of autumn; in winter, they could drop to as low as minus 50 degrees Celsius. Throughout the Dolomites, thousands would die of frostbite in the first year of war alone.[21] But it was not just the cold that threatened the men. By far the biggest danger were avalanches, which could wipe out an entire company within a matter of seconds.[22] These were unpredictable, and they significantly degraded the operational capacity of units—snow could bury as many as 10,000 men in the space of a week. On December 13, 1916 (a day the troops would come to call "White Friday"), the Austrians lost over 2,000 troops in a series of devastating avalanches.[23] The devastation wrought by the avalanche left a vivid impression on those who were lucky enough to escape its vise, as Lieutenant Viktor Sherf recorded in his diary the morning after White Friday:

> Up ahead, one of [the men] was dancing and singing—he'd gone mad—while others dug and shoveled. Where was the reserve barrack of the 2nd Company? Was it even there anymore? A jumble of beams, planks, piles of snow, arms and legs, scraps of uniforms and canvas. Everything destroyed, like a giant accordion crushed into a crevice of rock. A field of dead, their faces swollen and bluish.[24]

It was not long before soldiers referred to this thundering beast as "the white death."[25]

The climate and environment of the Dolomites also created significant logistical challenges. Perhaps most problematic was the topography of the mountain range. Writing as a reporter

[21] Thompson, *The White War*, 201-202.
[22] Oswald Koner, "Traduzione del capitolo 'La conquista del Passo della Sentinella' (Die Kroberung der Sentinella), Del libro: Battaglie sul fronte di Croda Rossa (Kampf um die Sexter Rotwand)," 1937, Fondo Studi e Documenti, MS.12, MSIG.
[23] Andreas Becker, "Reanalysis Sheds Light on 1916 Avalanche Disaster," *ECMWF Newsletter*, no. 151 (Spring 2017), https://www.ecmwf.int/en/newsletter/151/meteorology/reanalysis-sheds-light-1916-avalanche-disaster.
[24] Michael Wachtler and Andrea De Bernardin, *La Città di Ghiaccio: La Grande Guerra nelle viscere della montagna* (Bolzano, Italy: Athesia Touristik, 2009), 91.
[25] Koner, "Traduzione del capitolo 'La conquista del Passo della Sentinella' (Die Kroberung der Sentinella)," 1937.

stationed on the Italian front in 1917, Rudyard Kipling described the jagged features which at once lent the Dolomites breathtaking beauty and savagery:

> The glass split them into tangled cross chains of worsted hillocks, hollow-flanked peaks cleft by black or grey ravines, stretches of no-coloured rock gashed and nicked with white, savage thumbnails of hard snow thrust up above cockscombs of splinters, and behind everything an agony of tortured crags against the farthest sky.[26]

Against the backdrop of such brutishness conventional military logistics proved completely ineffective. In the mountains trains could not get very far. For units and their baggage, the journey to an assigned position continued by car, horseback or foot. Usually, it was the latter, for neither horses nor cars (at least those common at the time) could overcome the infrastructural deficiencies and topographical features inherent to this theater. In the case of horses, the steepness of most roads made them unusable, especially when it came time for these to ice over.[27] The operational range of cars was similarly limited.

Before the war, the Dolomites had been a relatively rural region, with little infrastructure to speak of.[28] This meant there was often only a single, narrow road that led through a gorge or up a mountain face. The Austrians, for example, had access to only three roads capable of transporting heavy-artillery batteries across the entire front.[29] To make matters worse, those few roads which could carry material to combat positions were inaccessible for most of the winter, buried under avalanches. And though both the Austrians and Italians would push to expand regional

[26] Rudyard Kipling, *The War in the Mountains* (Brighton, United Kingdom: Uniform Press, 2015), 8.
[27] K.u.k. Heeresgruppenkommando FM Freiherr von Conrad, "Nachschubverhältnisse zur 6. ID.: Straßenbahn Verle-Porte di Manazzo - Dosso del Fine," July 7, 1917, AT-OeStA/KA AOK OpAbt Akten 534, OSV.
[28] Di Martino and Cappellano, *La Grande Guerra*, 338-40.
[29] Tunstall, *The Austro-Hungarian Army*, 261.

transportation networks, they could not escape the immutable condition of mountain warfare—a lack of horizontal space and an abundance of vertical height.[30]

Worst of all was that across the front there appeared to exist an inversely proportional relationship between the strategic importance of a position and its accessibility. The more critical a location was for surveillance, holding the line or facilitating artillery fire, the more difficult it was to reach. Some observation posts could only be reached by men of notable athletic ability. As a German *Alpenkorps* officer described in a report to his command headquarters, transport to such points "had to contend with great difficulties,…porters could only carry light loads which very often had to be roped in because of the steepness of the slopes and the expanse of the ridges, which during winter had on occasion to be climbed with an ice axe."[31] The *forcella*, a distinct geographic feature of the Dolomites, presented a separate set of issues. A narrow mountain pass saddled between two peaks, it could cause the collapse of an entire sector if lost. Yet its constricting nature also meant it was extremely difficult to move through, let alone position vast quantities of men and heavy artillery pieces in.[32] As a result, a single company could be tasked with holding a *forcella* for months on end without access to an active supply stream.

Logistical challenges aside, the greatest inhibitor to operational success remained the sheer inexperience of most troops. With the exception of a few elite units recruited from local communities, most men had little to no familiarity with, in Kipling's words, the "savage" terrain of the Dolomites. This was true of both the Italian and the Austrians, who, for separate though equally important reasons, had fielded two armies of significant heterogeneity. The Austro-Hungarian Army alone had mobilized recruits from eleven different nationalities—Austro-Germans, Hungarians, Italians, Romanians, Czechs, Slovaks, Poles, Ukrainians, Slovenes, Serbs and Croats.[33] This reflected

[30] Heeresgruppenkommando FM Freiherr von Conrad, "Nachschubverhältnisse zur 6. ID.," July 7, 1917.
[31] "Ueberblick über die Tätigkeit des Bayer. Schneeschuhbataillon K2 1," Fondo Esercito Italiano, 5.90, n.d.
[32] Koner, "La conquista del Passo della Sentinella," 1937.
[33] Peter Jung, *The Austro-Hungarian Forces in World War I: 1914-1916* (Oxford: Osprey Publishing, 2003), 5-6.

the profound ethnic diversity of the empire, which in 1914 controlled a vast expanse of land ranging from Austria-Hungary in the west to Romania in the east.[34]

The Italians, though homogenous in ethnicity, also found themselves fighting with men of very different backgrounds. In 1914, Italy was still in the midst of a process of state formation, its regions culturally severed and its people linguistically disjointed. Italian had recently become the *lingua franca* of the army, but most recruits, particularly those from rural communities in the center and south of the country, could not yet speak it.[35] This lack of national cohesion, together with the highly variable geography of the peninsula, produced an army where men who had grown up along the steep inclines of the Alps would fight alongside boys from the warm island of Sicily, with little to no way of communicating or transferring experience.[36]

No amount of training could prepare these outsiders for the reality of fighting a modern war in freezing temperatures and at sickening altitude. Upon arrival to the front, many, particularly those born and raised in temperate climates, were shocked by the cold—some found it impossible to sleep.[37] And if for some the cold was bearable enough to drift off, the constant threat of an avalanche made sleep uneasy.[38] Unsurprisingly, it did not take long for physiological and psychological strain to compromise the soldier's ability to follow orders and adhere to training practices under fire. Indeed, it was common early on for officers to observe erratic behavior, particularly in the form of friendly fire. But the men were not just on edge—they were unprepared to conduct a fighting action across rugged, mountainous terrain that seamlessly wove thick forests with sharp drops. Here, coordination proved highly challenging. Reporting on an effort to take control of Mount Coston (1,590 meters) in mid 1915, an Italian major described the process of rapid

[34] Tunstall, *The Austro-Hungarian Army*, 3-11.
[35] Martin Clark, *Modern Italy: 1871 to the Present* (London: Pearson Education, 2008), 212
[36] Isnenghi and Rochat, *La Grande Guerra*, 161-68.
[37] Alfredo Ortali, *Dalla Romagna alla Marmolada per un Ideale Repubblicano: Diario di Guerra,* ed. Andrea de Bernardin (Udine, Italy: Paolo Gaspari, 2008), 28.
[38] Ibid., 30.

"fracturing" and "amalgamation" which grounded his battalion a few minutes into the prescribed operation.[39]

It should come as no surprise that early engagements proved disastrous for both sides. Throughout the first months of war and beyond, it was not uncommon for entire battalions to be lost in an offensive action.[40] These staggering losses were particularly disastrous for two reasons. First, the sheer pace of attrition placed immense pressure on recruitment. As men died at alarming rates, more were needed to take their place.[41] Second, and perhaps more critically, initial battles tore through the experienced leadership of both armies. Neither fire nor nature, after all, distinguished between an infantryman and an officer—war in the Dolomites was a Darwinian selection mechanism in which only a very select few could survive. It wasn't long before units found themselves leaderless, and a real vacuum of talent began to take hold.[42]

Obsolete Preparations

The early struggles of the Austrian and Italian armies in the Dolomites are particularly surprising and difficult to explain in light of pre-war European war planning. As is by now widely accepted, the Great War was not an impromptu conflict. It was a war for which the great European powers had been preparing for decades. Though Europe experienced a nearly fifty year-peace following the Franco-Prussian War of 1870-71, its powers were dragged into increasingly vicious and highly militarized competition. This peace, so critical to the development of modern liberal society, was thus an "armed peace."[43]

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[39] "Presa del 'Monte Coston' (1915)," n.d., Fondo Studi e Documenti, MS.21, MSIG.
[40] "La Notte di Sangue del Forte Pozzacchio," June 29, 1916, Fondo Studi e Documenti, MS.28, MSIG.
[41] Oberkommando 6. Armee, "Ausbildung hinter der Front," September 27, 1916, AT-OeStA/KA NFA BK IBrig/GebBrig 51. SchBrig 603, OSV.
[42] K.u.k. Armeeoberkommando, "Einteilung von KavOffz. bei der Infanterie," January 26, 1915, AT-OeStA/KA FA NFA DK ID 48. ID 2638, OSV; "Presa del 'Monte Coston' (1915)," n.d.
[43] Isnenghi and Rochat, *La Grande Guerra*, 46-47.

As a dangerous arms race began to unfold, extensive war plans were drawn up by all. The Germans were engineering a plan for a two-front war against France and Russia as early as 1891, when Count Alfred von Schlieffen assumed the role of Chief of the German General Staff (*Großer Generalstab*).[44] Both the Austrians and the Italians (who were part of the Triple Alliance up until 1915) were to play an important role in the Schlieffen Plan. As the Germans completed "a wide turning movement of the French forces through the Flanders Plain" in Belgium, the Italians would hit the French on their lower flank, moving through the south to bolster the German attack. At the heart of Italy's participation in the plan was drawing French forces away from the north. To do so, the Italians would bypass Switzerland (whose neutrality the Germans were particularly keen on preserving), travel along Austrian railways and link up with German forces along the Rhine, ready to move in their opposite direction. This plan was discussed as early as November 1891, when the Italians received German surveys of French fortifications and detailed invasion routes.[45] Austria, meanwhile, was to attack Russia in the East in an attempt to stall Tsar Nicholas II's forces as the Germans completed their pincer maneuver in the West. The attack would start in eastern Galicia and move towards central Poland.[46] Most striking about these plans is the meticulousness with which they were designed—the Central Powers had gone so far as to agree on the the exact timetable on which trains would run, the number of locomotives that would be required, and the number of railway wagons necessary to transport an estimated amount of materiel.[47]

[44] William R. Griffiths, *The Great War* (Wayne, NJ: Avery Publishing Group Inc., 1986), 13.
[45] Griffiths, *The Great War*, 13-14; John Gooch, "Italy," in *The Origins of World War I*, ed. Richard Hamilton (Cambridge: Cambridge University Press, 2003), 211-13.
[46] Günther Kronenbitter, "Austria-Hungary," in *The Origins of World War I*, ed. Richard Hamilton (Cambridge: Cambridge University Press, 2003), 36-37.
[47] Gooch, "Italy," 212; Kronenbitter, "Austria-Hungary," 33-35.

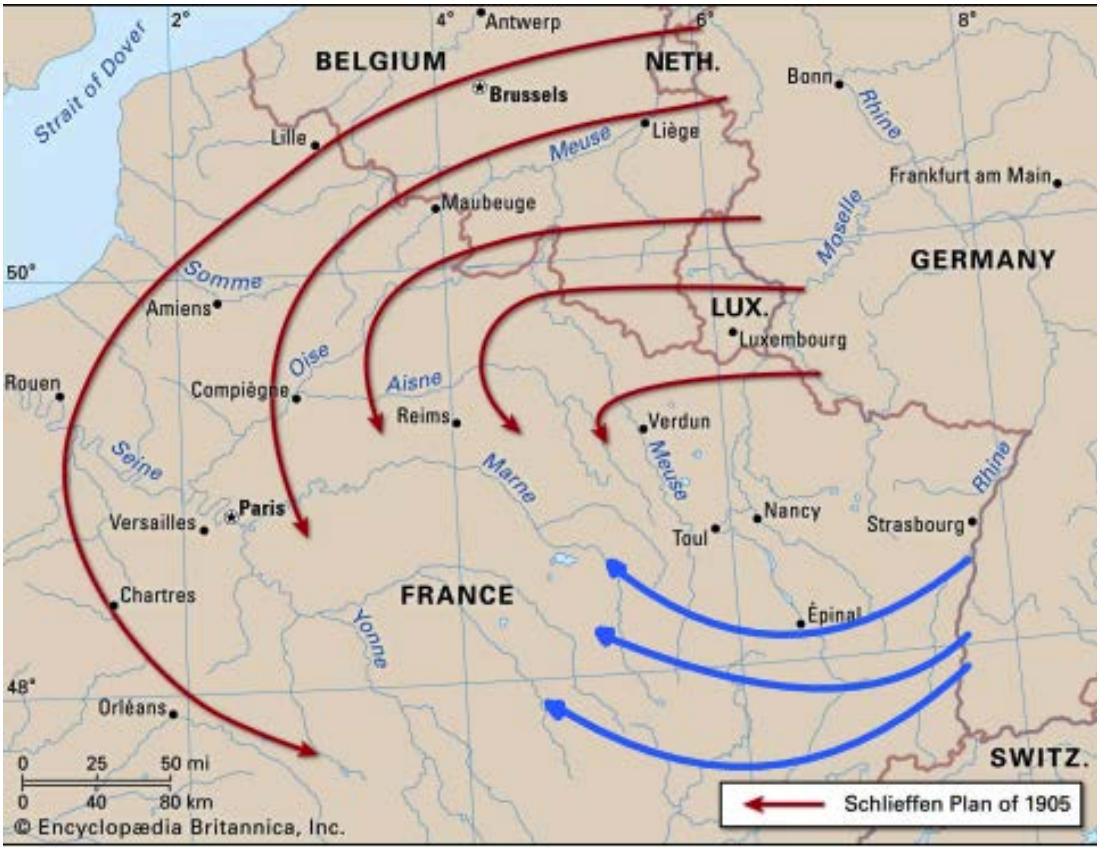

Figure 2 - The Schlieffen Plan, 1905 (Italian lines of attack in blue)[48]

The geographic focus and structure of the Schlieffen Plan would seem to suggest Italy and Austria-Hungary prepared for a war they would fight together, away from the Italian front. Can this explain their initial struggles in the Dolomites? Though superficially plausible, the reality is more complex. Italian and Austro-Hungarian officials had been preparing for war with one another long before 1914, regardless of the fact that they remained tied under the Triple Alliance. The history that stood between them was simply too great to ignore. On the one hand, Italy had never fully recovered from its failure to seize Trento and Trieste during the Third War of Independence in 1866.[49] At the turn of the century both cities remained deeply embedded in national imagination as the final, unredeemed pieces of a still-incomplete unification process. On the other hand, the

[48] "Schlieffen Plan," *Britannica*, accessed March 2, 2025, http://britannica.com/event/Schlieffen-Plan.
[49] Thompson, *The White War*, 90-95.

Austro-Hungarians saw the Dolomites, and in particular Tyrol, as a natural extension of their empire, a land which had served as their southwestern frontier for centuries. There were more political concerns at play as well. Both Rome and Vienna, for example, believed the Balkans to be essential to future security. Italy was particularly keen to control the Adriatic coast, which it viewed as necessary to project power across the Mediterranean and into North Africa. Austria, meanwhile, viewed control of the region as urgently needed to stem Slavic nationalism and Russian expansionism.[50]

As these concerns began to gain traction, war plans started to shift. In Rome, attention turned ever more towards the possibility of operations in the east.[51] In 1902, a secret pledge of neutrality was signed with the French. Two years later a general staff ride in which the Austrians were assumed to have attacked from the northeast was completed.[52] Then, starting in 1908, extensive efforts were undertaken to prepare against an Austro-Hungarian attack from the east. Over the next six years Italy would spend nearly 260 million *lire* (approximately $50 million at the time) to enhance and develop fortifications along its northeastern frontier, where military investment in the 19th century had been so scant that a single fort covered over 600 kilometers of border.[53] By as early as 1911, the Italians were in possession of a detailed plan for war with Austria-Hungary, complete with a railway timetable which predicted a full mobilization window of 21 days and a precise estimation of how many divisions to field.[54] The plan envisioned a primary force driving eastward against the Isonzo and towards Trieste, and a secondary, smaller, force protecting its rear flank by pinning the Austro-Hungarians down in the Dolomites.

Austro-Hungarian preparations were even more detailed. Unlike Italy, Austria-Hungary had to contend with the possibility of fighting a war along three, potentially four, fronts. For a variety of

[50] Ibid., 12-23
[51] Michael Palumbo, "Italian-Austro-Hungarian Military Relations Before World War I," in *Essays on World War I*, ed. Samuel R. Williamson, Jr. and Peter Pastor (New York: Columbia University Press, 1983). 38-45.
[52] John Gooch, *Army, State and Society in Italy, 1870-1915* (London: MacMillan Press, 1989), 122.
[53] Piero Pieri, *L'Italia nella Prima Guerra Mondiale: 1915-1918* (Torino: Giulio Einaudi editore, 1965), 23; Gooch, "Italy," 215.
[54] Gooch, "Italy," 217-20.

ethnic, political and historical reasons, the Austro-Hungarian Empire held some degree of animosity with Italy, Russia, Serbia and Romania (effectively all its neighbors bar Germany).[55] Its plans reflected the complexity associated with this unfortunately geopolitical reality. Shifting alliances and a delicate balance of power demanded consideration of multiple scenarios. Four separate war plans had thus been conceived by 1913—plan "I" (for war against Italy), plan "R" (for war against Russia), plan "B" (for war in the Balkans against Serbia), and a separate contingency plan for war against Romania.[56] In total, 48½ infantry divisions would be deployed as part of three army groups, A-Group, B-Group, and Minimal Group Balkans. The first would be deployed along either the Russian or the Italian front, the second to the Balkans first and later to either Russia or Italy depending on necessity, and the third, as the name suggests, to the Serbian frontier.[57] Crucially, plan "I" foresaw a drive through the Dolomites and into the Po Valley, the extended plain stretching across northern Italy.[58]

The Austrian and Italian armies, then, had long been ready for war when hostilities broke out between them in 1915. The military institutions from which they had developed were well-oiled machines with an extensive history of planning and preparation. This is what makes their initial struggles in the Dolomites so perplexing. The forces which deployed to this sector of the Alps appeared utterly unprepared not just for mountain warfare, but for war more generally. They repeatedly stumbled into elementary mistakes and struggled to find their footing for more than a year, their manicured logistics ground to a halt within a matter of days. This was not the performance of two armies that, as we have seen, had been refining timetables and deployment levels for more than two decades. If anything, it looked like the performance of two forces plunged into an unforeseen conflict neither had had time to prepare.

[55] Tunstall, *The Austro-Hungarian Army*, 6-15.
[56] Kronenbitter, "Austria-Hungary," 33.
[57] Graydon A. Tunstall, *Planning for War against Russia and Serbia: Austro-Hungarian and German Military Strategies, 1871-1914* (New York: Columbia University Press, 1993), 55-135;
[58] Ibid., 32-33.

But if preparation was not the problem, then what explained the amateurism of 1915? The depth of the crisis experienced by the Austro-Hungarian and Italian armies points towards a more fundamental, existential dissonance at the very core of the two institutions—an incompatibility between theoretical design and operational realities.

The German Question

The armies which mobilized to the Dolomite frontier in 1915 were derived from an exceptional, highly formalized template—the German military. In the half a century preceding the outbreak of the First World War, the Germans had worked to establish "the proper relation between statesmanship as an art and war as a craft."[59] The process began with Prince William of Prussia, who became king in 1861. Throughout his reign, William spearheaded a politically complicated though ultimately successful expansion of the military sphere. The king envisioned a German union under Prussian stewardship, and such ambition demanded a reliable, efficient fighting force. As reform and enlargement became a priority, a series of wars revealed the importance of the military as a political instrument. In particular, remarkable success in the Danish War of 1864 and the Austrian War of 1866 proved the "centrality of armed force to the resolution of entrenched power-political conflicts," inevitably tying policy and war within Prussia's political consciousness.[60]

The ultimate affirmation of this connection would come with victory in the Franco-Prussian War of 1870-71. Carefully orchestrated by the German Chancellor Otto von Bismarck, the Franco-Prussian War returned war to the nation and its people. It did so in two ways. First, Prussian victory "showed that ultimately the conscript's army's numerical strength and high morale made it superior to the professional…army." The Prussian army was made mostly of conscripts and

[59] Gerhard Ritter, *The Sword and the Scepter: The Problem of Militarism in Germany*, trans. Heinz Norden, vol 1 (Coral Gables, Florida: University of Miami Press, 1969), 13.
[60] Christopher Clark, "Four Wars and the Struggle for Europe," in *Iron Kingdom: The Rise and Downfall of Prussia, 1600–1947* (Cambridge: Harvard University Press, 2009).

reservists, whereas its French counterpart consisted of aristocratic career officers and professional soldiers.[61] The destruction of the latter at the hands of the former convinced Europe that professionalization alone was not enough in the age of modern warfare. Second, the Franco-Prussian War invited national participation in a way no conflict had done since 1815. Bismarck's machinations—the chancellor released an edited version of a Prussian royal cable which insulted and belittled a French ambassador—had baited France into declaring war unprovoked, stirring rage and frenzy across the northern and southern German confederations. When King William I returned from a diplomatic summit, he was greeted by rapturous crowds calling for war.[62] Even keener to participate in military affairs would be the French people a few months later, when the Prussians, in deciding to besiege Paris and present humiliating ceasefire terms, set off a wave of national resistance. What followed was a "people's war," a total war or *guerre à outrance* fought with zealous men recruited through mass conscription.[63] A war whose outbreak and course eerily foreshadowed the mobilizations of 1914.

By bringing to its knees France's highly professional army and inviting civilian society as a stakeholder in its outcome, the Franco-Prussian War at once transformed contemporary understandings of war and presented large-scale warfare as a critical tool of national policymaking. But these changes may not have been permanent had it not been for the fact that they had coincided with a process of national unification. For the Prussians, the mass conscript army had served as the catalyst for German unity.[64] And to onlookers, this endowed this particular type of military organization with an inestimable amount of credibility. For example, the first chief of staff of the Italian army, Enrico Cosenz, was a known student of the Franco-Prussian War, and an admirer of the military model it had produced. Cosenz believed "the secret to German success lay in the

[61] Stig Förster, "Facing 'People's War': Moltke the Elder and Germany's Military Options after 1871," *Journal of Strategic Studies* 10, no. 2 (1987): 211.
[62] Clark, "Four Wars."
[63] Förster, "Facing 'People's War'," 212-13.
[64] Griffiths, *The Great War*, 13.

dominating direction of the military machine," and he would shape most of Italy's early military institutions accordingly.[65]

As for the Austro-Hungarians, they had been adopting German practice and organization even before the events of 1871. Inspired by their crushing defeat at the hands of the Prussians at Königgrätz in 1866, they had moved to rapidly enlarge the military sphere in the second half of the century.[66] This set off an intense confrontation between reformers, who believed the military should be a responsibility of parliament, and traditionalists, who sought to preserve the military as an institution of the elite. The ultimate victory of the reformers (who secured control of the military budget and significantly empowered the position of war minister), together with the move to universal conscription following the establishment of the Dual Monarchy in 1867, completed the shift to the German model, so that by 1874 the Austro-Hungarian Empire had fully embraced a new representation of war as both massive and fundamentally connected to public policy.[67]

At the turn of the century, then, Austria-Hungary and Italy were primed to embrace a model of military organization grounded in mass warfare. And so they did. Above all, this model prized size and quantity as determinants of victory. This was as much reasoned choice as it was a virtue of geopolitical necessity. Because the political and economic features of the 19th century were distributive (that is, nearly all European powers benefitted in some way from the Industrial Revolution and witnessed a broadening of the public's political sphere), the structural reorganization of the army and the integration of contemporary military technologies were possible for most. Europe's deeply interconnected and frenetic diplomatic network additionally ensured changes in doctrine or internal composition could not be hidden for long. As a result, the "armies of…Europe

[65] Gooch, "Italy," 202-3; Massimo Mazzetti, "Enrico Cosenz, Scrittore Militare," in *Il Pensiero di Studiosi di Cose Militari Meridionali: Atti del Congresso* (Rome, 1978), 100-5.
[66] Clark, "Four Wars." The Battle of Königgrätz, fought on July 3, 1866 as part of the Austro-Prussian War, saw the near-total defeat of the Austrian army at the hands of Prussia. Led by Helmuth von Moltke the Elder, the Prussians encircled the enemy and inflicted catastrophic casualties on the Austrians, who by the end of the battle had lost over 44,000 men (nearly a third of their forces).
[67] Gunther E. Rothenberg, *The Army of Francis Joseph* (West Lafayette, IN: Purdue University Press, 1976), 74–85.

were essentially trained alike, armed alike, and equipped alike."[68] War planners were thus presented with a confounding dilemma—they could choose to limit the size of their armies to optimize efficiency and performance, but only for minimal marginal gain.

They chose instead to invest in numbers. In the first years of the new century, European defense spending experienced an remarkable rise:

Figure 3 - European military spending by country, 1900-1914[69]

Country	**Defense spending (in £ millions, constant prices)**		**Per capita defense expenditure (in £ annual averages)**	
	1900	*1913*	*1900-4*	*1900-13*
Russia	54.2	101.8	0.45	0.49
Germany	72.9	117.8	0.96	1.43
France	48.5	65.9	0.91	1.63
Great Britain	133.0	75.7	2.33	1.59
Austria-Hungary	21.2	42.4	0.47	0.72
Italy	16.0	39.6	0.44	0.80

The arms race produced armies of colossal size. By 1914, Germany's regular active duty forces consisted of 850,000 men and 50 divisions, Austria-Hungary's of 475,000 men and 48 divisions, France's of 800,000 men and 47 divisions, Italy's of 250,000 men and 25 divisions, and Russia's of nearly a million men and 70 divisions.[70] Each army could also count on an enormous base of trained reservists by way of universal conscription. This meant that Germany's forces, for example, could be upped to 1,700,000 men within two weeks of mobilization. Most other armies

[68] Dennis Showalter, "The Retaming of Bellona: Prussia and the Institutionalization of the Napoleonic Legacy, 1815-1876," *Military Affairs* 44, no. 2 (April, 1980): 59.
[69] David Stevenson, *Armaments and the Coming War: Europe, 1904-1914* (Oxford: Oxford University Press, 2002), 3-6.
[70] Isnenghi and Rochat, *La Grande Guerra*, 50.

maintained a similarly-sized reserve force of around a million men, with the exception of France, whose decision to raise the term of service by a year in the early 1900s provided her with over four million reservists.[71]

This obsession with quantity as a marker of power infected the highest echelons of Italian and Austro-Hungarian policymaking. For Italy, the question was a particularly sensitive one. Its army had languished behind that of its partners ever since the signing of the Triple Alliance in 1882, when it could field only 12 corps against the 16 of Austria-Hungary and 18 of Germany. A decisive attempt to close this gap was made in the following decades. Military spending became an absolute priority, to the point it risked sinking the national economy on more than one occasion. Between 1862 and 1913, in fact, it amounted to more than what was spent on all other ministries combined.[72] Volume remained a pressing issue up until the very outbreak of war. In a letter to the Italian Ministry of War in June 1914, Alberto Pollio, then Chief of Staff of the Italian army, anxiously stressed that recent "Austro-Hungarian military preparation and consolidation" demanded the government "increase Italy's military capacity" by expanding its standing force or risk total destruction in a matter of weeks.[73]

Matters were even worse and anxieties more pronounced for the Austrians. Emperor Franz Joseph I, who had ruled Austria-Hungary since 1848, had made expanding the size of his army an absolute priority at the turn of the century, but he did not always possess the political or financial bandwidth to do so. A series of financial crises in the second half of the 19th century had constrained the Empire's liquidity, sharply limiting its discretionary spending.[74] Political in-fighting between the Austrian and Hungarian factions of the Dual Monarchy likewise marred most initiatives

[71] Griffiths, *The Great War*, 7-13.
[72] Pieri, *L'Italia nella Prima Guerra Mondiale*, 63.
[73] "24 June 1914: Pollio to Italian Ministry of War," in *The Origins of the First World War: Diplomatic and Military Documents*, ed. Annika Mombauer (Manchester: Manchester University Press, 2013) 145-46.
[74] Kronenbitter, "Austria-Hungary," 41-42.

to expand recruitment and establish a permanent, independent reserve army.[75] To Franz Joseph and the Austrian General Staff, however, the expansion of the army was an obsession, a problem that was nothing short of an existential issue. So deep was this obsession, that in 1905, after yet another spending bill was struck down by parliament, they prepared plans for an invasion of Hungary. Fortunately, the Balkan War of 1912-13 revealed the decadent state and far too limited size of imperial forces and convinced most skeptics of the need for an important build-up; by early 1914 parliament had passed a bill raising annual military expenditure by 41 million crowns and peacetime strength on land to 600,000.[76] With it, the nationalization of a military model consumed by quantitative concerns had been completed.

Why, though, was this model so fundamentally incompatible with mountain warfare? Perhaps most intuitively, because it could not function in the absence of a robust, reliable and contiguous logistical nervous system. Railways were particularly important to this system. They were what had brought the mass army into being. In fact, they were in a way a necessary condition for the numbers-focused posturing which infected European military thinking in the early 20th century. Millions of men were no good in a highly mutable geopolitical landscape if they could not be mobilized within a matter of weeks and thereafter supplied. The operational capability of the contemporary European army thus relied almost entirely on a secure railway network. Without it, men and guns were useless. Both the Austrians and the Italians understood this simple fact. The Italians, for example, increasingly convinced an attack from Austria-Hungary would come from the northeastern Isonzo frontier, aggressively developed a railway system around Venetia.[77] The

[75] David G Hermann, *The Arming of Europe and the Making of the First World War* (Princeton, New Jersey: Princeton University Press, 1996), 33. The Austro-Hungarian Empire was the only European power of the time that did not possess an independent reserve army. Its reserves were rather scattered across units and divisions, which significantly hindered their ability to mobilize rapidly and coherently. For further discussion of the Austro-Hungarian military's structure before the outbreak of the First World War see, Tunstall, "The Austro-Hungarian Army," in *The Austro-Hungarian Army*.
[76] Stevenson, *Armaments and the Coming of War*, 279-280.
[77] Ibid., 246.

Austrians conducted undercover staff rides in Galicia to assess whether railways would be capable of sustaining an offensive into the Russian hinterland.[78]

But the state of railway infrastructure in the Dolomites could not support this vision. Much of the Italian peninsula was characterized by a "dearth of railways." And though for the interior this may not have mattered much, it would prove critical in the North. Under the original Schlieffen Plan, Italy had signed a railway convention with Austria-Hungary in 1888. The convention stipulated that in the event of war in the West, Italian troops would utilize three major Austrian railway lines to bypass Switzerland, move through the Alps, and link up with German forces on the Rhine.[79] This agreement, together with Italy's diplomatic ambivalence up until 1914, inevitably reduced incentives for the government to build infrastructure of its own in the North, where it would ultimately find itself fighting.

The situation was no better in Austria-Hungary. Across the empire, railways were relatively scarce, in part because the poor economic environment of the Dual Monarchy discouraged foreign investment. There were more subtle issues as well. In 1914, the General Staff chose to limit military trains to 50-car, 100-axle units rather than the 150–200 axle trains used in peacetime. While this matched the size of individual infantry battalions and thus simplified unit transport, it came at the cost of slower movement. The decision, driven partly by the limited number of railway lines available, ultimately hindered the speed at which the army could be deployed. This, together with the Railway Office's (*Eisenbahnministerium*) decision to have all trains run at the speed of the slowest ones in order to facilitate coordination, meant whatever supplies, artillery pieces and men the Austrians could muster took ages to reach the front line. Fighting in the Dolomites, as along most other fronts

[78] Kronenbitter, "Austria-Hungary," 28.
[79] Gooch, "Italy," 212.

in which the Austro-Hungarian army had been deployed, bogged down in part because these lengthy supply times made any sort of fast, covert attack extremely difficult to execute.[80]

There are thus two problems to which we can trace the initial challenges encountered by the armies in the Dolomites. The first was that said armies had been engineered to function within a narrow operating window whose limits were defined by logistical infrastructure, and the backwater in which they would find themselves fighting fell far outside this window. The Dolomites were grossly underdeveloped, even by Italian standards. They were sparsely populated (there were less than fifty inhabitants per square kilometer nearly everywhere), predominantly rural (less than twenty percent of the population lived in urban areas), and with little industry to speak of (over seventy percent of economic output at the turn of the century came from agricultural activity).[81] Beginning in the second half of the 19th century, the region had moreover seen many of its own leave, either for larger industrial areas like Milan and Rome or for countries like the United States. The result was that by the outbreak of war the Dolomites were among the poorest and most backward of Italy's regions, with little industry or infrastructure to speak of.[82] All this made decades of war planning premised on the availability of logistical infrastructure obsolete, meaning what the two armies were met with in their first year of war was a type of conflict they neither knew how to fight nor had the capabilities for.

[80] Tunstall, *The Austro-Hungarian Army*, 50-51.
[81] Diego Leoni, *La guerra verticale* (Giulio Einaudi Editore, 2015), 32-38; Cesare Battisti, *Il Trentino: Guida Pratica* (Trento, Italy: Soc. Tipografica Ed. Trentina, 1910), 24-28.
[82] Clark, *Modern Italy*, 197-98; Di Martino and Cappellano, *La Grande Guerra*, 338-40.

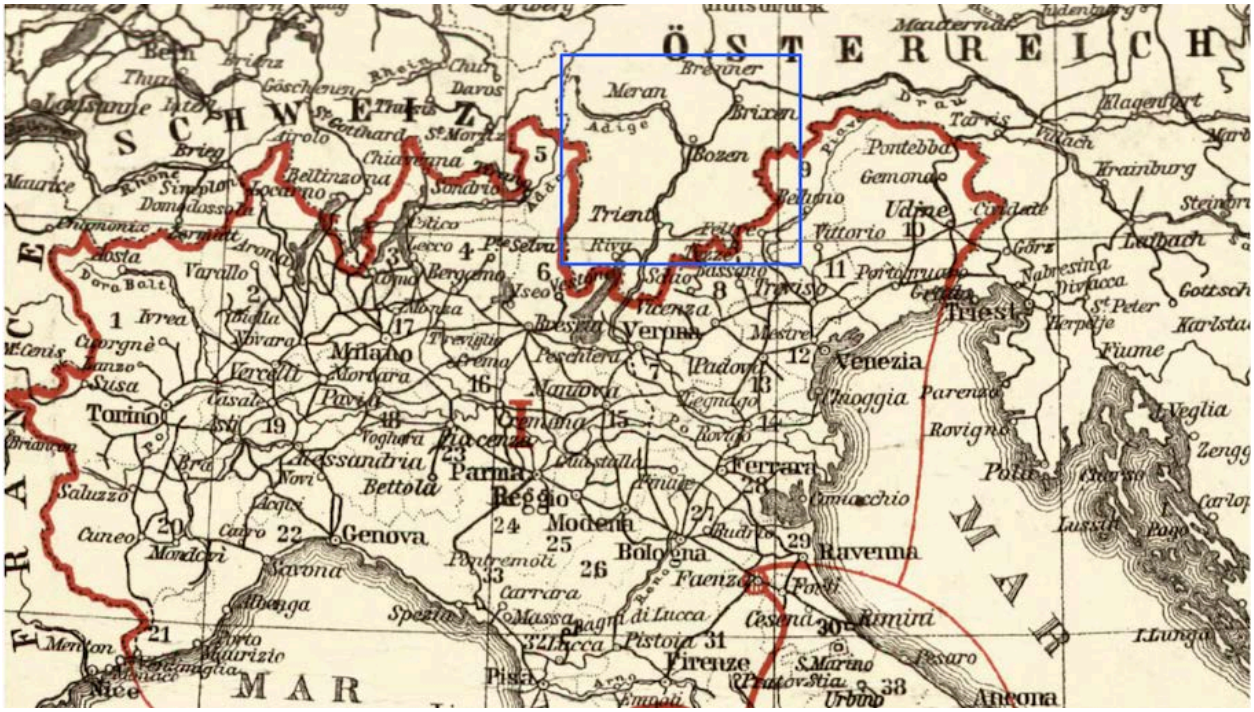

Figure 4 - Italian railway network, 1908. Note the absence of lines in the Dolomites (identified in blue)[83]

The second problem was that the logistical deficiencies which marred the Austro-Hungarian and Italian armies were general rather than theater-dependent. It was not just that there were no railways in the Dolomites, but that those across the country were too few and the trains which ran on them too slow. Hence there was no solid logistical foundation upon which to develop and improve infrastructure in those critical areas where it was most needed.

But this discussion reveals a further, more profound issue in the structure of the two armies which was sure to doom any initial campaign. As has been discussed, Austria-Hungary and Italy had modeled their military institutions along those of the German army (*Deutsches Heeres*). And to be sure, this afforded important benefits. The German model had proven remarkably successful in a number of wars, and stood at the forefront of European military development up until the outbreak of war. Yet it was, at heart, German. That is, it was a product of a deeply idiosyncratic,

[83] Waldin, *Milan (Milano) Environs Interurban Tramway and Railway Network Map*, 1908, Wagner & Debes, https://store.avenza.com/products/milan-milano-environs-interurban-tramway-and-railway-network-map-1908-waldin-map.

context-specific strategic reality. Take, for example, the railway and its role at the heart of contemporary war planning. The Germans prized it and invested in it so extensively for one particular reason. Under the Schlieffen Plan, the possibility of a two front war justified—indeed, warranted—the development of an army around a particular logistical tool.[84] Neither the Austrians nor the Italians could relate to this logic. Italy had always expected to fight a one-front war, whether that be against the French or the Austrians. Austria-Hungary, though well aware it would likely fight a war along multiple fronts, had no need (at least in its war plans) to rapidly shift huge numbers from one theater to another. Rather than massing nearly all military capabilities against one enemy at a time, Austrian planners provided for independent army groups of similar size to be assigned to each front.

These differences in expectation drew Austria-Hungary and Italy into a logistical paradox. While the Germans could build logistical infrastructure with the guarantee it would take them to the right place at the right time, their allies could not. The railways they built were not, as in the German case, appropriate preparation, but an effective restriction on the operational range of their armies. Because neither considered the Dolomites a likely epicenter of conflict, development efforts were directed elsewhere, with the result being a near-total absence of appropriate infrastructure along this front when fighting began in 1915. The railway was thus a "Mephistophelian gift"—its ability to sustain military expansion too enticing to resist but its immovable nature a dangerous limitation if ignored.[85]

The Ghost of Schlieffen

From this Janus-faced quality of modern logistics emerged a host of issues. A near-total reliance on fixed railway systems convinced European war planners that war would be quick,

[84] Terence Zuber, *Inventing the Schlieffen Plan: German War Planning, 1871–1914* (Oxford: Oxford University Press, 2002), 154-56.
[85] Showalter, "The Retaming of Bellona," 59.

decisive and dynamic. Or better, the planners were forced to come to this conclusion because of said reliance. This was to be a war of massive proportions, proportions the European railway network could only sustain for a brief amount of time before being overwhelmed (along with the continent's agricultural and industrial base).[86]

Yet the fighting conditions the Austrian and Italian armies encountered in the Dolomites prohibited both dynamism and decisive action. Scarce supplies (in particular a lack of ammunition), deadly natural phenomena, and general inexperience produced a conflict of highly variable and asymmetric intensity. In winter, as the armies dealt with freezing temperatures, dwindling food supplies and the ever-present threat of avalanches, weeks could go by without any meaningful engagement.[87] Daily situation reports at the battalion and divisional level confirm this, discussing weather conditions and avalanche casualties far more often than military developments.[88] Where fighting did take place, it was often low in intensity, characterized by small-piece, irregular artillery fire and sporadic skirmishes between reconnaissance patrols.[89]

Aside from dumbfounding the Italian and Austrian commands, this lethargic and unpredictable form of warfare created tangible deficiencies in the operational readiness of the men. It put units to sleep, goading them into lowering their guard and relaxing defenses. So convincing was such deceit that it was not uncommon for newly arrived men to display an almost boyish, carefree attitude, particularly if deployed in summer time. The young private Paolo Marconi, a volunteer who had recently been called up to the Lagorai sector of the Valsugana, commented on the rhythm of life in the Dolomites in April 1916:

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[86] Isnenghi and Rochat, *La Grande Guerra*, 59-61; Hermann, *The Arming of Europe*, 22.
[87] Koner, "La conquista del Passo della Sentinella," 1937.
[88] K.u.k. XX. Korpskommando, [Telegram regarding Artillery Fire and Weather Conditions], October 14, 1917, AT-OeStA/KA FA NFA KK XX. Korps (neu) 2831, OSV.
[89] 29° Corpo d'Armata, [Report on Artillery and Patrol Activity], n.d., Fondo Esercito Italiano, 2.10, MSIG; 29° Corpo d'Armata, [Report on Artillery Activity in the Dosso Alto Region], 25 April 1917, Fondo Esercito Italiano, 2.10, MSIG.

> We lead an enviable, Robinson Crusoe-like life. The Grigno [river] is full of trout and crayfish, the woods rich in grouse and small birds, and chamois come out of their hiding places, nestled among the highest rocks. We live off hunting and fishing.[90]

It was easy for those who briefly visited the front to become enamored with this primordial, idyllic way of life. Writing as he was leaving the Dolomites after a short reporting trip in the summer of 1917, Rudyard Kipling fondly recalled:

> A turn of the downward road shut them and their world from sight—never to be seen again by my eyes, but he hot youth, the overplus of strength, the happy, unconsidered insolence of it all, the gravity, beautifully maintained over the coffee cups, but relaxed when the band played to the enemy, and the genuine, boyish kindness, will remain with me.[91]

This "relaxed" condition, however enchanting, created significant issues for military leadership. For example, Army Group Archduke Eugen—responsible for the Adamello sector of the front—reported to the Austro-Hungarian high command (*Armeeoberkommando,* or AOK) a few months into the war that it was struggling to keep "the offensive spirit of the troops…alive."[92] The effect of such latency in fighting spirit and combat readiness should not be underestimated. If men appeared stunned in early battles across the Dolomites it is in part because they had come to mistakenly believe that war in the mountains was not so bad after all.

It was not just the regular troops that were unprepared to fight in this environment. The mistaken belief that the war between Austria-Hungary and Italy would play out on the flatlands of the Po Valley, a direct result of the decision to model military organization around transportation infrastructure, had led both sides to dedicate little or no time to understanding how the topography

[90] Leoni, *La Guerra Verticale*, 362.
[91] Kipling, *The War in the Mountains*, 40.
[92] K.u.k. Heeresgruppenkommando Erzherzog Eugen, "Vorsorgen gegen fdl. Offensive," n.d., AT-OeStA/KA FA AOK OpAbt Akten 531, OSV.

of the Dolomites would influence tactical doctrine. That Italian battalions operating across the mountain range in 1915 received the same exact summary of offensive imperatives as counterparts stationed on the flat Isonzo front reveals the degree to which such considerations had been ignored in preparing for the war.[93]

Officers thus proved woefully inadequate at orchestrating early operations. A German Alpenkorps report from the summer of 1915 pointed to this problem, stressing that it was concerned above all by "the unfamiliarity of [Austrian officers] with the terrain." "The [officers]," continued the report, "had not been adequately introduced to the landscape, which was a serious problem given the vast and rugged nature of the front."[94] It was a problem for various reasons. First, the broken topography of the Dolomites prohibited contiguous lines of defense, which most contemporary European tacticians had taken for granted over the past five decades of doctrinal evolution.[95] This assumption left Austrian and Italian officials scrambling to understand how they could fill and protect what were effectively holes in their front lines. The key, of course, was focusing on protecting geographical features like a *passo* or a *forcella*, both of which allowed the defender to watch over a critical juncture without needing to man it.[96] But it took the Austrians—who had been the ones to assume a defensive posture at the outbreak of hostilities—a while to appreciate these sort of tactical subtleties. For at least the first few months of the war, in fact, "passes and…strategically important peaks…were fortified but only lightly occupied."[97]

A second topographical feature which challenged the tactical awareness of contemporary officers was elevation. European powers had entered the war believing they were fighting in the age of the offense. As they looked to recent history, they could not avoid concluding that a defensive

[93] Regio Esercito Italiano, CS, "Quadro sintetico delle norme per l'attacco," 1915, Fondo Esercito Italiano, 1.3, MSIG.
[94] "Ueberblick über die Tätigkeit des Bayer. Schneeschuhbataillon K2 1," n.d.
[95] Hermann, *The Arming of Europe*, 24-27.
[96] The *passo* is best understood as the equivalent of a mountain pass. It is a road, usually of pre-modern and rugged form, which connects two peaks across a valley. The *forcella* is a narrower, more technical saddle which often sits between steep peaks.
[97] "Ueberblick über die Tätigkeit des Bayer. Schneeschuhbataillon K2 1," n.d.

approach to warfare was certain to bring defeat. The great Prussian victories of the late 19th century, after all, had been decided by aggressive attack. More recently, Japan had won the Russo-Japanese War of 1904 with relentless commitment to offensive logic, even in the face of severe casualties.[98] On level playing field, the reasoning went, the onslaught and sheer preponderance of an infantry attack preceded by well-coordinated artillery fire would simply overwhelm stationary defences.[99] In 1914 such logic would turn out to be exceedingly optimistic.

Even more so when terrain was not flat but mountainous. Holding the high ground presented enormous advantages for the defender, who could stop an attack dead in its tracks with a fraction of the forces needed to do so on flat land. This feature of mountain warfare was particularly problematic for the Italians, who found themselves devoid of high ground almost everywhere along the front but refused to disavow their offensive bias. Such obstinacy, together with the an unjustified confidence in frontal assaults, turned early battles into catastrophic encounters which decimated many of the Regio Esercito's best.[100]

The problem, then, was one of military philosophy. From the dominance of the offensive to the centrality of the railway in war planning, the armies deployed to the Dolomites in 1915 remained entrenched in a fragile understanding of warfare whose relevance hinged on a series of equally fragile assumptions. The Dolomites exposed such fragility and the operational weaknesses it inevitably entailed, but they also revealed that the causes of Italian and Austrian struggles in the early phases of the war were not so much a result of faulty doctrine as they were of an ontology of war inadequate for the modern world. Put differently, the observed deficiencies in tactical approach should be understood as a symptom of something greater, of an inappropriate interpretation of the modern conflict and its intangible phenomena.

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[98] Hermann, *The Arming of Europe*, 22.
[99] Jack Snyder, *The Ideology of the Offensive* (Ithaca, New York: 1984), 22-31; Griffiths, *The Great War*, 8-12.
[100] Gooch, "Italy," 200.

Nowhere was this dynamic more evident than in the relationship between command, officer and infantryman. As noted, the feature tying Europe's armies before 1914 was an unshakeable belief in size as the ultimate determinant of victory. An important by-product of this belief was an effective negation of the infantryman's quality as an issue for officials to consider. That is, if the numerical strength of a fighting force was the be-all-end-all, the raison d'être of said force, then whatever made up such strength was useless beyond its quantitative value. Men, their skills and interpersonal relationships did not matter.

Officials espoused such logic at all levels. In Austria, Archduke Franz Ferdinand repeatedly questioned the value of training and field regulations in the years before 1914 because he did not "[believe]...in the soldier's capacity to judge the situation on the battlefield properly."[101] Such belief was on full display in the Dolomites, where the lack of appropriate tactical knowledge and initial operational challenges encouraged generals bent on vindicating the doctrine of numerical strength to use men as sacrificial lamb. In a report describing an attack on Mount Meletta (1,704 meters) in early 1916, Army Group Eugen explained to AOK how the casualties its regiments had accrued were necessary, part of a "self-sacrificing" act which would soon break the enemy's defense. Men, in short, were expendable. What counted were not their abilities on the battlefield but how they contributed or detracted from a larger quota. As the same report put it, "the number of losses is a measure of the performance of the troops."[102]

This crude but also simplistic understanding of warfare made it impossible to capitalize on the few appropriate tools the Austrian and Italian armies possessed. Before the war, both the k.uk. Armee and the Regio Esercito had organized and developed units designed to be particularly athletic, mobile and incisive. The Italian version of these early special forces were called *Alpini*, while

[101] Kronenbitter, "Austria-Hungary," 40.
[102] K.u.k. Armeeoberkommando, "Bericht über Erstürmung des M. Meletta und Castelgomberto," July 24, 1916, AT-OeStA/KA FA AOK OpAbt Akten 530, OSV.

the Austrian equivalent were known as *Kaiserjäger*. Both were made up of men recruited almost exclusively from small mountain villages, many of whom had been protagonists in the politicization of alpine sports before the war. As such, they were armed with a unique appreciation for the idiosyncrasies of the Dolomites, but also displayed an esprit de corps and level of unit cohesion perhaps unmatched throughout the rest of the Italian and Austrian armies. They were often trained in skiing, mountaineering, and climbing, moving with ease among the ice, snow and rock of the Alps which would ground so many of their peers.[103] So notable were their abilities that they often drew praise from the enemy. Writing in his diary in July of 1915, an Austrian officer fighting in the Passo della Sentinella sector observed, "There is no joking around with the Alpini of Cadore and the upper valley of Piedmont; they are strong, tenacious and determined mountain men no less able than our Kaiserjäger from Sexten." "Capturing a peak after the Alpini have nestled themselves there," he concluded, "is close to impossible."[104]

Sadly, most military officials proved incapable of recognizing such value. They remained hypnotized by the elusive idea of mass as a solution to their strategic problems, and treated these special units like all others. The result of this indiscriminate approach to management was more than just a missed opportunity. The *Alpini* and the *Kaiserjäger* were used indiscriminately on the front line of the war, suffering enormous casualties while the tactical advantages offered by their unique capabilities were largely foregone.[105] Over the first year of the war and beyond they were slowly decimated. By 1917, the Italians could no longer replace fallen *Alpini* because there were no men left to recruit from mountain communities.[106]

Talented officers suffered a similar fate for similar reasons. As in the case of the Kaiserjäger and the Alpini, an overly simplistic understanding of the army as a homogeneous bloc prevented

[103] Gianni Oliva, *Storia degli Alpini* (Mondadori, 2017), 106.
[104] Koner, "La conquista del Passo della Sentinella," 1937.
[105] Oliva, *Storia degli Alpini*, 103-4; Isnenghi and Rochat, *La Grande Guerra*, 161-62.
[106] Oliva, *Storia degli Alpini* 163.

most high-ranking officials from recognizing their value. Early directives in both the Italian and Austrian armies, for example, instructed officers to follow rather than lead their men into battle, signaling a lack of appreciation for the cohesion, encouragement and direction these men could provide to an attacking force.[107] The benefits of strong leadership on the field were so pronounced that many simply disregarded such orders. Reporting internally on an attack on Fort Pozzacchio (906 meters) in June 1916, the commanding officer of the XIX Battalion of the 1st Landschützen Regiment described the way he had led his men into battle and succeeded in taking the fort by encouraging constant movement and coordination through shouting orders. Yet the risks involved in such brazen operations were enormous, particularly because the armies had trained neither artillery nor infantrymen to operate behind officers. There was thus no cohesive framework within which the officer as a figure of leadership could fall. This caused chaos, and often death. Throughout the first year of war, both Austria-Hungary and Italy would lose some of their most talented officers, creating a talent gap they would struggle to fill until 1918.[108]

The struggle to appreciate the value of the officer suggests the armies not only assumed a one-dimensional understanding of the modern soldier, but also of the relationships which defined his life on the front. The latter, of course, was a product of the former—if troops were dehumanized as expandable chess pieces they could no longer be deemed capable of complex interaction. They existed as numbers in service of a greater strategic goal, not as men forming relationships with each other and their superiors. The leadership's active participation in this process of dissociation had a significant effect on the quality of its armies. It allowed generals to move troops from one sector to another and break up battle-hardened units with little to no hesitation.

[107] "I nostri metodi di attacco nel giudizio degli ufficiali dell'esercito nemico," July 31, 1916, Fondo Esercito Italiano, 1.3, MSG.
[108] "La Notte di Sangue del Forte Pozzacchio," June 29, 1916.

In doing so, it served as an important obstacle to the development of unit cohesion and vertical coordination. Men who survived battle together were tied by an indelible bond, but they could not capitalize on its advantages—better coordination, faster communication, greater trust and thus more propensity to assume risk—because usually separated before they could do so. Though unbeknownst to its command, this missed opportunity was of particular saliency for the Austrians, whose multi-ethnic army needed cohesion perhaps more than it needed ammunition. Of the 142 infantry regiments deployed by the Dual Monarchy in 1914 118 were bilingual; the remaining 24 were trilingual.[109] If there was anything that could consolidate a unit fractured by language and ethnicity it was battle.

* * *

The early struggles of the Austrian and Italian armies in the Dolomites were brought about by a complex process of institutional and conceptual development which played out over nearly half a century. Though the issues which plagued these armies were extremely practical (a poor logistical support system, an ensuing lack of supplies, or an inability to adapt to weather and terrain), they were rooted in the far less visible, far older practice of coordinating military theory across Europe and more specifically the Triple Alliance. The homogeneity in tactical and strategic thought which such practice imposed made it inevitable that Austria-Hungary and Italy would stumble through the first phases of a mountain war. It produced highly prescriptive war plans that could only work under a series of assumptions which had little to do with the strategic concerns of either the Austrians or the Italians.

The ultimate problem, therefore, was not, as some have claimed, an insurmountable difficulty in the nature of the Dolomites as a theater of war, but a refusal to question convention or be in any way inquisitive as to how the unforeseen could challenge doctrine. To be clear, total

[109] Tunstall, *The Austro-Hungarian Army*, 31-33.

confidence and unwavering belief in contemporary military theory were unique to neither the Austrian nor the Italian army. Indeed, they characterized most if not all of the European militaries of the time.[110] But the Dolomites, in their extreme and demanding form, revealed the rigidity and inadequacy of these dogmas even more harshly than the Western or Eastern front.

This was not a problem that could be fixed overnight. Nor could it be solved, as initial operations believed, by quantitative escalations. For the failures to be corrected and some degree of operational efficiency to be achieved, a true shift had to take place in the mind of the k.u.k. Armee and Regio Esercito. A new theory of warfare was needed.

[110] Griffiths, *The Great War,* 6-15.

CHAPTER TWO

A TALE OF TWO ARMIES

> Regard your soldiers as your children, and they will follow you into the deepest valleys; look upon them as your own beloved sons, and they will stand by you even unto death.[111]
>
> — Sun Tzu, ca. 5th century BCE

In the summer of 1915, Italian and Austrian forces converged on Mount Col di Lana (2,450 meters). Straddled between the peaks of the Lagazuoi (2,835 meters) and the Marmolada (3,343 meters), the Col di Lana and its surroundings stuck out amid the harsh topography of the Dolomites. All around this peak it seemed the traditional sight of jagged cliffs and lunar stone had been replaced with a more mellow, volcanic landscape of soft contours, grassy ridges and wide meadows.[112]

The fortunes of the Italian army hinged on control of the Col di Lana. The mountain, together with the neighbouring Mount Sief (2,424 meters), looked down on the highway to Bozen, a key strategic node without which the Adige Valley and Trento, the image of pre-war irredentism, could not be reached. The Austrians had held the Col di Lana and Mount Sief before the war, and had since controlled the highway with the use of light artillery positioned on both summits.[113]

The Italian attack began in July. It was slow and ineffective, mostly because the Austrians had been strengthening their defenses for weeks and enjoyed a significant height advantage. Yet the Italians did not relent, and in the coming months would launch over ninety frontal assaults. These attacks were suicidal, and they accrued horrific casualty rates. As Mark Thompson has put it,

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[111] Sun Tzu, *The Art of War*, trans. Lionel Giles (Leicester: Allandale Online Publishing, 2000), 44.
[112] Mario Vianelli and Giovanni Cenacchi, *Teatri di Guerra sulle Dolomiti: 1915-1917: Guida ai Campi di Battaglia* (Milano: Arnoldo Mondadori, 2006), 200-1.
[113] Mark Thompson, *The White War*, 201-3.

operations on the Col di Lana amounted to the equivalent of "a campaign to capture a cathedral spire by creeping along its roof-ridge, with 45-degree slopes on either side."[114]

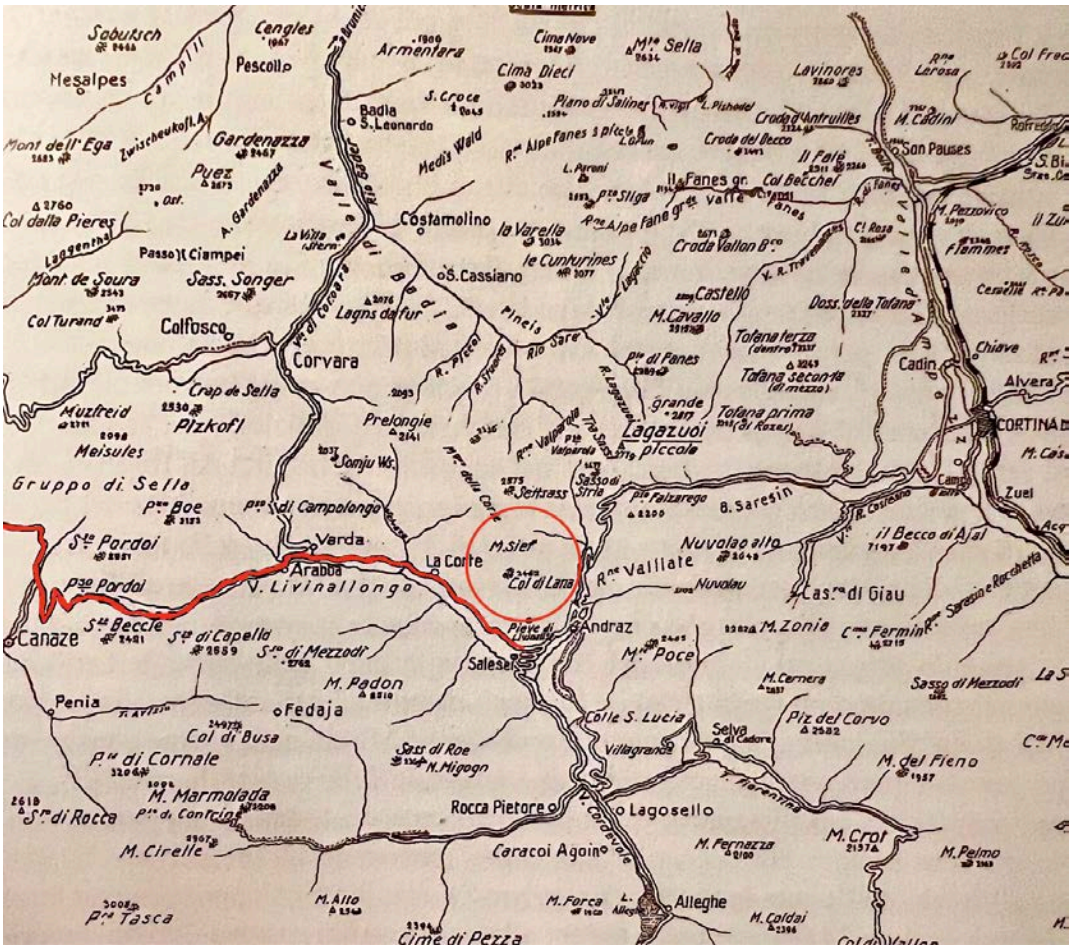

Figure 5 - The Col di Lana, Mount Sief, and the central Dolomites sector, with the highway to Bozen in red

Nevertheless, come early autumn the Italians had come to within fifty meters of the top of the Col di Lana. The attacks intensified, and the summit was eventually seized on a cold morning in early November.[115] The Austrian contingents watching from Mount Sief were stunned. A counterattack was immediately ordered, but quickly failed.[116] The Austrians, who had till now operated from elevated positions, suddenly found themselves at a sharp disadvantage. Yet the

[114] Ibid., 201.
[115] Paolo Gaspari, *La Prima Estate di Guerra nel Racconto di Ricciotti Garibaldi e di altri Ufficiali della Brigata 'Alpi'*," vol. 1 of *Marmolada e Col di Lana* (Udine, Italy: Paolo Gaspari editore, 2008), 96-110.
[116] K.u.k. 96tes Infanteriebrigadekommando, "Fortsetzung des Berichtes bis zum Italien und Wiedergewinnung der Col di Lana-Spitze," Op. Nr. 4518, 16–32, n.d., AT-OeStA/KA FA AOK OpAbt Akten 527, OSV.

summit of the Col di Lana could not remain in the enemy's hands. As one colonel put it, it was "a matter of the battalion's honor."[117] Over the coming days attacks were launched one after the other. They made slow progress, much like the Italians had over the summer, and ate through most available reserves.[118]

In mid-November, a stark rift opened with the Austrian command responsible for the Col di Lana, Grenzabschnittskommando 9. Most colonels within the command agreed that, despite initial difficulties, it was imperative the summit be retaken, ideally by way of a pincer attack which would close in on and choke the Italians.[119] They believed superior Austrian firepower would eventually force the Italians to cave.[120] Sure, some units would likely be cut to death as they led the way up the mountain, but this was an acceptable loss of "expendable" reservists necessary to restore Austrian honor.[121]

One man stood out amid this tactical consensus—Colonel Lauer. Commander of the 3rd Kaiserjäger Regiment, Lauer did not believe retaking the Col di Lana was worth what it was costing. Having executed many of the initial counterattacks, the colonel was now convinced that,

> Recapturing the former Col di Lana infantry position is purely a matter of honor. Strategically, the position offers no advantages in the current operational situation—only disadvantages…The capture of the infantry position would be difficult and costly, and its defense is highly questionable due to concentrated enemy artillery fire from all sides…The previous assault attempts on this outpost have failed. Even if one succeeds, the position

[117] K.u.k. Armeekommando, "Phonogramm – Oberst Lauer," Beilage 30, November 6, 1916, AT-OeStA/KA FA AOK OpAbt Akten 527, OSV.
[118] Subrayon V, "Phonogramm – Auf mündlichen Befehl des Gstbschefs," Beilage 26, November 1, 1916, AT-OeStA/KA FA AOK OpAbt Akten 527, OSV.
[119] Ibid.
[120] K.u.k. Armeoberkommando, "Ausbildungsbehelfe, Ergänzung des Ex. Rgts. F. Inf.," Op. Nr. 45.534, October 4, 1917, AT-OeStA/KA FA AOK OpAbt Akten 534, OSV.
[121] K.u.k. 96tes Infanteriebrigadekommando, "Fortsetzung des Berichtes," n.d.

> would be further extended and become more exposed to enemy flanking artillery fire than it is now.[122]

Lauer's words, reported in an internal message to Grenzabschnittskommando 9, were a remarkable break from convention. They suggested, incredibly, that more did not mean better. Failure was not, the colonel implied, an invitation to expand and persist, but rather to learn and adapt plans accordingly.

These observations were symptomatic of a different approach to war. While contemporary military theory identified preponderance and persistence as the keys to success, Lauer espoused a more astute understanding of operations. The relationship between casualties and progress was neither positive nor proportional. Or better, "the number of losses" was *not* "a measure of the performance of the troops."[123] Attacks had to be thought through, their potential rewards weighed against their potential losses. As Lauer himself explained, this was particularly true in the mountains, where changing weather conditions could improve an army's position so long as it was willing to wait. The conclusion to the colonel's message summarized this philosophy of war:

> I am against any other attack unless it pursues a major strategic goal. The minor operations we are considering will eventually be rendered unnecessary by winter and snow, without human losses…If the defender cannot improve his position operationally and tactically, he must focus on repelling enemy attacks and not scatter his forces in small offensive operations.[124]

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[122] K.u.k. G.U.A.-Kommando 9, [Report on planned operations of Subrayon V], Op. Nr. 452 (3 Blg.), November 5, 1915, Beilage 24, AT-OeStA/KA FA AOK OpAbt Akten 527, OSV.
[123] K.u.k. Armeeoberkommando, "Bericht über Erstürmung des M. Meletta und Castelgomberto," July 24, 1916, AT-OeStA/KA FA AOK OpAbt Akten 530.
[124] K.u.k. G.U.A.-Kommando 9, [Report on planned operations of Subrayon V], November 5, 1915.

Colonel Lauer's complaints were overridden by the Grenzabschnittskommando. Well into the winter the Austrians would struggle to retake the Col di Lana, exchanging control of the summit with the Italians several times. Each counterattack exacted a heavier toll. On some days, as many as 200 men were killed, captured or wounded.[125] Unsurprisingly, the troops quickly renamed the Col di Lana "Col di Sangue," or "Bloody Hill."[126]

Having finally wrestled control of the mount from the Regio Esercito in January 1916, the Austrians were blown up in April by a 5,000 kilogram charge the Italians had laid beneath their positions through an intricate system of tunnels.[127] The 6th Company of the 2nd *Kaiserjäger* Regiment, the outfit tasked with defending the Col di Lana, was virtually annihilated—of its roughly three hundred men, 170 were captured and over one hundred either killed or severely injured. The mine set off by the Italians had formed a crater 30 meters wide and 55 meters deep. The Col di Lana was no more.[128]

Sadly, most deaths had been for nothing. After the war was over, it became clear the Italians could have reached the Bozen highway by bypassing Mount Col di Lana, crossing the slopes of the Col di Roda and using the Sief Pass (2209 meters) to reach it. The Austrians, of course, never lost control of Mount Sief, but they failed to understand that it was far more important than its twin summit. While for the Italians the Col di Lana was useless without Mount Sief, for the Austrians the latter sufficed. The bloody counteroffensive launched in the winter of 1915 was therefore unnecessary. The men had died "for precisely nothing," and Colonel Lauer had been correct.[129]

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[125] K.u.k. G.A.-Kommando 9, "Auf mündlichen Befehl des Gstsbschefs," November 5, 1915, AT-OeStA/KA FA AOK OpAbt Akten 527, OSV.
[126] Thompson, *The White War*, 201.
[127] Laying and detonating mines became a popular tactic in the Dolomites as the war progressed. It was expensive, laborious and of marginal return, but its spectacle provided the armies with a feeling of accomplishment that was hard to come by on a front which seemingly refused to move. For detailed discussion of the mine war and its complexities see, Leoni, *La Guerra Verticale*, 266-312; and Di Martino and Cappellano, *La Grande Guerra sul Fronte Dolomitico*, 221-67.
[128] Di Martino and Cappellano, *La Grande Guerra sul Fronte Dolomitico*, 237-42.
[129] Thompson, *The White War*, 202.

The vindication of Lauer's strategic assessment was also a vindication of a new theorization of war. Lauer appeared to identify on the Col di Lana a degree of operational nuance that found little space in the bland architecture of the mass army. Indeed, the colonel's disagreement with his superiors anticipated a much broader shift in the military consciousness of Austria-Hungary, a shift whose importance and effects the Dolomites would emphasize more than any other front. Throughout the second half of 1916 and 1917, the k.u.k. Armee would slowly abandon the doctrine of numerical strength and the problematic reading of warfare it compelled, ensuring its survival through to 1918 and synthesizing a modern system of war whose features were fast appearing elsewhere.

The original sin for the Austrian army had been the development of a fighting force almost entirely reliant on its logistical base. The result of this narrow development was an institutional ethos which did not incentivize independent action and decision-making. Early experience revealed both were imperative in the Dolomites. Communication was difficult—telephone lines rarely survived the first round of artillery fire—and front lines were punctured by the sharp topography of the region, meaning units were often separated from their command centers.[130] Sometimes, they could find themselves completely alone. In July 1916, a company fighting a defensive action on Mount Col Bricon (1.920 meters) found itself encircled for over a week before breaking out and returning to its battalion. After some had tried to pin the event on the recklessness and impreparation of the

[130] K.u.k. Chef des Generalstabes, "Erfahrungen aus den Kämpfen am Ortigara (Grenzkamm gegen Italien) im Juni 1917," Op. Nr. Geh. 349, compiled at 11. Armeekommando, June 31, 1917, AT-OeStA/KA FA NFA BK IBrig/GebBrig 51. SchBrig 603, OSV; K.u.k. Oberkommando 6. Armee, "Ausbildung hinter der Front," Ia Nr. 60 014, September 27, 1916, AT-OeStA/KA FA AOK OpAbt Akten 531, OSV.

company's captain, an AOK report concluded severed telephone lines and thick forest had left the captain with no way of communicating with colleagues or superiors.[131]

These situations demanded a greater capacity to operate with over-extended supply lines and act independently, especially from non-commissioned officers (NCOs) leading small units. Pre-war military theory, however, eschewed the importance of such autonomy in favor of centralization and control. As a report by the Austro-Hungarian Ministry of War (*Kriegsministerum*) directed in 1914, "in training new NCOs the primary focus must be on disciplinary education, on instilling absolute reliability and the highest sense of duty."[132] The agency of the NCO, in other words, was limited by his subservience to a higher authority, and it was crucial he learn to abide by whatever it commanded. His "capacity to judge the situation on the battlefield properly," as Archduke Franz Ferdinand had put it, "[could] not be trusted," and so he had to be steered in the right direction.[133] But as the war in the Dolomites unfolded, it became increasingly evident that this line of reasoning was not only untenable but counterproductive. This realization produced an important priority shift, and by early 1916 AOK's "Instructions for Teaching at Officer Schools" emphasized the need to encourage independence of thought and action among NCOs (*Selbstaändigkeit der Unterführer*).

The ability to think and act independently was inherently related to mobility. Though an officer operating into enemy lines or in isolation could have the capacity to improvise appropriate plans, he could not hope to effect them successfully with a slow, burdened unit whose organization could ground it if far from supply lines or headquarters. Most infantry units stationed in the Dolomites were consequently lightened as the war progressed. Orders circulated in anticipation of an offensive commanded the "utmost reduction of baggage," often inviting officials to forcibly

[131] K.u.k. Korpskommando G.d.I. v. Roth, "Bericht über Verlust der Cavalazza und des Colbricon," Op. Nr. 2429/5, July 31, 1916, AT-OeStA/KA FA AOK OpAbt Akten 530, OSV; K.u.k. 55. Gebirgsbrigadekommando, "Beilage 1 zu Res. No. 942," July 12, 1917, AT-OeStA/KA FA NFA BK IBrig/GebBrig 51. SchBrig 603, OSV.
[132] K.u.k. Kriegsministerium, "Kriegserfahrungen und Folgerungen für die Ausbildung," Abt. 5, Nr. 9072 von 1914, AT-OeStA/KA FA NFA DK ID 48. ID 2638, OSV.
[133] Kronenbitter, "Austria-Hungary," 40.

collect any excess load the men may have been carrying. Sometimes, this meant troops could go into an attack carrying no more than a blanket, three reserve rations and ammunition. Mountain guides (*Bergführer*) were also assigned to units to ensure they could make their way through uncharted terrain. An order distributed by the command of the 56th Mountain Brigade (56 *Gebirgsbrigade*) in preparation for an attack in mid-1917 aptly summarized this metamorphosis from logistics-reliant force to mobility-oriented contingent—"All units must be highly mobile and not bound to the road."[134]

Besides amending the organization and tactical principles of existing forces, the k.u.k. Armee's transformation produced new fighting units of their own. Most notable was the development of the *Sturmtruppen*. The *Sturmtruppen* (literally, 'stormtroopers') epitomized the army's shift to speed, mobility and operational independence. Specially trained assault troops designed to achieve desivie breakthroughs, they were introduced to the Italian front in the summer of 1916 (though they were not employed in combat until the winter) after AOK was forced to conclude artillery fire and numbers alone were not sufficient to breach enemy positions.[135]

Sturmtruppen operated exclusively as squad-sized units consisting of one officer and six to eight men, with the addition of a machine gunner, one to two flamethrowers, and a few light grenade launchers. They were also remarkably light—a typical stormtrooper was expected to carry a steel helmet, a gas mask, a rifle with fixed bayonet, a combat knife, small explosives for the destruction of bunkers, and a couple signal flares for communication between squads. No backpacks were

[134] K.u.k. 56. Gebirgsbrigadekommando, "Vorbereitungen für den Vormarsch," Op. No. 638/7, Feldpost No. 633, October 30, 1917, AT-OeStA/KA FA NFA GAK Italienische Front Abschnittskommando Cristallo 1199, OSV.
[135] General Kommando VII. AK, "Einrichtungen und Ausbildung von Stoßtrupps," 6 June 1916, AT-OeStA/KA NFA GAK Italienische Front Abschnittskommando Cristallo 1199 (Akten 1916/1917), OSV; Paolo Morisi, *Hell in the Trenches: Austro-Hungarian Stormtroopers and Italian Arditi in the Great War* (Warwick: Helion, 2019), 87.

permitted (for "fast movement," explained the Army), and ammunition could only be carried in small pouches. Emergency rations were minimal if not non-existent.[136]

More importantly, however, the *Sturmtruppen* were designed for a form of warfare that most European war planners had quickly dismissed as unlikely to unfold in 1914. Their mission, explained an AOK directive distributed among sector commands (*Rayonkommando*) in the Dolomites in June 1916, was to conduct "rapid assaults on enemy positions," with the ultimate objective of causing an isolated collapse in the enemy's front line for later waves of regular troops to exploit.[137] Breaking through was to be the absolute priority for these units. As the directive instructed, the stormtrooper's attack had to "be carried out in leaps and bounds," with no regard for the clearing of trenches, the rounding of prisoners, or the consolidation of gains.[138] Indeed, the responsibility for securing a newly taken area fell not with the advancing stormtroopers but with the regular troops which followed them.[139]

This offensive model, argued the army's tacticians, called for "trench raids, bunker clearing, and close-quarters combat." But for such actions to succeed, "cold-blooded execution, rapid decision-making, and teamwork" would be essential.[140] The articulation of these new tactical principles was a remarkable break from the thinking which had dominated not just Austria's but Europe's military circles in the early stages of the war. It repudiated the idea of strength numbers, suggesting, in the words of the army, that "attacks should be conducted in small groups rather than large formations."[141]

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[136] Sturmabteilung, "Erfahrungen beim Angriff (in Stichworten)," n.d., AT-OeStA/KA NFA BK IBrig/GebBrig 51. SchBrig 603, OSV; Austria; General Kommando VII. AK, "Einrichtungen und Ausbildung von Stoßtrupps," June 6, 1916.
[137] Ibid.
[138] Morisi, *Hell in the Trenches*, 87.
[139] General Kommando VII. AK, "Allgemeine Anordnungen für die Ausbildung der Infanterie im Stellungskrieg," September 3, 1916, AT-OeStA/KA NFA GAK Italienische Front Abschnittskommando Cristallo 1199 (Akten 1916/1917), OSV.
[140] General Kommando VII. AK, "Einrichtungen und Ausbildung von Stoßtrupps," June 6, 1916.
[141] Sturmabteilung, "Erfahrungen beim Angriff," n.d.

The model according to which the *Sturmtruppen* operated also rejected the other maxim of pre-war military thinking—the supremacy of fire power. Before the introduction of these special assault units, it was widely agreed within the Austro-Hungarian army that a preponderance of heavy artillery was critical—alongside an equally large preponderance of troops—to success. Shells broke men, and with them the enemy's defense. But prolonged preparatory artillery fire was anathema to the spirit of *Sturmtruppen* operations, which, as an internal report by the 4th Army explained, prized speed and, above all, surprise:

> A silent *Sturmtruppen* attack is always preferable—the quieter, the better. Only a well-trained *Sturmtruppe* can execute an attack with minimal disadvantages in form and execution. The enemy should notice the approach only at the last possible moment. Therefore, utmost silence must be maintained, and unnecessary movements should be avoided. The success of a *Sturmtruppen* attack, even with good preparation, depends largely on whether the enemy is alert and expecting an assault.[142]

To ensure this element of surprise could be preserved, *Sturmtruppen* attacks were preceded by extremely brief artillery barrages. Sometimes, there was no barrage at all. Where artillery fire was used, in fact, it was mostly to deceive the enemy as to the center of gravity of an attack.[143] Batteries were subsequently called into action to provide cover fire for the advancing squads, but gone were the days of using weeks-long artillery campaigns in preparation for offensives.[144]

Only exceptionally skilled and physically fit men could train as stormtroopers. As AOK put it when first instructing commanders on the formation of *Sturmtruppen* squads, "each company should form a stormtrooper unit from its best and most agile soldiers."[145] Ideally, those trained

[142] Ibid.
[143] Morisi, *Hell in the Trenches*, 86.
[144] Sturmabteilung, "Erfahrungen beim Angriff," n.d.
[145] Ibid.

would be volunteers. Second, "mental resilience…and the ability to act independently under fire" were just as—if not more—important than other, more conventional operational skills.[146] Third, operations had to be economical and well-reasoned. Squads should "only attack after thorough preparation," seek to minimize casualties, and focus on points in the enemy's front line of particular strategic significance, like fortified buildings and trenches. Men were thus not simply taught how to conduct close combat and sudden trench assaults, but also encouraged to study Italian trench designs, instructed on how to conduct effective reconnaissance patrols, and shown how to easily read military maps.[147]

These new units proved highly successful. The Italians were shocked by their speed and incisiveness, so much so that the Regio Esercito would issue an emergency directive in early 1917 to all infantry commanders stationed across the Dolomites, alerting them as to the deployment of these devastatingly effective troops.[148] The agility, physical acumen, and superior skill of the *Sturmtruppen* allowed the Austrian army to operate in conditions which had proven entirely prohibitive in the first year and a half of war. Attacks could now be launched at night under heavy snowfall, for example, catching Italian units by surprise and allowing for the consolidation of important positions.[149] The *Sturmturppen* were also particularly useful in counter attacks. Unlike regular troops, they were stationed in rear training areas, meaning they could quickly mobilize as strong, battle-ready reserves in the event of a particularly fierce enemy attack.[150] Against over-extended and fatigued Italian troops, these were details which provided a significant comparative advantage and which, throughout 1917, allowed the Austrians to preserve the integrity of their front line in the Dolomites.

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[146] General Kommando VII. AK, "Einrichtungen und Ausbildung von Stoßtrupps," June 6, 1916.
[147] Sturmabteilung, "Erfahrungen beim Angriff," n.d.
[148] Morisi, *Hell in the Trenches*, 88.
[149] K.u.k. XX. Korps, [Report on Stormtroop Action in Snowstorm near Rayon Pm 5], October 13, 1917, AT-OeStA/KA NFA KK XX. Korps (neu) 2831 (1917, 1.10–15.10), OSV.
[150] Morisi, *Hell in the Trenches*, 87; K.u.k. 4. Armeeoberkommando, "Ausbildung von Sturmtruppen," November 5, 1916.

It is no surprise that, come the latter stages of the war, Austrian commanders were desperately requesting the deployment of *Sturmtruppen* to their respective sectors.[151]

Combining Capabilities

Critical to the new model of warfare being developed by the k.u.k. Armee was the idea of combined arms warfare. As the war in the Dolomites developed, it became increasingly apparent to the Austrian high command that the benefits of each fighting capability (that is, infantry, artillery, and, for the first time in military history, air power) could only be maximized if these capabilities were used in consideration of one another.[152] Put differently, it was necessary to combine the comparative advantages of each instrument of war if the full potential of the military could be unlocked.

Doing so required a precise understanding of each capability. As AOK began to gradually understand this, officers from across military organs were forced to develop stronger relationships grounded in technical knowledge and respect. In late 1916, for example, the High Command instructed army commands in the Dolomites to take on an air force representative (*Luftfahrreferent*). The representative would not only be responsible for all interaction between infantry and aviation units, but also be tasked with "fostering a broader understanding" of the plane as an "emerging weapon" within each command. These measures, it was hoped, would help "[establish] the foundation for coordinated military operations across all service branches."[153]

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[151] K.u.k. 96tes Infanteriebrigadekommando, "Fortsetzung des Berichtes," n.d; K.u.k. 11. Armeekommando, "11. Armee – Bericht," January 31, 1917, AT-OeStA/KA FA AOK OpAbt Akten 531, Österreichisches Staatsarchiv, Vienna, Austria.
[152] We exclude naval power as an instrument of war here because of the minimal military capacities displayed by the Austrian navy throughout the course of the First World War. We also exclude cavalry given its minimal contribution to operations on the Dolomite front. For further discussion of combined arms warfare in the First World War, see, Stephen Biddle, "The Modern System," in *Military Power: Explaining Victory and Defeat in Modern Battle* (Princeton, NJ: Princeton University Press, 2006); and Biddle, "Operation MICHAEL - The Second Battle of the Somme, March 21 - April 9, 1918," *Military Power*.
[153] K.u.k. Armeeoberkommando, "[Roles and Organization of the Army's Aviation Command]," n.d., AT-OeStA/KA NFA BK IBrig/GebBrig 51. SchBrig 603, OSV.

But AOK went further. Integration between air and infantry power was necessary not simply at the technical and operational level—it was also required on a more personal plane. Thus the same directive instructed:

> Continuous efforts must be made to get to know one another, and especially to establish mutual trust…Evening entertainment events, especially those involving teams, are particularly useful for fostering people's understanding of each other…Any training or practice has only achieved its purpose if it succeeds in convincing the unit that, in times of utmost distress, when all other means fail, only the air force representative remains capable of establishing a connection between air command and troops.[154]

Evidently, coordination and harmony across different branches of the military were now considered significant determinants of operational failure and success.

In December 1916 the publication of an updated instruction manual for the army's officer cadet school enshrined this new vision of warfare. While in 1914 the same document had focused on the subordination of the officer to higher commands and the importance of restraining his operational independence, the manual now accepted that "situations may arise where [an officer] must act independently without regard to regulations or commands." From this realization were born a series of new considerations, including the importance of "ensuring that students gain a full understanding of the various auxiliary weapons, their applications, and effects." Instructors were encouraged to provide opportunities for candidates to not just learn about non-infantry capabilities, but practice with them in live-fire exercises. The purpose of such exercises, noted the manual, was to develop within officers an ability to coordinate "cooperation between infantry and other forces."[155]

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[154] Ibid.
[155] K.u.k. Armeeoberkommando, "Anweisung für den Unterricht an den Offiziersschulen," December 13, 1916, AT-OeStA/KA NFA BK IBrig/GebBrig 51. SchBrig 603, OSV.

From these pedagogical efforts emerged improvements in wider strategy. For example, strategic bombing—the use of air power to degrade the enemy's ability to sustain war—became an important part of Austrian operations. And though it lacked the material facilities to compete against its more modern counterparts, the Austro-Hungarian air force (*k.u.k. Luftfahrtruppen*) displayed a nuanced appreciation for the role of air power in contemporary warfare. Plans made in late 1917 for a large-scale offensive to be launched across the Dolomite front, for example, included extensive discussion of how aerial bombardment could facilitate infantry attacks by weakening the enemy's logistical and industrial base. Food plants, ammunition depots, strategically significant roads and fortifications, and headquarters were all listed as potential bombing targets.[156] The precariousness of the logistical balance in the Dolomites made such targeted bombing particularly effective; this, after all, was a theater of war where taking out a single road could ground an entire division.

Tactically, the process of integrating capabilities focused on infantry-artillery coordination. The relationship between infantry and artillery units in the first year of war had been extremely poor. The geography and topography of the Dolomites made effective coordination almost impossible. When firing in indirect mode (where a gun crew could not see the target directly), artillery required precise guidance, both to reach its target and to ensure it did not fall on friendly forces. In an environment where visibility was limited and cabling unreliable neither task could be considered straightforward. Thick forest and sharp rock made finding suitable observation posts extremely difficult for artillery officers, who were often forced to operate at a significant distance from the battlefield. Observing and responding to troop movement from these locations proved highly challenging. As a result, units were often forced to operate at great risk without appropriate cover and supporting fire.[157]

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[156] K.u.k. XX. Korpskommando, "Abschrift aus S/L Nr. 4000/281 und 283," n.d., AT-OeStA/KA NFA KK XX. Korps (neu) 2831 (1917, 1.10–15.10), OSV.
[157] K.k. 26. Schützendivisionskommando, "Wohn- und Gefechtsstände der Inf.- und Art. Kmdten," June 8, 1917, AT-OeStA/KA NFA BK IBrig/GebBrig 51. SchBrig 603, OSV.

To address these difficulties, the army had to abandon the much-cherished idea that the weight of an artillery barrage alone sufficed to secure operational success. It replaced this maxim of pre-war doctrine with an understanding that integration between artillery and infantry was critical to making best use of the former's features. Several steps were taken in an attempt to realize such integration. First, training models were changed so as to develop officers with a greater ability to operate at the nexus of two capabilities. A report by the 4th Army submitted to AOK in October 1916, for example, signaled a move towards simulations which harnessed this ability, concluding, "Every opportunity for joint exercises [between infantry and artillery units] must be taken."[158]

Directives for the offensive were also adjusted. Recognizing the importance of synchronization, they began to require that battery commanders and artillery officers "move forward during the attack…to visually control and adjust artillery fire." Contingency instructions were provided to account for the possibility of impaired observation. Under this condition, forward observers were, according to directions distributed in late 1916, to be dispatched "to maintain direct sight and communication with the firing units." The fusion of artillery and infantry command posts was also required. In sectors of the Dolomite front where topography and tactical considerations made this impossible, artillery liaison officers (*Artillerieverbindungsoffiziere*) were to be nominated "to act as a bridge between fire support and infantry needs."[159]

There was a particular sort of infantry unit, however, that did not fit neatly within this new doctrinal model—special forces. These included the famous *Kaiserjäger* (who were skilled above all in climbing and marksmanship), experienced mountain guides with supreme topographical knowledge (*Bergführer*), and athletic skiers (collectively known as *Ski-Kompanien* or "ski companies").[160] All had

[158] K.u.k. Armeeoberkommando, "Ausbildung der Offiziers-und Mannschaftsersätze bei der Armee im Felde," November 10, 1916, AT-OeStA/KA NFA BK IBrig/GebBrig 51. SchBrig 603, OSV..
[159] General Kommando VII. AK, "Allgemeine Anordnungen für die Ausbildung der Infanterie im Stellungskrieg," September 3, 1916.
[160] K.u.k. Gruppenkommando Fass. I, "Aufstellung der Jnft. Skikompagnien," January 2, 1916, FA NFA DK ID 48. ID 2638 (1915/1916, Train u.Techn.Akten), OSV.

been deployed to the Dolomites shortly after the outbreak of hostilities, but officials had struggled to identify a clear use for them that could maximize their unique capabilities, and over the course of 1915 and 1916 they were often used indiscriminately.

But as time progressed and experience accrued, the Austrians began to understand how to include these forces within their new model of combined arms warfare. Their true value, realized officials, was revealed not in combat but outside it. The athletic abilities and local origins of the *Kaiserjäger*, the *Bergführer*, or the skier endowed him with a high degree of mobility and an invaluable understanding of terrain. Special forces were thus extremely useful in intelligence gathering operations.[161] They were also particularly valuable in winter time, when snow depths of up to several meters and the ice made most roads unusable and thus logistics impossible. *Kaiserjäger* and *Bergführer*, many of which had been professional mountaineers before the war, could circumvent these problems by climbing directly to a position.[162] This was a dangerous assignment (of a dozen men who set out to climb, sometimes no more than two or three returned), but it was often the only way to keep supplies flowing to certain units.[163]

Perhaps most importantly, by the second year of war the Austrian army had realized that local knowledge could play an important role in operational planning. The figure of Georg Bilgeri offers an interesting illustration of the ways in which this realization affected the form of operations across the front. One of the first pioneers of skiing, Bilgeri had been recruited by the Austrians shortly before the start of the war to the *Ski-Kompanien*.[164] By late 1916, however, his responsibilities had grown considerably. Experience was teaching that a precise understanding of the Dolomites' unique terrain was critical to the organization of a successful operation, and even more so to the

[161] Comando di Linea, "Oggetto – Attività del nemico," May 7, 1917, Fondo Esercito, 2.4, MSIG; K.u.k. 48. Infanteriedivision, [Ski Patrols, Medical Service, and Equipment Allocation in Mountain Units], n.d., AT-OeStA/KA FA NFA DK ID 48. ID 2638 (1915/1916, Train u. Techn. Akten), OSV.
[162] Leoni, *La Guerra Verticale*, 16-37.
[163] K.u.k. 10. Armeeoberkommando, "Bericht über die Räumung der Kellerwandspitze," 28 September 1916, AT-OeStA/KA FA AOK OpAbt Akten 530, Österreichisches Staatsarchiv, Vienna, Austria.
[164] Georg Bilgeri, *Der alpine Skilauf* (Leipzig, Germany: R. Voigtländer, 1910), 58–59.

selection of strategic positions. Men like Bilgeri were thus turned into military consultants of sorts. They were given the title of *Alpinerefrent* (or "alpine officer"), and assigned to units to advise on the feasibility of positions:

> On that day, the Lösch Battalion I/III arrived in Predazzo as assigned by the Army Group Command (HgRK) for the planned operation on the Marmolada glacier…To properly assess the viability of the terrain along the Fassane Ridge, the Alpine expert of the LVK, Captain Bilgeri, was once again sent…to personally inspect nearly all ridges and peaks in the Montalon–Colbricon area, along with the relevant officers.[165]

The creation of the *Alpinerefrent* post was further evidence of the Austrian army's transition to combined arms warfare. Much like air power, artillery, and infantry, highly specialized forces could only be decisive if used in relative consideration of other instruments of war.

By late 1917, this transition had been completed. Combining capabilities into a single combat model was seen as a critical element of mountain warfare, and discussion of artillery and infantry preponderance was a mere fraction of what it had been in 1914 or 1915. Reflecting this evolution, in November 1917 the XX Corps, writing in an internal report, identified the "cooperation of all arms" (*Zusammenwirken aller Waffen*) as one of ten major lessons of the war in the Dolomites. Not one of the lessons related to relative infantry or artillery power.[166]

The Agile and Dashing Soldier

The k.u.k. Armee's development of a new system of war grounded in mobility, operational decentralization, and combined arms warfare belied a more profound change in Austro-Hungarian

[165] K.u.k. Korpskommando. G.d.I. v. Roth, "Bericht über Verlust der Cavallazza und des Colbricon," July 31, 1916, AT-OeStA/KA AOK OpAbt Akten 530 (1916), OSV.
[166] K.u.k. XX. Korpskommando, "Nächste Aufgaben des XX. Korps," 11 October 1917, AT-OeStA/KA NFA KK XX. Korps (neu) 2831 (1917, 1.10–15.10), OSV.

military theory. In 1915, Austria-Hungary had entered the war with an extremely homogeneous, overly-simplistic understanding of the army as a military unit. What mattered to war planners and writers of doctrine at the time were numbers. Because numbers are one-dimensional, this approach flattened most of the complex dynamics which inevitably arise from the formal and informal interactions of some several million men of nearly a dozen different ethnicities. The observed changes in doctrine that occurred throughout 1916 and into 1917 reflected a reappropriation of some of this complexity within Austrian military consciousness. As AOK and its subsidiary commands moved away from quantitative measures of military power, they became increasingly aware of the importance of intangibles for operational outcomes. Such awareness produced gradual changes in what and who the army chose to prioritize, and in its general approach to warfare.

At the heart of these changes was a new and intense concern for the individual soldier. Before the war, the latter had only existed in subservience to a larger whole, the mass army. His equipment, training and abilities were given due consideration, but only insofar as they reflected the overall features and conditions of the army itself. The result of such logic was that men were interchangeable and thus expendable—if their qualities were not idiosyncratic but generic, the army could keep functioning as intended with a replacement of equal abilities. While this could have proven to be true had the war played out in the way strategists had envisioned before 1914, the unique form of warfare which developed in the Dolomites demanded far greater focus on the soldier, his features and his relationships.

The Austrian army responded and adapted to these demands in several ways. First, it began to look more closely at the question of physical training. The harshness of the Dolomite environment, particularly its climate and terrain, encouraged officials to revise training programs, which began to prioritize fitness and athletic ability over other factors. The decision to expand the *Sturmtruppen*'s extreme training regiment to include a majority of units in 1917 is one example of this

revised approach, but in general the second half of the war was characterized by an almost obsessive fixation with the "physically agile and dashing soldier."[167]

Another abstract issue to which the Austrians dedicated considerable time was unit cohesion, the degree of integration among men in a small-sized military body. The Austro-Hungarian empire's multi-ethnic nature made this a particularly sensitive question for AOK. In fact, it was one of the earliest to be addressed by officials, who demonstrated at least a minimal understanding of ethno-nationalist dynamics in 1915 when they decided to ban Italian men from Austrian-controlled territories from serving in the Dolomites (and for that matter on the rest of the Italian front).[168]

As the war progressed, further measures were taken to address issues of intra-unit divide and unrest. These appeared particularly pronounced among units made up of Balkan soldiers. The fraught political history of the Balkans (which German Chancellor Otto von Bismarck had famously labelled the "powder keg of Europe" back in 1888) made these sort of units prone to volatile behaviour, inner competition, and sometimes even violence.[169] Reports from mid-1916 and beyond recorded incidents of insubordination, desertion, and propaganda among Romanian and Serbian troops, but officials were rapid and effective in their response. Problematic regiments were isolated, often through construction work, from other units in order to prevent individual incidents from escalating into wider unrest. Another strategy adopted was "balancing"—where officials observed a quantitative disparity between two ethnicities in a unit, they ensured replacements were drawn from the underrepresented group. This balancing act included appointing an officer of neither ethnicity to act as a lynchpin of sorts. As an 11th Army command bulletin concluded in early 1916, the ethnic

[167] K.u.k. 11. Armeekommando, "11. Armee – Bericht," 13 February 1917, AT-OeStA/KA AOK OpAbt Akten 531, OSV; General Kommando VII. AK, "Einrichtungen und Ausbildung von Stoßtrupps," 6 June 1916.
[168] K.u.k. 11. Armeekommando, "11. Armee – Bericht," 13 February 1917.
[169] Maurice Western, *The Balkans: Europe's Powder-Keg* (Toronto: Canadian Association of Adult Education, 1946), 20; K.u.k. 11. Armeekommando, "11. Armee – Bericht," February 13, 1917.

question was thus manageable, provided men were "led by capable officers who [spoke] the language" of those they were tasked with controlling.[170]

Indeed, "capable officers" (and, in particular, NCOs) were quickly identified as one of the most important ingredients for success in mountain warfare. In its treatment of the officer corps, the Austro-Hungarian army of 1915 remained very much the reflection of Archduke Franz Ferdinand's distaste for the junior officer. The focus of pre-war officer candidate schools before the war was not developing men who could lead exceptionally under fire or demonstrate creative initiative, but rather ensuring their "absolute reliability" and instilling within them "the highest sense of duty." Early combat experience, however, clearly indicated that, in an exceptionally challenging theater of war, experienced leadership could pay tremendous dividends. In many cases, after-action reports from the first months of war attributed victory and defeat to officers' failures or even eliminating the enemy's NCOs.[171]

As this lesson was learned, the development of "capable officers" became an absolute priority. In October 1916, AOK issued a directive to the 10th and 11th Armies (those responsible for most of the Dolomite sector) in which it ordered the creation of special NCO courses for front-line units (*Unteroffizierskurse*). The courses would focus on enhancing the leadership skills of NCOs "with several months of appropriate front-line service," so as to transform them into "capable squad and platoon leaders." Some of the NCOs would later serve as instructors themselves, evidence of the army's attempt to create a self-perpetuating culture of effective leadership.[172]

But it is the form of these courses that is most impressive. Defining the values and skills it sought to impart to trainees, AOK published another directive in December, in which it stressed the importance of moving from a theoretical to a practical instructional model:

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[170] K.u.k. 11. Armeekommando, "11. Armee – Bericht," February 13, 1917.
[171] "La Notte di Sangue del Forte Pozzacchio," June 29, 1916.
[172] K.u.k. Armeeoberkommando, "Ausbildung der Offiziers-und Mannschaftsersätze bei der Armee im Felde," November 10, 1916.

> Tactics must…not be taught theoretically but practically…Every officer must know and master the forms and conditions of infantry combat. They must be practiced in realistic settings…based on actual terrain and maps. These exercises should aim to develop the students' independent judgment and decisiveness within the framework of company or battalion operations. The independence of junior leaders…is of particular importance in modern warfare, where quick decisions must often be made without orders.[173]

This was an astonishing reversal in doctrine for an army that had cultivated discipline and subservience within its officer corps for more than half a century.[174] It was also an almost total disavowal of operational agency by the high command in favor of the front line, the latest move in a process of gradual military decentralization that had started with the struggles of 1915.

Central to this process was not just a newfound belief in the abilities of the modern soldier, but a realization that war planning could only go so far. Within the k.u.k. Armee, this conclusion placed an extraordinary premium on experience. The topography, climate and general conditions of the Dolomite theater gave those who had spent significant time on the front line and participated in operations an enormous advantage over those who hadn't. As the 10th Army's commander explained to AOK in July 1916:

> The importance of troops and commanders who are accustomed to life in high mountain regions was brilliantly demonstrated in the first year of the war. Only with such troops could the difficult battles…be conducted; only these troops were capable of holding high-altitude

[173] K.u.k. Armeeoberkommando, "Anweisung für den Unterricht an den Offiziersschulen," December 13, 1916.
[174] Rothenberg, *The Army of Francis Joseph*, 74-138.

> positions during the winter…Troops unaccustomed to mountain warfare take a long time to overcome their natural fear of the mountain.[175]

The realization that experience afforded such decisive advantages in battle had an important effect on organizational decisions. So much so, in fact, that it could complicate the army's attempts to enhance integration and facilitate coordination across branches. Many artillery group commands, for example, refused to merge with combat sector commands, conscious that doing so would take the most experienced artillery group commanders away from the battlefield and put them behind a desk. "If they were removed from the posts," lamented the 56th Mountain Brigade (*Gebirgsbrigade*) in September 1916 in response to an order issued by the Border Subsector Command 10/a (*Grenzunterabschnittskommando 10/a*), "fire control would be impossible, and younger, less experienced officers would have to take over." In this case, the border subsector command accepted the recommendation of the mountain brigade, a clear demonstration of the k.u.k. Armee's increasingly decentralized approach to management.[176]

The army also attempted to integrate experience in training and planning. Starting in the summer of 1916, particular emphasis was placed on developing realistic war games for officers and commanders. AOK directed that tactical and strategic scenarios be constructed with real maps, and modeled according to recent battles. Indeed, by the winter of 1916 the Austrian army appeared to have at least partially replaced a top-down instruction model with a bottom-up approach founded on experience rather than strict adherence to doctrine. The goal of an officer's training, argued the high command in December, should not be "to have students memorize a set of tactical principles that rarely appear in clear form in reality, but rather to teach them how to correctly assess tactical

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[175] K.u.k. 10. Armeekommando, "Festigung der Armeefront," July 17, 1916, AT-OeStA/KA AOK OpAbt Akten 530 (1916), OSV.
[176] K.u.k. Grenzunterabschnittskommando 10/a, [Report on Artillery Reorganization in the Rienz–Piana Sector], October 15, 1916, AT-OeStA/KA NFA GAK Italienische Front Abschnittskommando Cristallo 1199 (Akten 1916/1917), OSV.

situations…to act quickly and decisively." To develop this ability, it was imperative that "real wartime experience" serve as the basis for all tactical discussions. Attempts to illustrate such discussions "using isolated theoretical examples" would appear "forced and unnatural."[177]

This new pedagogical approach produced tangible changes to training in the rear. Up until the outbreak of war, new recruits had nearly always been trained by officers whose sole responsibility was instruction. Most of these men did not see significant action, and lived relatively comfortable lives away from the front line. In early 1917, the 11th Army decided to break with convention. It replaced most of the staff officers assigned to its training groups with "capable, highly qualified, and battle-experienced officers from the front," citing a lack of war experience as the primary reason behind its decision.[178] The decision was evidence of a new idea spreading within the army—in the Dolomites, where warfare was so frustratingly particular, tactical awareness and skill could only be drawn from the front line.

Recognizing both the importance of shaping doctrine according to experience and recalling how pre-war planning had failed to prepare troops for modern fighting conditions, the army sought to create a military culture rooted in exchanges of knowledge and information. Such exchanges were particularly necessary in the Dolomites, where the first year of war had revealed an extremely poor understanding of local terrain. With the exception of local *Berführer* and *Kaiserjäger*, most men were unfamiliar with the geography of the region and could count on little to no sense of direction when conducting operations. After all, mountaineers and adventurers had been exploring the Dolomites and opening its passageways for no more than a few decades.[179] Extensive efforts were undertaken throughout 1916 and 1917 to bridge this knowledge gap. Commands repeatedly instructed units to collect geographical, topographical and geological information, so as to ensure "the correct transfer

[177] K.u.k. Armeeoberkommando, "Anweisung für den Unterricht an den Offiziersschulen," December 13, 1916.
[178] K.u.k. 11. Armeekommando, "11. Armee – Bericht," February 13, 1917.
[179] Leoni, *La Guerra Verticale*, 3-26.

of what [was] observed in the terrain onto maps and plans." Yet officials found that "serious mistakes" plagued the new material that was being produced, as new recruits struggled to develop a coherent understanding of the local environment. To avoid these errors, the army once again found itself relying on the experience of officers and hardened troops, who were encouraged to guide their less experienced counterparts in the collection and reporting of data.[180]

In the Dolomites, in short, experience was king. Its value was immense, both in preparation for and execution of battle. And there was no way around it, no trick to replicate its wisdom artificially. As an airman from the 45th Aviation Company put it, "Theoretical knowledge is very good…[but] in the…Dolomites there is an additional special difficulty that can only be learned through experience."[181]

The Cheerful Butcher

The Italian army did not experience the same philosophical shift as its counterpart. Up until the very end of the war, its operations in the Dolomites remained profoundly tied to pre-war tactical doctrine, often unfolding as no more than reflections of old military theory. Nowhere was this more painfully obvious than at the Battle of Ortigara. Mount Ortigara (2,105 meters) sits at the southwestern edge of the Dolomites. As British explorer John Ball observed in the late 19th century, it is one of those mountains that "do not rise to a great height" but whose "forms are unusually very bold," and whose view of surrounding valleys "offers great beauty and variety."[182] For the Italians, its strategic significance was twofold. First, the Ortigara towered over the Asiago Plateau, the southernmost point of the Austro-Hungarian front line and an important bridgehead from which

[180] K.u.k. Rayonskommando V, "Erkundungsoffiziere – Regelung des dienstlichen Verkehrs," July 28, 1917, AT-OeStA/KA NFA GAK Italienische Front Abschnittskommando Cristallo 1199 (Akten 1916/1917), OSV.
[181] K.u.k. Luftfahrtruppe, Fliegerkompagnie Nr. 45, "Septemberbericht 1917," October 1917, AT-OeStA/KA NFA KK XX. Korps (neu) 2831 (1917, 1.10–15.10), OSV.
[182] John Ball, *South Tyrol and Venetian or Dolomite Alps* (London: Longman's, Green, 1873), 418-19.

the k.u.k. Armee could launch an offensive into the Po Valley.[183] The peak also controlled traffic into the Reschen Pass and along the Via Claudia Augusta, an ancient Roman road built by Emperor Claudius in 1 AD to connect the Italian peninsula with southeastern Germany.[184] Refashioned by logisticians during the war, the Via Augusta and the Reschen Pass now served as critical supply lines for Austro-Hungarian units deployed in the southern sector of the Dolomite front.[185] Italian control of the Ortigara naturally endangered the integrity of these supply lines.

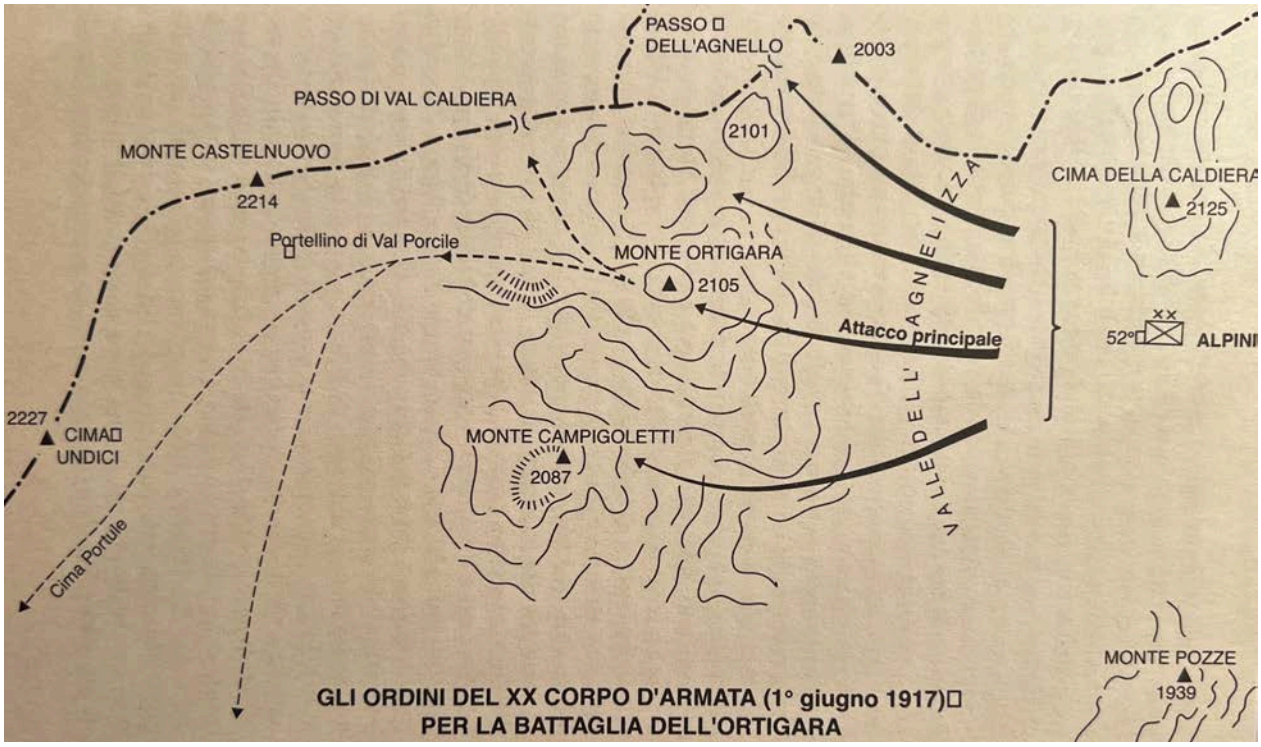

Figure 6 - Italian battle plan, Mount Ortigara, June 1917[186]

The Regio Esercito's plan was to attack along four different vectors, with a central force designated for the capture of the Ortigara and three other groups responsible for securing several neighbouring positions.[187] For the offensive, the Italian high command assigned almost 300,000 men,

[183] Isnenghi and Rochat, *La Grande Guerra*, 203.
[184] Aurelio Guarnieri Ottoni, *Dissertazione del Conte Aurelio Guarnieri Ottoni, Patrizio Osimano, Intorno al Corso dell'Antica Via Claudia dalla Città di Altino sino al Fiume Danubio* (Bassano, Italy: 1789), 2-11.
[185] K.u.k. 11. Armeekommando, "11. Armee – Bericht," 13 February 1917.
[186] Oliva, *Storia degli Alpini*, 127.
[187] Ibid.

a number so large that the attack's front line had to be extended several times.[188] The assault began on the morning of June 10, 1917 with an intense artillery barrage. In the late afternoon, the infantry was released. The Italians began their attack with brave cries of victory and much zeal, but were met with hellish resistance. They struggled to make their way up the southern face of the Ortigara, where fog had quickly descended and a liquefied mixture of mud and snow added to the misery of the men.[189] The incoming fire was brutal. Poor weather and imprecision had pushed nearly all of the preparatory artillery barrages beyond Austrian positions, putting Italian units in the impossible position of facing fortified machine gun nests and medium-small artillery pieces who not only could operate as desired, but also enjoyed a significant height advantage.[190] By nightfall, the attack had failed. The losses were staggering—6,752 killed or injured lost in a matter of hours. Some progress had been made on the northern vector, but for the most part the peak of the Ortigara remained a distant mirage. The failure of the offensive, however, did little to sway the resolve of Italian officials, and on the following morning a second, almost identical attack was launched. The casualties mounted, while forward movement appeared even more impossible than on the previous day.[191]

The attack on the Ortigara was paused the following day for poor weather, before it resumed even more violently on the 18th. Better conditions now allowed Italian artillery to be more incisive, and Austrian resistance began to weaken. The summit of the Ortigara was finally seized on the morning of the 19th. Defenses remained too strong to overcome for the three other vectors, however, forcing Italian officials to pause the attack later that day. Exposed on a deep salient and now with limited cover, the men who had taken the Ortigara suffered a devastating counterattack by Austro-Hungarian *Sturmtruppen* on the 24th. The next day the peak was back in the hands of the Austro-Hungarians, and the Italians were fast retreating. Still, the Italian command refused to cave.

[188] Isnenghi and Rochat, *La Grande Guerra*, 203-204.
[189] Emilio Faldella, *Storia delle Truppe Alpine*, vol. 2 (Milano: Ufficio Storico dello Stato Maggiore dell'Esercito, 1972), 679–80..
[190] Isnenghi and Rochat, *La Grande Guerra*, 204.
[191] Faldella, *Storia delle Truppe Alpine*, 683; Oliva, *Storia degli Alpini*, 135-37.

Several counterattacks were ordered between the 25th and the 29th, as exhausted and decimated units were forced back into the front line. Unsurprisingly, these failed, and on the 30th the offensive was permanently called off. Nearly three weeks after the first artillery rounds had been fired, the Italians had lost nearly 25,000 men (of which more than 1,000 officers) to find themselves where they had started.[192]

* * *

The defeat on the Ortigara exposed the very worst of the Italian army, as well as the deadly consequences of continued belief in antiquated conceptions of warfare. Most evident throughout the weeks spent in pursuit of the mountain's summit was the remarkable centralization of the Regio Esercito. Much like Archduke Franz Ferdinand, Luigi Cadorna, the Esercito's Chief of Staff, believed deference and total obedience to be essential to victory. For Cadorna, initiative could not come from below—officials alone commanded plans and directed battle.[193]

The operational side effects of this centralized governance model are easily traceable on the Ortigara. In the days leading up to June 10th, several officers had warned high-ranking officials that conditions discouraged an attack on the summit. Recent reconnaissance, they stressed, indicated the Austrians had significantly fortified defensive positions over the previous winter and spring. A series of maps compiled by technical artillery troops who had been out on patrol, in fact, revealed a rear area completely different from that of late 1916, when the Italians had first designed their offensive. The inactivity of the colder months had evidently given the Austrians the opportunity to not only strengthen their positions, but also improve supply lines and bring up reserves.[194]

Both the maps and the officers' concerns did little to change battle plans. They were quickly dismissed by General Luca Montuori, commander of the XX Corps, who reassured his subordinates

[192] Faldella, *Storia delle Truppe Alpine*, 710-714; Isnenghi and Rochat, *La Grande Guerra*, 204-5; Oliva, *Storia degli Alpini*, 137-40; Brigadier-General Sir James E. Edmonds and Major-General H. R. Davies, Military Operations: Italy 1915–1919, History of the Great War Based on Official Documents (London: His Majesty's Stationery Office, 1949), 33-34.
[193] Isnenghi and Rochat, *La Grande Guerra*, 195.
[194] Aldo Battistini, *Ortigara* (Bologna, Italy: Tamari, 1968), 70.

with extraordinary naivety that "enough destructive force [would] be amassed against enemy defenses that, at the signal to attack, the [troops] would only need to march forward resolutely to seize their positions."[195] Montuori's words are as clear an example as any of how, in 1917, the Italian army remained deeply transfixed by mass warfare's alluring promise of swift and decisive victory. They also point to an abject disregard at the executive level for the professional opinion of lower-ranking officers. Such disregard was the result of an inherent sense of superiority among men of Montuori's rank. As the American writer John Dos Passos reflected after having spent several months working as an ambulance driver on the Italian front, there was a "swinish uppiness" to the Esercito's senior officials. "Even the rather decent ones," observed a disillusioned Dos Passos, "have the same disease—their overbearing nastiness to anyone they don't lick the boots of is disgusting."[196]

But those who voiced their concerns to Montuori were the exception, not the rule. So extreme was the high command's position on obedience and discipline, in fact, that officers mostly kept their ideas to themselves. Many had done so throughout the weeks-long campaign on the Ortigara. Writing several decades after the war, one colonel revealed how concerns of retribution exposed the men who had captured the mountain's summit on the 19th to the brutal Austrian counterattack of the 24th. "We all knew very well," he explained, "that the Ortigara, by itself, was not a tenable position: either we moved forward or we [had] to go back… [but] out of fear of punishment and due to mistaken doctrine, we [did] not want to abandon what we [had] taken."[197]

The officers were right to be afraid. When the Italian high command looked for the cause of a problem or failure, it tended to look downwards rather than inwards. Executions, both summary and ordered by military courts, were the order of the day. Also common was the practice of "decimation," a particularly brutal method of discipline which involved executing a random selection

[195] Oliva, *Storia degli Alpini*, 130.
[196] John Dos Passos, *The Fourteenth Chronicle: Letters and Diaries of John Dos Passos*, ed. Townsend Ludington (Boston: Gambit, 1973), 183.
[197] Angelo Gatti, *Caporetto* (Bologna, Italy: il Mulino, 1968), 141.

of men from a unit deemed to have misbehaved. Just four days before the beginning of the Ortigara offensive, Cadorna had urged commanders to employ execution "on a vast scale" to control insubordination, stem desertion and punish failure.[198] But nowhere was the army's proclivity to blame its men for its own shortcomings, as well as its detachment from reality, more evident than in the Chief of Staff's assessment of the Ortigara disaster:

> The errors in conduct that can be identified, and which are always present even in the most successful operations, are not enough to explain the failure. Undoubtedly, adverse weather conditions played a role… But the main cause of the failure was the weakened fighting spirit of the troops, affected by subversive propaganda.[199]

This inability to self-criticize made it impossible for the Esercito to learn from and institutionalize operational experience. Officials remained committed to the same ideas with which they had entered the war, preferring to search for scapegoats rather than reflect on the relevance of these convictions. But the severe teachings of the Dolomites were difficult to ignore for those on the ground. The result was the development of an army whose leadership could not—and did not want to—keep up with the demands for theoretical and doctrinal realignment of its men. This dichotomy between desire and reality was highlighted by the defeat on the Ortigara, the aftermath of which saw officers lament the recalcitrant and obstinate nature of Italian military innovation. "No one worries about investigating the causes of what has happened," wrote one officer. "Two years of war have passed, but nothing has been done to develop a military doctrine that keeps up with the times and evolves gradually, providing lessons as needed."[200]

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[198] David Stevenson, *With Our Backs to the Wall: Victory and Defeat in 1918* (Cambridge, Massachusetts: Harvard University Press, 2011), 295-96.
[199] Luigi Cadorna, *La Guerra alla Fronte Italiana fino all'Arresto sulla Linea del Piave e del Grappa*, vol. 1 (Milano: Fratelli Treves, 1921), 7.
[200] Gatti, *Caporetto*, 144.

This perplexing concentration of common sense at the bottom of the army's hierarchy, combined with a culture rooted in brutal discipline, gave troops and officers no choice but to enter battle with a precise awareness of their lack of preparation and an uncomfortable understanding of death as a likely outcome. As men took to the front line, they could feel among each other a "quiet resignation to the inevitable."[201] They understood that they were at the mercy of their superiors, but also that the latter's oblivious approach to war sentenced them to an exhausting cycle of violence. It is a defeatist acceptance of this reality that defines, perhaps above all, the writings of men who served in the Dolomites. Few could capture the essence of such defeatism so tragically as the private Paolo Monelli. "They've thrown us into a sack," he wrote after having survived the Ortigara, "and every so often the cheerful butcher grabs one of us and tosses us onto the bloody counter." "Then," continued Monelli, "when it's all over, he'll gather up those still good for another round and stuff them back into the sack."[202]

Order Issued, Order Obeyed

The obstinacy of the Italian high command (*Comando Supremo,* or CS) and its resulting inability to take stock of the lessons offered by the experience of fighting in the Dolomites grounded the Regio Esercito in the same simplistic understanding of war the Austro-Hungarians had fought to eschew since 1916. For Cadorna and his colleagues, in 1917 the army continued to be a large, homogenous block whose attributes of primary relevance remained size and fire power. As operations on the Ortigara revealed, the quality, cohesiveness, and coordinative abilities of those who made up this block were considered to be of secondary (if of any) relevance.

The Italian soldier's sole responsibility was forward movement, as the "Norms for the Attack the Infantryman Should Always Remember" distributed in early 1917 made sure to remind troops.

[201] Paolo Monelli, *Le Scarpe al Sole: Cronaca di Gaie e di Tristi Avventure d'Alpini, di Muli e di Vino* (Milano: Mursia, 2016), 124
[202] Ibid., 135.

"Always march," instructed the document, "following the orders and example of officers and non-commissioned officers. Have no worries, because behind [you], there are those who help, support, and supply [you]."[203] The active encouragement of this mindless approach to warfare naturally hindered any appreciation for more subtle nuances of combat. It should come as no surprise, indeed, that little to no consideration was given within the army to the issue of combined arms integration. The absence of such consideration was crudely evident on the Ortigara, where artillery barrages failed to weaken Austrian defenses and protect units. Lacking direction from the infantry, artillery officers struggled to calibrate their fire in adverse weather conditions, pushing most shells away from enemy positions and, sometimes, onto friendly forces.[204]

But the issue was far more systemic. Not only did Italian officials struggle to coordinate the simultaneous use of different capabilities, they also demonstrated little to no understanding of each capability's relative strengths. The organization of the Ortigara offensive revealed this. In preparing the attack, the CS had chosen to make the Alpini the centerpiece of its operation— at twenty-two battalions they made up more than a third of the designated force.[205] But the Alpini were a highly specialized type of infantry designed for extreme operations demanding exceptional athletic ability and supreme knowledge of local terrain. To use them, as the Italians did on the Ortigara, as the bulk of a frontal assault against higher, fortified enemy positions was to forego their value and reduce them to the status of ordinary forces. The Alpini emerged from the fighting of June 1917 with their numbers cut by more than half, a testament to the absence of any coherent framework for arms integration within the Italian army.[206]

Of equally little importance was internal cohesion. Starting in the late 19th century, it had been standard practice for the army to allow only those with a high school degree to serve as

[203] [Regio Esercito], "Norme per l'Attacco che il Soldato di Fanteria Deve Tenere Sempre Presenti," n.d., Fondo Esercito, 2.1, MSIG.
[204] Oliva, *Storia degli Alpini*, 131-32.
[205] Ibid., 126.
[206] Isnenghi and Rochat, *La Grande Guerra*, 204.

officers. This discrimination had a profound effect not just on the make-up of the officer corps, but the dynamics of the officer-infantryman relationship. Blinded by a theorization of warfare that did not account for the idiosyncrasies of human behavior, the Regio Esercito could not understand how using academic achievement as a determinant in the construction of the officer corps created an inevitable degree of distance in this relationship.[207] Early 20th century Italy was nowhere near as developed as other European countries of the time; it was still, in many respects, undergoing a process of state formation. As a result, access to education, and in particular secondary education, remained limited, and in most cases a privilege of the elite.[208] The officer and the infantryman, therefore, were separated not just by rank, but also by class. On the battlefield this inevitably compromised the cohesiveness of units, and, with it, their internal coordination. Victims of such compromise were agility, motivation, and general effectiveness.

Ironically, the decision to drop educational attainment as a requirement for prospective officers only worsened the army's ability to coordinate action. As setbacks continued to mount throughout 1917, an increasingly desperate high command turned ever more to manpower as a solution to its problems (it was not by accident that army size peaked in October of that year).[209] But this attitude was fundamentally incompatible with the dwindling supply of able-bodied men available for recruitment. And it was certainly incompatible with the existing restrictions on selection for the officer corps. Two measures were taken to resolve such incongruence. First, the aforementioned restrictions were relaxed. And second, efforts were taken to facilitate and encourage promotions among non-commissioned and commissioned officers.[210]

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[207] Ibid., 194-95.
[208] Clark, *Modern Italy*, 208-13.
[209] Isnenghi and Rochat, *La Grande Guerra*, 177-78; Stevenson, *With Our Backs to the Wall*, 294.
[210] Giorgio Rochat, *L'Esercito Italiano in Pace e in Guerra: Studi di Storia Militare* (Milano: Rara, 1991), 119-25. The issue of promotion was highly politicized. General Cadorna saw promotions and the expansion of the officer corps as a tactic in his perennial fight against the socialist government of Italy, which resisted the militarization of society and kept a close eye on the military's expenditure and activity.

Both steps undercut the integrity of the officer corps. What had been a group tied by class, education, and devotion to the monarchy was now a confused concoction of men from all sorts of sociocultural backgrounds, of varying political belief, and who often spoke dialects so peculiar they impeded communication.[211] The result was that coordination was now difficult not just within, but among units. But this, like the many other qualitative attributes of force employment ignored by the Italian army, was an intangible issue. And as such, it received little consideration from the CS, whose affinity for a linear, quantitative understanding of warfare continued well into 1918.[212]

The best representation of the Regio Esercito's deficiencies was given by its allies. Following the routing of General Cadorna's troops at Caporetto in November 1917, the Allied Powers had chosen to deploy British and French forces to stabilize the Italian front. The commanders of these forces were also tasked with examining and reorganizing the Esercito. Their observations reveal with particular clarity the latter's failure to innovate, and its continued adherence to a model of war now recognized by most as obsolete. Writing to the Chief of the Imperial General Staff (CIGS) a month into his deployment as commander of the British Expeditionary Force in Italy, Field Marshal Herbert Plumer (who had fought on the Western Front since 1915) reported on issues of force employment akin to those observed on the Ortigara a few months earlier. After observing Italian units behind the front lines and in action during several operations on the Dolomite front, Plumer was struck by the "small amount of attention given by [their] commanders to the serious training of the troops and their failure to appreciate the necessity for it."[213] The primary effects of such oversight were a particularly unprepared officer corps and a deeply dysfunctional relationship between infantry and artillery. Indeed, it appeared to Plumer that the coordination of capabilities within a framework for combined arms warfare was not a concern among officials, who appeared

[211] Rochat, *L'Esercito Italiano*, 114-16.
[212] Regio Esercito Italiano, CS, "Metodi Tattici del Nemico," June 28, 1918, Fondo Esercito, 1.3, MSIG.
[213] Edmonds and Davies, *Military Operations: Italy*, 134.

oblivious to the clear "lack of co-operation between the General Staff and the other branches" of the military.[214]

Plumer attributed these observed problems of force employment to excessive centralization. Italian officials refused to delegate authority as they struggled to view the army's members as more than expendable pawns, which created considerable distance between command and front line. The center of gravity of the army, in other words, was found not in the latter but in the former. This problematic trivialization of anything beyond the confines of the CS led to the belief that "an order issued was an order obeyed."[215] It also, of course, made it impossible for knowledge and information to flow upwards. The training of officers was thus based not on experience but rather inadequate doctrine imposed from above. As Plumer noted in his correspondence with the CIGS, Italy's officers were brave and worked well under fire, but their preparation was "so theoretical that they [did] not understand the practical difficulties of their orders."[216]

A different report by General Émile Fayolle, the commander of the French contingent deployed to the Italian front, expressed similar concern for the Italian army's unsophisticated approach to modern warfare. Of particular concern to Fayolle was an apparent unawareness for the importance of unit cohesion and its detrimental effect on coordination between capabilities:

> The necessity of keeping formations intact is not recognized. Troops are frequently detached, without sufficient reason, from divisions and even from brigades. One result is inefficiency in command, and imperfect liaison between infantry and artillery…The Italian army [...] is imperfectly trained in the methods of present-day warfare…It is strong enough to hold its present front, but a collapse is not impossible.[217]

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[214] Ibid., 136.
[215] Ibid., 108.
[216] Stefano Marcuzzi, *Britain and Italy in the Era of the Great War: Defending and Forging Empires* (Cambrdige: Cambridge University Press, 2020), 226; Edmonds and Davies, *Military Operations: Italy*, 136.
[217] Edmonds and Davies, *Military Operations: Italy*, 144-45.

What emerges from Fayolle and Plumer's comments is an army that had failed almost entirely to learn from the challenges and failures of more than two years of fighting. Unlike the Austrians, the Italians had struggled to capitalize on the ability of mountain warfare to expose the inadequacy of the 19th century mass warfare model. That it took outsiders no more than a few weeks to identify what officials refused to acknowledge well into 1917 shows the extent to which the CS, in its effort to explain disastrous defeats, had come to be consumed by this model and its one-dimensional conceptualization of war.

Where the Austrians succeeded, in other words, the Italians failed. By 1917 it was clear the Dolomites had become the theater for the clash of not just two armies but two competing visions of modern warfare. One continued to ascribe to the doctrine of mass warfare, confident that if just a few more men and a little more shells were thrown at the enemy then he would collapse. Under this model of war the leadership of the officer and the agency of the soldier were crushed by the weight of absolute centralization. The other vision was much more complex and far less naive. It grasped the importance of the intangible as a determinant of military outcome and reorganized accordingly. From this reorganization was born an army that eschewed numbers in favor of small unit dynamics, infantry-artillery coordination, combined arms integration, the ability to operate autonomously and many other subtle issues. This shift, to be clear, was not the result of some sudden enlightenment within the leadership of the Austro-Hungarian army. It was a direct response to the peculiarities of mountain warfare, whose extreme nature revealed the shortcomings of pre-war theory with devastating effect.

The question remains, however, why the theoretical understanding of the Italians and the Austro-Hungarians diverged so dramatically. The battlefields of the Dolomites were a public good, their lessons available to anyone willing to heed them. This reminds us that the endogenous features of the theater alone cannot account for the observed differences in military innovation. Explaining

such differences requires looking beyond the mountain and into the political, strategic and institutional landscapes of Europe.

CHAPTER THREE

A FRAGILE MACHINE

> In the same way as bravery, which is a natural gift in some men, may arise in a soldier as a part of an Army from habit and custom, so with him it must also have a different direction from that which it has with others…It must lose that impulse to unbridled activity and exercise of force which is its characteristics…and submit itself to demands of a higher kind, to obedience, order rule, and, method.[218]
>
> — Carl von Clausewitz, 1832

To the average military professional of the time, it would not have been immediately obvious in 1914 that the Austro-Hungarian and Italian armies would over the following years develop in such different ways. Both had entered the war with serious but also remarkably similar insufficiencies, including poor cohesion due to the careless mixing of ethnicities and socioeconomic classes, an underdeveloped logistical network, and a far too simplistic understanding of war rooted in an excessively centralized model of military organization.[219] There was arguably more that united them than set them apart.

But even more difficult to predict would have been the balance of power between the two armies in early 1918. Throughout the Dolomite theater (and indeed across the entirety of the Italian front), Austria-Hungary appeared to hold a clear upper hand over Italy. Gone was the pressure that had tied it down in the north and east. The Russians had signed an armistice in December 1917 following the Bolshevik Revolution, and both the Serbian and Romanian problems had been resolved through military victory and occupation. The remarkable success at the Battle of Caporetto in November had also put the k.u.k. Armee in as good a position as ever on the Italian front—it was now as close as it had ever been to Venice, and across the Dolomites continued to repulse the Regio

[218] Carl von Clausewitz, On War, accessed April 9, 2025, https://ebook-mecca.com/online/On%20War%20-%20Carl%20von%20Clausewitz.pdf.
[219] Rothenberg, *The Army of Francis Joseph*, 140-44; Isnenghi and Rochat, *La Grande Guerra*, 137-42.

Esercito's attacks with relative economic use of forces.[220] Finally, and most importantly, AOK's approach to warfare had, as shown, developed to become significantly more sophisticated than that of its counterpart. Not only was it more complex, but it was also far better suited to the operational realities of the Dolomites. How had an army considered by most in 1914 inadequate for a major European war survived the harshest of conditions to consolidate this position? Why, in other words, had the Austrians successfully developed an appropriate framework for modern warfare but the Italians failed to do the same?

Learning from the Kaiser's Army

Part of the answer to these questions lies not in Austria-Hungary but in Germany. The military relationship between the Dual Monarchy and the German state had a profound effect on the observed development of the k.u.k. Armee. Where sophistication appeared in AOK's theorization of war, it was often a by-product of contact between the German and Austrian military systems. On the Italian front, one of the first cases of such contact occurred in 1915, following the deployment of the German Alpenkorps to the Dolomites.

It took the Alpenkorps, a Bavarian division created exclusively for mountain warfare, less than a month to understand that the theater to which it had been deployed demanded a highly particular approach to warfare. Indeed, the observations and instructions of its commanders foreshadowed many of the innovations which would take place within the Austrian army more than a year later. They reveal, for example, an almost immediate realization that, amid the broken topography of the Dolomites, coordination would be imperative to success. Writing to the officials of the 4th Sub-sector Command (Subrayon IV), General Krafft von Dellmensingen, commander of the Alpenkorps, explained how "Austrian and German troops [had to] become so familiar with each

[220] Deák, "The Habsburg Army," 307-8.

other that they [could] recognize one another even in the dark." It was also important, continued von Dellmensigen, that special attention be given to the integration of new recruits into established units. Adapting to the local environment was equally important—every opportunity had to be taken for troops "to become accustomed to the mountains and to familiarize themselves thoroughly with the terrain."[221]

The ease with which von Dellmensingen's men appeared to grasp the importance of intangible questions of force employment was the result of a military culture rooted in the act of learning. The Alpenkorps embodied the very best of this culture. Throughout their deployment, their leaders sought not, as was standard practice for AOK and the CS, to arbitrarily impose directives from above, but rather shape decisions according to experience accrued on the battlefield. Soldiers were thus encouraged to collect knowledge and provide feedback instead of being made to fear retribution for disagreeing with men of higher rank. Units were told to report on the adequacy of provided equipment, urged to submit requests for needed material, and in general pushed to maintain open lines of communication with their superiors.[222] Perhaps most representative of this learning-oriented approach was an order to collect geological data, not for the current but for a future war (*Zukunftskrieg*).[223]

The German approach found its way into the k.u.k. Armee's practices in two ways. The first—and most direct—was through the deployment of German units in support of their allies. These units could offer recommendations and encourage specific actions to Austrian officials, as von Dellmensingen had done in his report to Subrayon IV. This channel for the transfer of knowledge, however, was unreliable. After 1915, the German army high command (*Oberste*

[221] Deutsches Alpenkorps, "Korpsbefehl," June 7, 1915, AT-OeStA/KA NFA Formationen Deutsches Alpenkorps 1931, OSV.
[222] Deutsches Alpenkorps, "Korps – Tages – Befehl," September 15, 1915, AT-OeStA/KA NFA Formationen Deutsches Alpenkorps 1931, OSV.
[223] Deutsches Alpenkorps, [Directive on the Preparation of Geological Layer Maps for Mining Operations], July 9, 1917, AT-OeStA/KA NFA Formationen Deutsches Alpenkorps 1931, OSV.

Heeresleitung, or OHL), heavily engaged on the Western Front, grew increasingly reluctant to commit substantial forces to the Austrians—particularly in the harsh, grinding environment of the Dolomites. Aside from the Caporetto offensive of 1917, a sustained German presence on the Italian front remained an elusive desire of AOK.[224]

Far more influential was the permanent assignment of German staff officers and NCOs to Austrian *Marschformationen*, replacement units used to process, train and mobilize recruits and wounded men returning to the front line. These officers served "as advisors to the Marschformationen commanders. Their primary responsibility was "supporting the training of the enlisted men," in particular on matters "that fell outside the formal regulations."[225] This arrangement ensured new Austro-Hungarian troops were trained at least partially according to German doctrine. Crucially, it also gave German officers the responsibility of imparting upon these men lessons acquired in war, lessons "formal regulations" could not account for. Foremost among these lessons was certainly the importance of learning from battlefield experience in a theater of war where existing doctrine had proven so grossly inadequate.

However, the presence of the Deutsches Heeres on the Italian front was not strictly necessary for German military ideas to reach units in the Dolomites. The existence of channels for formal communication between AOK and OHL often sufficed. Because the Germans were so effective in learning from battle, they would draw lessons from their experience on other fronts and relay them to OHL, who could translate them into actionable recommendations for its counterpart. AOK would then distribute these recommendations to all units, including those in the Dolomites.

An order issued by AOK in October 1916 illustrates how this mechanism for military dialogue shaped Austria's understanding of modern warfare. The order relayed three German

[224] Thompson, *The White War*, 328-31.
[225] K.u.k. Armeeoberkommando, "Ausbildung der Offiziers-und Mannschaftsersätze bei der Armee im Felde," November 10, 1916.

documents to the 51st Mountain Brigade (*Gebirgsbrigade*). The first, a report by the commander of Germany's 6th Army, General Ludwig von Falkenhausen, provided a series of suggestions for training the infantry. In words that foreshadowed later AOK directives, von Falkenhausen stressed how "the continuous loss of officers, non-commissioned officers, and battle-experienced troops" made training "crucial for maintaining the combat effectiveness of [units]."[226]

The German commander identified a series of imperatives for effective instruction that in the coming months would come to be part of the Austrian army's modus operandi in and beyond the Dolomites. First, it was important that use be made, where possible, of experience. It was thus "necessary for regimental commanders and higher officers to supervise the services…of the youth and…inexperienced commanders." The cohesion of the units demanded equal consideration. To this effect, von Falkenhausen recommended frequent inspections "to strengthen the connection between leaders and troops." Indeed, the quality of leadership could influence the confidence and motivation of the men, particularly at the NCO level. Training should also strive to be practical, in von Falkenhausen's words "strictly limited to the necessities of combat." Exercises like parade drills, noted the general, were of little use to the infantryman dug in a trench.[227]

But it was essential for Austrian officials to recognize, stressed von Falkenhausen, that instruction and doctrine could only go so far in preparing troops for combat—what awaited them on the battlefield had proven to be inherently unpredictable. This reality called for a training model rooted in decentralization and operational independence. As the commander of the 6th Army put it:

> We must anticipate that in a major battle, our troops will often have to fight in terrain that has not been previously prepared, where orientation, use of cover, and swift adaptation to enemy artillery fire will determine success…Every individual soldier must [therefore] be

[226] Oberkommando 6. Armee, "Ausbildung hinter der Front," September 27, 1916, AT-OeStA/KA NFA BK IBrig/GebBrig 51. SchBrig 603, OSV.
[227] Ibid.

> trained in maximum self-reliance, so that he can act independently and without direct contact with his superiors, making the right decisions during both offensive and defensive operations.[228]

In reading these words, it is clear that the reorganization of the Austrian army into a decentralized force willing to delegate authority to its officers benefitted in large part from the wisdom of a German army that seemed to have mastered the core ideas of modern warfare long before it.

The same is true of the observed increase in AOK's consideration for coordination and combined arms warfare throughout late 1916 and early 1917. In his report, in fact, von Falkenhausen had instructed Austrian officials to take "every opportunity [...] to train coordination between artillery and infantry." The Germans clearly felt this was a particularly important feature of modern combat, for at the bottom of the report was a note from OHL saying "coordination between artillery and other arms, particularly with fully staffed infantry and observer officers, [had to] be intensely drilled." Indeed, such coordination had been a mainstay of German doctrine since the late 19th century, when the Prussian army had sought to understand how to integrate the material possibilities offered by industrialization in its fighting mechanism.[229]

Attached to the von Falkenhausen report were two additional documents. The first, a message from the Chief of the German General Staff Paul von Hindenburg, confirmed the report was designed to "serve as guidance for training" for both enlisted men and young officers.[230] The second, a dispatch from General Friedrich von Bernhardi, situated von Falkenhausen's recommendations within the context of Austro-Hungarian military performance. Von Bernhardi was serving as the commander of a German army group on the Eastern Front that contained an

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[228] Ibid.
[229] Oberkommando 6. Armee, "Ausbildung hinter der Front," September 27, 1916; Thorsten Loch and Agilolf Kesselring, "Through Artillery from Thrust to Fire: How Prussian Military Thinking Anticipated Emergent Warfare in 1870," *War in History* 31, no. 2 (2024): 128–147.
[230] Generalstab des Feldheeres, [Cover Letter Endorsing 6th Army Training Directive], October 8, 1916, AT-OeStA/KA NFA BK IBrig/GebBrig 51. SchBrig 603, OSV.

important Austro-Hungarian contingent. His experience leading Austro-Hungarian troops, he argued in his dispatch, warranted a few addendums to von Falkensauen's suggestions. First, the particular demands of coordinating action between two different armies made it "highly desirable that training for combat be structured as uniformly as possible." Second, the multiethnic composition of the k.u.k. Armee called for independence in combat and patrols to be instilled not only in leaders, but "also in individual soldiers, especially in multilingual Austro-Hungarian units" where orders issued could be misunderstood. Exercises should be designed accordingly "to test and evaluate the troops' independent thinking."

Von Bernhardi also stressed that von Falkenhausen's discussion of leadership was particularly important for the combat efficiency of the Austro-Hungarian army, where a shortage of skilled officers often required NCOs to assume greater responsibility than expected. "These men," he wrote, "must not only mechanically follow commands, but actually [learn to] lead their sections in the field." The NCO should additionally "strive to earn the trust of his men through personal example and presence." The language barrier which often stood between an NCO and his men, observed von Bernhardi, made such efforts particularly important for the development of unit cohesion. To this effect, officers were also encouraged to try and learn the language of their subordinates.[231]

From Verdun to the Dolomites

The distribution of these three documents among divisions serving in the Dolomites situates the mountain range within a broader context of European military learning Indeed, it is clear that the Austrian army's ability to adapt to mountain warfare and innovate accordingly was at least in part a result of the exchange of precious knowledge between AOK and OHL. What occurred beyond the

[231] Heeresgruppe Bernhardi, [Instruction on Combat Initiative and Firearms Training], October 17, 1916, AT-OeStA/KA NFA BK IBrig/GebBrig 51. SchBrig 603, OSV.

Dolomites, in other words, had a profound effect on the development of those forces that were fighting amid its peaks and valleys.

Unsurprisingly, developments on the Western Front were of particular relevance. The German army's experience fighting the Allies informed many of the lessons that guided the restructuring of Austria-Hungary's approach to modern warfare. The development of the *Sturmtruppen* provides one example of how this dynamic unfolded. The *Sturmtruppen* had helped the Austrians consolidate their defensive position and weaken the Italian front line following their deployment to the Dolomites in late 1916. But it was not the k.u.k. Armee that had first designed these units. The Germans began to develop "shock troops" (*Stoßtruppen*), elite infantry units whose purpose it was to infiltrate the enemy's trench network and shock or "roll up" their adversaries with the use of grenades, flamethrowers and other small arms so as to create weak points for oncoming waves of ordinary infantrymen to drive through.[232] In demonstrating the failure of sheer artillery power to move the enemy but at the same time its ability to suppress his fire, the German offensive at Verdun in February 1916 encouraged officials to integrate these assault units within a more coherent tactical framework grounded in rapid, incisive action.[233] Thus were born specialized companies modelled in the image of the *Stosstruppen*—they were called *Sturmkompanie*.[234]

It did not take long for these revolutions in doctrine to reach Austrian units in the Dolomites. As news reached AOK of the events of Verdun, discussions began regarding the need to adapt the army's prewar understanding of infantry operations to suit the conditions of modern warfare. Discussions of this nature took place as early as June of 1916, when officials of the 10th Army, at the time stationed in the eastern Dolomites, reflected on the need for such change and ordered its implementation:

[232] David Stone, *The Kaiser's Army: The German Army in World War One* (London: Conway, 2015), 248–50.
[233] Bruce I. Gudmundsson, *Stormtroop Tactics: Innovation in the German Army, 1914-1918* (New York: Praeger, 1989), 64-72.
[234] Stone, *The Kaiser's Army*, 250.

> Combat near Verdun has shown that the French can be forced out of forward positions such as blockhouses and MG nests only by tough hand-to-hand combat. Ordinary infantry attacks are not sufficient. Success requires specially trained and led assault troops (Stoßtruppen), which have proven effective in several regiments…Each battalion is to form assault troops selected by capable officers. Preferably volunteers. These should be drawn from the most physically fit men of the infantry.[235]

The Austrian decision to train and develop *Sturmtruppen* units, then, was a direct result of German experience on the Western Front, underscoring the role of the Dolomites as a key node in a trans-European network for the exchange of military knowledge. To facilitate the flow of information across this network, AOK ordered the deployment of units and officers to the Western Front. Companies were sent west "for instruction and observation," while officers were pulled from the rear to "learn firsthand the combat conditions there, which [were] highly instructive for leadership and tactics."[236] Knowledge could also flow eastward—the leading role assigned to stormtroopers in the German offensive at Cambrai in December 1917, for example, was in part a result of the success achieved by such units in recent operations along the Italian front, which had convinced German officials of their ability to break the impasse of positional warfare.[237]

It would be both anachronistic and unfair, however, to attribute the entirety of the k.u.k. Armee's theoretical development in the Dolomites to its relationship with the German army. The lessons which encouraged such development, in fact, were also drawn from the former's own combat experience. For units like the 48th Infantry Division that had served on the Russian front in 1914, for example, certain elements of the system of modern warfare that emerged in 1916 were easier to come to terms with than for those who hadn't. Much like on the Western Front, fighting in

[235] General Kommando VII. AK, "Einrichtungen und Ausbildung von Stoßtrupps," 6 June 1916.
[236] K.u.k. Armeeoberkommando, [Request to Transfer Austro-Hungarian Officer to German Western Front Command], December 10, 1916, AT-OeStA/KA AOK OpAbt Akten 531, OSV; K.u.k. 4. Armeeoberkommando, "Ausbildung von Sturmtruppen," November 5, 1916.
[237] Gudmundsson, *Stormtroop Tactics*, 139-41.

Galicia—the region spanning what is now southeastern Poland and western Ukraine and through which the Austro-Russian front line ran in 1914—had demonstrated the futility of frontal assaults.

In fact, Russian practice encouraged somewhat of a focus on light, small-unit tactics not unlike those Austrian forces in the Dolomites would eventually transition to. As a report by the Ministry of War explained in late 1914, the Russians would "often establish strong flank positions before their main line." This defensive allocation made any sort of central attack by a large force spread horizontally particularly punishing, as it allowed the defender to lay a potentially devastating field of enfilading fire. The Austrians quickly understood these positions had to be neutralized before any attack could succeed. Units were accordingly deployed in flanking maneuvers to eliminate them. But such maneuvers required, by design, a greater degree of agility, which in turn called for the use of smaller, dispersed forces (the recommended order of battle for these operations was two platoons per battalion, organized in "very thin lines at 500-6000 step spacing"). And though the discourse surrounding the use of such forces remained under the influence of prewar ideas (soldiers were told, for example, "that in apparently hopeless situations" holding position out was preferable over retreating), it showed traces of a more sophisticated understanding of war. The role of NCOs as figures of leadership in combat was noted, for instance, as was the importance of nurturing such leadership during training.[238]

For units like the 48th Infantry Division, fighting in Galicia would also provide some level of preparation for the adverse conditions offered by the Dolomites. The Russian front was characteristically harsh—it ran through the Carpathian Mountains and the Ukrainian flatlands, neither of which offered much respite from heavy snowfall and freezing temperatures.[239] Troops thus acquired important experience not just in withstanding the cold and operating in extreme environments, but also in the preparation of snow shelters, the digging of bunkers and tunnels, and

[238] K.u.k. Kriegsministerium, "Kriegserfahrungen und Folgerungen für die Ausbildung."
[239] Tunstall, *The Austro-Hungarian Army*, 151-76

communication across broken terrain.[240] It was easier for units that had engaged in these activities to understand the logic behind the transition to a more qualitative theory of warfare which took place in the Dolomites.

Combat in the east continued to teach lessons beyond 1914. As pressure along the Russian front softened with the gradual demise of the tsarist regime, units were moved to other theaters, including the Dolomites. They brought with them important combat experience and recommendations for reform. In Sector Command Cristallo (*Abschnittskommando Cristallo*), for example, the arrival of forces from the east encouraged the creation and integration of new, specialized positions. As the sector's commander explained in a directive to the XX Corps, these forces had relayed information on the appointment of "reconnaissance officers" (*Erkundungsoffiziere*) on the Eastern Front. These officers, whose responsibility it was to conduct "continuous observation of the enemy," had proven particularly effective in "identifying specific patterns in enemy behavior" and facilitating infantry-artillery coordination accordingly. In light of such effectiveness, the XX Corps was to immediately create a series of reconnaissance officer posts.[241]

What allowed the Austro-Hungarian army to develop a modern theory of war was thus not some internal condition that predated the outbreak of hostilities, but the very nature of the war it was called on to fight, a war on multiple fronts defined by a close relationship with an ally whose ability for tactical innovation was formidable. Again, then, the transformation of Austrian military theory observed in the Dolomites was far from an isolated event—it was the result of precise strategic and political conditions that spanned the European continent.

[240] K.u.k. 11. Gebirgsbrigade, "Disposition für den 24./XI.1914," November 24, 1914, AT-OeStA/KA FA NFA DK ID 48. ID 2638 (1915/1916, Train u.Techn.Akten), OSV.
[241] K.u.k. XX. Korpskommando, "Erkundungsoffiziere," June 28, 1917, AT-OeStA/KA NFA GAK Italienische Front Abschnittskommando Cristallo 1199 (Akten 1916/1917), OSV.

The Italians enjoyed few if none of the conditions that enabled the k.u.k. Armee's theoretical transition in the Dolomites. To start, there was the obvious fact that they were fighting a one-front war. With the exception of small expeditionary forces deployed to Albania and France in 1916 and 1918 respectively, the Italian army's war played out almost exclusively along a single, 600 kilometer front that stretched from the border with Switzerland in the west to the Adriatic Sea in the east.[242]

The inability to draw on men and experience from other fronts created a unique paradox. On one hand, it allowed the Italian command to focus on a single objective, concentrating resources and strategic attention on the Italian front to a degree the Austrians could not match given their multiple obligations. Logically, this should also have given the Italian army the opportunity to carefully develop its doctrine around the operational realities of this front, particularly those of the Dolomites. But a war fought exclusively on one front offered few opportunities for military dialogue or the intra-organizational exchange of ideas. Unlike the Austrians, who could test concepts and import lessons from their Russian front, the Italians had no external context in which to refine or challenge their assumptions. This made it dangerously simple for Italian officials to fall into a feedback vacuum, where flawed ideas were not only unchallenged but subtly reinforced by the absence of alternative perspectives. That explains, at least in part, why the CS's response to defeat appeared to be an even greater reliance on the doctrine of mass warfare. With no external stimuli to suggest otherwise, the solution to failure was not the reorganization of military theory but the accumulation of men and artillery.[243] It is indicative that the Regio Esercito's size peaked in October of 1917—2,431,000 troops, few of which knew any better than those who had started out in May 1915.[244]

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[242] Thompson, *The White War*, xii-xiii.
[243] [Regio Esercito], [Structure and Expansion of Italian Infantry and Cavalry Units], n.d., Fondo Studi e Documenti, MS.38, MSIG; Isnenghi and Rochat, *La Grande Guerra*, 195.
[244] Stevenson, *With Our Backs to the Wall*, 294.

To make matters worse, the outcome of operations on the Italian front carried significant political implications, which made innovation even more improbable. The most obvious one derived from the fact that the government had effectively gambled the fate of the Italian project on the expectation of military victory. In 1915, Italy remained a profoundly disjointed country, a large part of which harbored profound resentment for the government's lack of concern for rural and in particular southern communities.[245] The image of an *Italia irredenta* finally vindicated against its historic oppressor was seen as the key to fostering unity and completing a process of state building begun in the mid-19th century. By the same token, however, the failure of this gamble risked leaving Italy permanently fractured and politically disaffected. There is little doubt that this burden of expectation weighed heavily on the minds of Italy's military leaders, making them more averse than to radical, risky revisitations of military theory. No man exemplified this dynamic better than General Cadorna, Chief of the General Staff—Cadorna's father had led the catastrophic Italian advance on Trieste in 1866, and, on his deathbed, had clenched his fist to show his son the importance of absolute, centralized military leadership.[246] An omen for the rigidity and centralization the Italian army would come to espouse half a century later.

Further complicating reform efforts was the obvious absence of a military relationship between Italy and Germany. This seems like a trite observation given the clear disposition of alliances in the First World War, but it is in reality a critical detail which put the Italian army at an inherent disadvantage compared to the Austro-Hungarians. Though pioneered on the Western Front, German innovations in the war were, as previously explained, extremely well-suited to the nature of warfare in the Dolomites. OHL's focus on decentralizing the army as a military institution and commitment to the development of small-unit tactics aligned with the need for mobility, flexibility and independence when operating in a mountainous environment. But of course, there

[245] Clark, *Modern Italy*, 252-65.
[246] Thompson,

was little way for the Italians to access such innovations beyond observing the behavior of Austro-Hungarian units in battle.

And what the Italians could access was of little use. Throughout the war, in fact, British and French military theory evolved along lines notably different from those of its German counterpart. Owing in part to their clear material advantage, Britain and France were much more concerned with the integration of technological innovations and the orchestration of large operations.[247] The Western Front allowed for both in a way the Dolomites could not. The invention and deployment of the tank should highlight the problem. The flatlands of the Flanders created powerful incentives for greater mechanization, largely because of their topography.[248] Encouraged by such incentives the British and the French developed a system of war grounded in the use of armor in conjunction with other capabilities. But it was not conceivable to export this system to the Dolomites, where the very conditions that had brought it into being were absent. It is no coincidence that when they deployed in support of the Italian army in late 1917 Britain and France did not bring a single tank with them.[249] That is not to say that either ignored issues like operational autonomy, small-unit mobility or unit cohesion—by 1917 these had all been incorporated in the Anglo-French fighting apparatus.[250] But the fact remained that the pioneers of decentralized military theory had been the Germans.

For the Regio Esercito, then, theoretical innovations suitable for implementation in the Dolomites were either received second hand—which naturally had an effect on the degree to which they could be mastered—or scantily. This reality turned the Regio Esercito into a reactive rather than a proactive innovator. Emblematic of this passive approach to development was the creation of the *Arditi*, the Italian equivalent of the *Sturmtruppen*. Whereas the Austrians had been discussing the

[247] Stevenson, *With Our Backs to the Wall*, 206-10.
[248] J.P. Harris, "The Rise of Armor," in *British Fighting Methods in the Great War*, ed. Paddy Griffith (Ilford, United Kingdom: Frank Cass, 1996), 116-24.
[249] Stevenson, *With Our Backs to the Wall*, 212.
[250] Paddy Griffith, "The Extent of Tactical Reform in the British Army," in *British Fighting Methods in the Great War*, ed. Paddy Griffith (Ilford, United Kingdom: 1996), 1-19.

importance of deploying assault units in the Dolomites since at least the summer of 1916, it was not until mid-1917 that the CS ordered their training and organization, after they had experienced the devastating effect of *Sturmtruppen* groups.[251] They began to be used regularly in combat in 1918, but their quality was far from that of the *Sturmtruppen*, who had greatly benefitted by the training of the Germans and the additional time available to refine their practices.[252]

But it was not simply that the British and the French did not possess the abilities necessary to encourage reform within the Italian army. Indeed, it would be mistaken to say their armies achieved no degree of theoretical innovation in the first half of the war.[253] The problem was rather that, even where such innovation did take place, the nature of the Anglo-Franco-Italian relationship provided little incentive for its dissemination. The Allies had held great expectations for Italy after its entry into the war in May 1915, when Italian officials had promised they would be "in Vienna for Christmas."[254] The quick descent into trench warfare which followed this promise, however, soured relations between Britain and France and their latest ally. Over the following two years the Italian front would come to be viewed not as the source of a potential breakthrough against the Central Powers, but a stopgap that could do little more than tie down Austro-Hungarian forces. Privately (and at times not so privately), the Italians were accused of cowardice, their men referred to on more than one occasion as "ice cream vendors."[255] This particularly crude relationship hindered fruitful military dialogue, both because it added significant tension to any bilateral talks and because it made the other Allied Powers wonder whether assistance to the Italians was worth it so long as the latter could hold their line.

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[251] Paolo Morisi, *Fiamme Verdi: I Reparti d'Assalto nella Prima Guerra Mondiale: Adamello – Vallagarina – Monte Pasubio – Monte Grappa – Altopiano dei Sette Comuni* (Bassano del Grappa, Italy: Itinera Progetti, 2012), 23-33.
[252] [Comando Supremo], "Bollettino di guerra N. 1215 del 19 Settembre 1918," September 19, 1918, Fondo Esercito, 1.6, MSIG; Comando della 1a Armata, "Notiziario del 4 Novembre 1918," November 4, 1918, Fondo Esercito, 1.6, MSIG; Stevenson, *With Our Backs to the Wall*, 297.
[253] Aimée Fox, *Learning to Fight: Military Innovation and Change in the British Army, 1914-1918* (Cambridge: Cambridge University Press, 2018), 78-101.
[254] Cesare De Simone, *L'Isonzo Mormorava: Fanti e Generali a Caporetto* (Milan, Italy: Mursia, 1995), 202.
[255] Marcuzzi, *Britain and Italy in the Era of the Great War*, 78-87, 224-227.

Before the collapse of the Regio Esercito at Caporetto in November 1917, then, Italy found itself amid a politico-strategic landscape that provided few incentives and opportunities for the modernization of military theory that warfare in the Dolomites appeared to demand. This conclusion reiterates the importance of viewing the absence of such modernization—or in the Austrian case its proliferation—within the broader framework of alliances, continental strategy, and civil-military relations. It also provides an explanation as to why the development of the Austrian and Italian armies took markedly different paths in the Dolomites. This is not to say that such development was shaped uniquely by external forces. It is rather to suggest that these forces provided clear opportunities for and barriers to innovation in both armies. In other words, to conduct a wider analysis is to show that the Dolomite front was not an isolated microcosm of peculiar military practice, but instead a thread in a much larger fabric of European political and strategic events.

End of Empire

The k.u.k. Armee's stunning success at Caporetto and its remarkable developments in military theory concealed a fast deteriorating material situation. A war on multiple fronts had pummeled the Austro-Hungarian economy, which had been steadily contracting since 1914. By 1918, Austrian aggregate output had fallen to nearly 65 percent of what it had been in 1913. The war's demand for manpower (along with the absence of technical skills among a female workforce historically preoccupied with agricultural production) had also crippled employment, which was now almost ten percent lower than its pre-war level. The shrinking of the national workforce in turn limited the production of combat-critical materials like steel and cast iron. Together with the gradual depletion of natural resources, a growing reliance on German financial support, and rising inflation, this fall in industrial output greatly reduced the operational capabilities of an army in dire need of

fuel and ammunition. Poor harvests and a series of ensuing food crises only worsened the Austrian military predicament.[256]

For the forces tasked with defending the empire's southwestern frontier in the Dolomites, this process of economic deterioration proved particularly unfortunate. Starting in late 1917, the men of both the 11th and 10th armies began to suffer the effects of faltering production. There were no more new machine guns and heavy artillery units—officers were instructed to do their best to fix and extend the lifespan of whatever they had.[257] To limit the consumption of ammunition, officials were forced to introduce restrictions on when troops could fire their weapons (the men were told to fire only when authorized and in sight of the enemy). This despite warnings from officers that infantry and artillery units were running dangerously low on bullets and shells. Of even greater concern was the ever increasing shortage of coal and wood. The onset of winter meant demand for both was at its peak—wood was needed to build snow shelters, strengthen defensive positions and, crucially, heat barracks, while coal was necessary to operate the vehicles and trains used to bring supplies to the front. But such demand could not be met. Domestic coal production was down by 14 million metric tons compared to peacetime, and though precise figures are not available for wood, reports describe a similar deficit in supply. There was also a severe shortage of essentials like mountain boots and heavy garments that were fundamental to survival in the Dolomites.[258]

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[256] K.u.k. Armeeoberkommando, "Darstellung der materiellen Lage der Armee im Felde," July 18, 1917, AT-OeStA/KA AOK OpAbt Akten 534 (1917), OSV; Max-Stephan Schulze, "Austria-Hungary's Economy in World War I," in *The Economics of World War I* (Cambridge: Cambridge University Press, 2005), 79-88; Tunstall, *The Austro-Hungarian Army*, 2-7.
[257] K.u.k. 10. Armeekommando, [Report on Machine Gun and Artillery Shortages], 1917, AT-OeStA/KA AOK OpAbt Akten 531, OSV.
[258] K.u.k. Armeeoberkommando, "Darstellung der materiellen Lage der Armee im Felde," July 18, 1917; Operationsabteilung AOK, "Die materielle Lage der 90. ID.," July 1917, AT-OeStA/KA AOK OpAbt Akten 534 (1917), OSV.

The result was a particularly miserable winter in 1918. Many either froze or starved to death. Those who didn't emerged weak and emaciated.[259] But things were not to improve. By spring, in fact, the Austro-Hungarian economy was collapsing. Industrial plants were forced to shut down due to the acute shortage of coal and the inability of railways to sustain consistent transport (mostly due to a lack of fuel, the majority of which had come from Romanian oil fields now appropriated by the Germans).[260] Year-on-year production of ammunition fell by over fifty percent; that of rifles by over eighty.[261] Perhaps worst of all, however, there was almost nothing to feed the men with. Poor harvests, a fall in agricultural output of over fifty percent across most grains, and a dwindling supply of cattle meant that by the summer of 1918 troops were being sent into battle with less than two hundred grams of stale bread and one hundred grams of meat on their stomachs.[262] Many, particularly those stationed in the colder sectors of the front, developed severe bouts of scurvy.[263]

Meanwhile, conditions were slowly improving on the other side of the front. In late 1917, the Italian army's approach to warfare in the Dolomites had greatly benefitted from two events. First, in November 1917 General Cadorna was permanently relieved of command at the General Staff, following the disaster of Caporetto. Gone with him was the exorbitant level of centralization, discipline, and obstinacy that had characterized Italian military theory for the past two and a half years. In his place arrived General Armando Diaz, whose first orders included commissioning a report on the condition and fighting abilities of Italian soldiers.[264] Diaz, in fact, understood that the qualitative aspects of an army were just as important as its quantitative features, and he made it his priority to improve them. Rations became larger and richer, leave was raised, military welfare networks were expanded, and recreational activities organized for troops. One unit, the 46th

[259] Tunstall, *The Austro-Hungarian Army*, 323; K.u.k. Armeeoberkommando, "Darstellung der materiellen Lage der Armee im Felde," July 18, 1917.
[260] Shulze, "Austria-Hungary's Economy in World War I," 89; Tunstall, *The Austro-Hungarian Army*, 333.
[261] Thompson, *The White War*, 342.
[262] Deák, "The Habsburg Army," 309; Tunstall, *The Austro-Hungarian Army*, 323.
[263] Operationsabteilung AOK, "Die materielle Lage der 90. ID.," July 1917.
[264] Thompson, *The White War*, 324.

Infantry Regiment, was even allowed to organize a singing competition for companies in the southern sector of the Dolomites.[265]

Second, the shock of Caporetto encouraged Britain and France to deploy expeditionary forces to the Italian front in late 1917, as previously explained. The commanders of both forces were instructed to stimulate, over the first months of 1918, a gradual process of reform and reorganization within the Italian army. Along with a series of suggestions formally passed on to Italian officials, the British and the French established training schools in the rear "in the hope of instilling good doctrine and practice" into the Regio Esercito.[266] These provided instruction to commanders, officers, NCOs, and special personnel from both infantry and artillery units. Their primary objective was the encouragement of greater consideration for coordination, combined arms integration, and unit cohesion by way of stronger officer-infantryman relationships, all issues they had learned to appreciate on Western Front in their encounters with German forces.[267]

Starting in the spring of 1918, the Italian army's operations in the Dolomites began to show greater affinity for these intangible questions of force employment. Though no large-scale success à-la Caporetto was achieved during this time, internal communication and tactical organization revealed a new level of attention for the importance of such intangibles in the context of mountain warfare. Following a small, successful action on Mount Valbella (1,319 meters), Mount Col del Rosso (1,556 meters), and Mount Col d'Echele (1,306 meters), small peaks on the Asiago Plateau, the 1st Army's command summarized operations with a new doctrinal vocabulary:

> The loss of Monte di Valbella was immediately followed by the loss of Col del Rosso, and although reinforced, the Austro-Hungarians also lost Col d'Echele after a long, hard struggle…The victory was due to perfect cooperation between the artillery and the infantry,

[265] Nicola Oliva, *I Sardi della Brigata Reggio: Storia del 46º Reggimento Fanteria nella guerra del 1915-1918* (Cagliari, Italy: Edizioni Della Torre, 2021), 137-38.
[266] Edmonds and Davies, *Military Operations: Italy*, 128-29.
[267] Ibid., 134-35.

> so well coordinated and timely that our losses—though inevitably present—are said to be incredibly light, especially when compared to the results achieved.[268]

The tendency to evaluate success through quantitative measures remained of some influence, but this language indicated a shift in the army's understanding of modern warfare's dynamics was underway. Confirming the existence of this shift was the move to mobility and operational independence in the form of light assault units, the *Arditi*. Under Diaz, these grew to as many as 30,000, and they began to regularly feature in the Esercito's operations.[269]

Thus by mid-1918 the effective balance of power in the Dolomites and across the Italian front appeared to have shifted decisively in favor of the Italians. The Austrian army could no longer rely on its industrial base, leaving it in dire shortage of ammunition, arms, and critical resources. The physical condition of the troops was also extremely poor. On the other side was an army with a newfound understanding of modern warfare, a relatively strong economic backbone, and technical assistance. The writing was on the wall.

But the Austrians refused to cave. Indeed, the 11th and 10th armies were able to keep their front line intact and unmoved up until October. Given the sustained pressure they were under and the material condition of their army, the ability of the Habsburg forces to hold their ground appeared remarkable. Even more remarkable was that nearly all units continued to behave coherently, in relative respect of authority, and effectively, as reported by officers.[270] Such steadfastness owed much to the cohesion and efficiency which had been prioritized during the reforms of 1916 and 1917.

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[268] Comando della 1a Armata, "Notiziario del 2 Luglio 1918," July 2, 1918, Fondo Esercito, 1.6, MSIG.
[269] [Comando Supremo], "Bollettino di guerra N. 1215 del 19 Settembre 1918," September 19, 1918; [Comando Supremo], "Bollettino di guerra N. 1236 del 10 Ottobre 1918," October 10, 1918, Fondo Esercito, 1.6, MSIG; Stevenson, *With Our Backs to the Wall*, 297.
[270] Gunther E. Rothenberg, "The Austro-Hungarian Army in the First World War: 1914-1918," in *East Central European Society in World War I*, ed. Béla K. Király and Nándor F. Dreisziger (New York: Columbia University Press, 1985), 293-98.

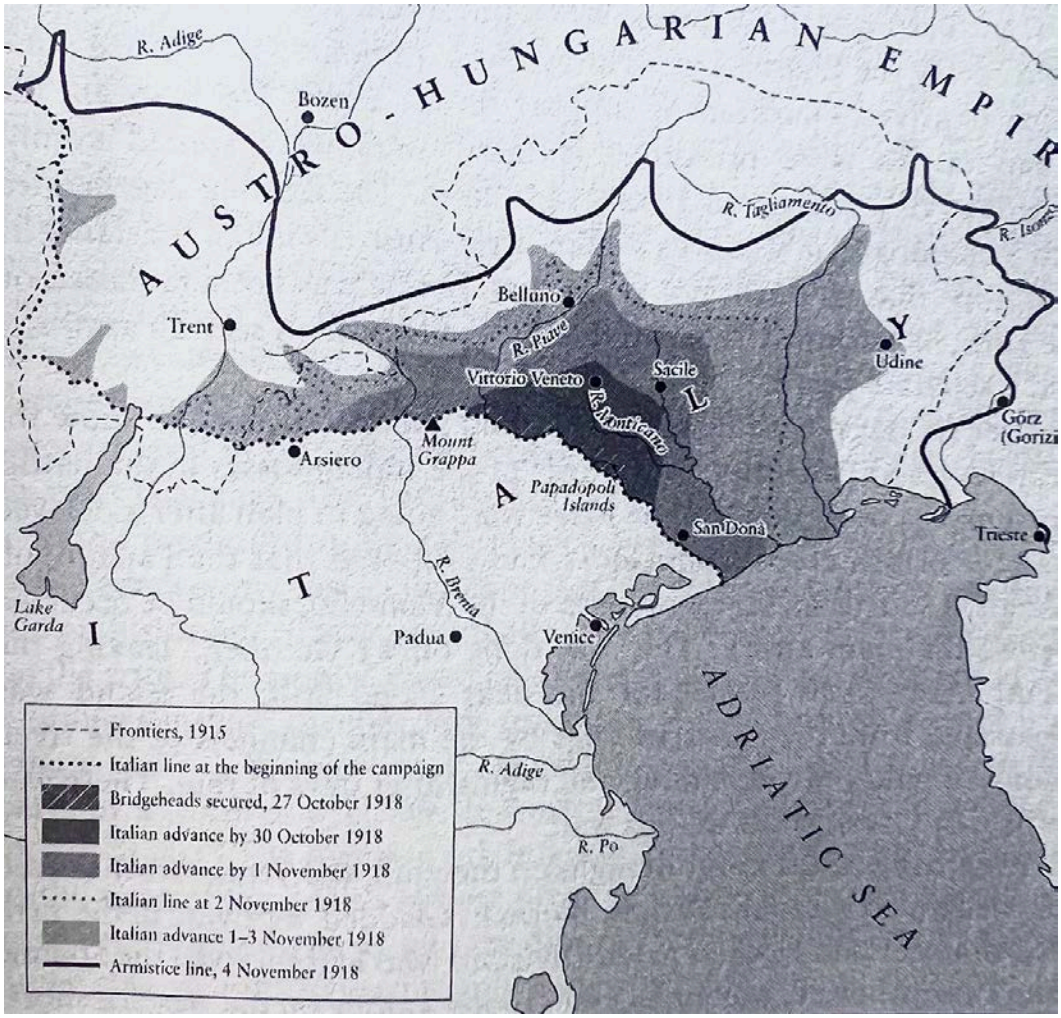

Figure 7 - Final Italian advance, October 27 - November 4, 1918[271]

If the endurance of the Austrian army appeared inconceivable in light of the Dual Monarchy's deepening material crisis, its destruction little more than a week later proved even more astonishing. On October 24, exactly a year after the Caporetto disaster, the Italian army launched what would be the last major operation of the war. Supported by several French and British divisions, its attack aimed to splinter the Austrian front line—a main thrust would push towards Vittorio Veneto, break through the Austrian front, and leave the armies in the Dolomites and on the Isonzo vulnerable to envelopment by the Esercito's 1st and 4th Armies. By November 2nd, the

[271] Thompson, *The White War*, 357

Austrians had collapsed. In the Dolomites, the 10th and 11th Armies that had held out for so long amid the harshest of conditions were being chased up the Adige Valley. They quickly devolved into fractured amalgamations of desperate men. Command broke down, supply depots were set on fire, and towns looted as chaos erupted and the armies were routed. Mountain roads could not sustain the immense number of men and material that were being jammed through them, and even though much was abandoned to lighten the load, hundreds of thousands of prisoners were taken by the lighter, faster Italians. By November 3, Italian troops were in Trento, the symbol of *Italia irredenta* that had mobilized Italy in 1915. The following day an armistice was signed at Villa Giusti near Padua. The war was over, throughout the Dolomites and across the Italian front.[272]

The collapse of the 10th and 11th Armies was not unexpected of course. The crisis into which the Dual Monarchy had fallen by 1918 certainly made it difficult to imagine that the Habsburg forces could sustain their war effort for much longer, particularly in an unforgiving environment like the Dolomites. At the same time, however, material conditions alone do not explain the stunningly rapid disintegration of the k.u.k. Armee and, more importantly, the system of modern warfare it had developed over the past two years. The army had held out under critical supply conditions for the entirety of 1918. And even long before that, it had been used to operating on the brink of insufficiency.[273] Austrian developments in military theory arose in spite of such insufficiencies, not in their absence.

What, then, had changed? In short, the politics of the empire. Together with a crumbling economy, changes to the domestic and international political landscape triggered the unraveling of the fragile political order that had kept the Dual Monarchy alive until 1918, and that had provided the sufficient conditions for military reform. A growing food crisis, the impending defeat of the

[272] Thompson, *The White War*, 328-68; Morisi, *Fiamme Verdi*, 232.
[273] K.u.k. 15. Korpskommando, [Directive on Reducing Artillery Ammunition Consumption], September 14, 1914, AT-OeStA/KA FA NFA DK ID 48. ID 2638 (1915/1916, Train u.Techn.Akten), OSV; K.u.k. Armeeoberkommando, "Einteilung von KavOffz. bei der Infanterie," January 26, 1915; K.u.k. Armeeoberkommando, [Memorandum on Reinforcements and the Strategic Situation], August 26, 1917, AT-OeStA/KA AOK OpAbt Akten 534 (1917), OSV.

German army on the Western Front, and the demands for self-determination of President Woodrow Wilson gave way to the explosion of nationalist unrest in October. All across the empire national movements began to call for and declare independence from the monarchy. Czechoslovakia, Hungary, Yugoslavia, Poland, Ukraine, and even Austria (where a social-democratic movement had slowly been gaining traction) revolted against the Habsburg establishment. A desperate attempt by Emperor Charles to convert the empire into a federal republic failed—the hunger for autonomy and resentment for the monarchy had grown too great. As national councils were formed in nearly all of the empire's major cities, they called on their men to return home and protect their people.[274]

This alone would have been enough to threaten the cohesion of the Austro-Hungarian army. But there was more. On October 16, the Hungarian Prime Minister Count Mihály Károlyi declared in a speech that for Hungary the war was effectively over—it was time, announced Károlyi, for national consolidation. Around the same time, rumors began to spread among the troops that Charles was actively pursuing an armistice, as indeed had been the case since at least September.[275] For the soldiers of the 10th and 11th Armies, then, there were now severe incentives to no longer participate in AOK's military system.

On October 24th, just as the Italian offensive on Vittorio Veneto was taking shape, mutiny erupted across units. The first to refuse to take to the front line was the 38th Honvéd Infantry Division, a Hungarian unit in the 11th Army. Summoned by the divisional commander after their men had begun tossing grenades at anyone approaching, the officers of the 38th declared that the ongoing dissolution of the Dual Monarchy and the recent declarations of Count Károlyi gave them no further reason to fight for the Habsburgs. The II Battalion of the 25th Losoncz Infantry Regiment, another Hungarian unit under the command of the 11th Army, was next to refuse orders. Attempts were made to negotiate with the 38th and 25th, but ultimately the emperor declared that

[274] Taylor, *The Habsburg Monarchy*, 233-51.
[275] Rothenberg, *The Army of Francis Joseph*, 209-17.

they should be allowed to return to Hungary as demanded.[276] News of their departure spread like wildfire. Soon, units of all types were resisting deployment and requesting repatriation. The result was that by October 31, as the Italian offensive neared its climax, the 10th and 11th Armies could rely on little more than half of the men they had mobilized just a week earlier.[277] This stunning disintegration of fighting capability left wide gaps on their front and flank for the Italians to exploit.[278]

The nature of the modern system of warfare developed by the armies in the Dolomites directly contributed to the pattern of this collapse. At the core of this system and the shift in military theory it produced was decentralization. The operational conditions of mountain warfare had demanded greater independence and responsibility of officers and soldiers. Over 1916 and 1917 the AOK thus began to relinquish authority to individual units, relaxing discipline in favor of more effective training. To this was added a greater focus on the cohesiveness of units, which was deemed essential for the successful conduct of operations far away from supply lines and command centers. Though AOK officials likely did not understand this at the time, the result of these new priorities was that the army's center of gravity moved downwards. A particularly perceptive commander, Major General Adolf von Aust of the 90th Division, warned of the dangers of this change in 1917. Writing on the present condition of his forces, he observed:

> The complaint of the commanders is essentially that they never have their men firmly in hand and that their training and discipline are, fundamentally, in the hands of the platoon commanders (NCOs)…There can be no doubt that under such circumstances…the troops […] are left to themselves and their capabilities.[279]

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[276] Austrian Federal Ministry of the Army and War Archive, *Austria-Hungary's Last War, 1914–1918*, vol. 7, ed. Edmund Glaise-Horstenau and Rudolf Kiszling, trans. Stan Hanna (Vienna: Publisher of Military Science Releases, 1938), 692-96.
[277] Ibid., 724.
[278] Ibid., 746.
[279] Operationsabteilung AOK, "Die taktische Lage der 90. ID.," July 1917, AT-OeStA/KA AOK OpAbt Akten 534 (1917), OSV.

In other words, by 1918 it was AOK that depended on units for its ability to operate, not the other way round. This new arrangement made it impossible for the k.u.k. Armee to sustain its defense without the collaboration of its men.

A further problem was the importance of coordination in this new model. Before the reorganization of 1916, the army was a unitary whole which operated not as a network of units but a distinctive block. Though this sharply reduced its flexibility and fighting quality, it meant it could lose parts and continue to operate as intended. So long as its nucleus, the AOK, remained intact, there was no reason to fear disintegration. After 1916, however, this stopped being the case. Decentralization transferred the burden of operational decision-making from AOK to units (which greatly improved planning and adaptability). As such, it made coordination imperative for continued operation. If, as happened in October 1918, consensus broke down among units and gaps emerged in their connective tissue, the consequences would be disastrous.

The system of warfare that emerged in the Dolomites elevated the importance of the human factor in military function and organization. By doing so, however, it tied such function and organization to the very nature of the modern citizen as an eager political and social participant. All of a sudden, the nationality, emotions, and political inclinations of troops could determine the continued existence of an army. This enfranchisement of the soldier was anathema to the military theory that had guided officials before the war, when quantity had ruled over any degree of human complexity. It was also what had sealed the fate of the Austro-Hungarian army and the Habsburg Empire, both within and beyond the Dolomites.

EPILOGUE

FORGOTTEN SACRIFICE

The Alpini of the Feltre Battalion could not understand what the hold up was. They had been racing to Trento for the past couple of days, but now, on the morning of October 30, appeared to be stuck outside Mattarello, less than ten kilometers from the city they had gone to war for three years ago. Slowly the word began to spread. A Hungarian *Sturmtruppen* battalion had blocked the road. According to reports from those at the head of the Italian column, the *Sturmtruppen* were refusing to surrender. They claimed that an armistice had gone into effect in recent hours and thus that they were under no obligation to surrender their arms to the Italians. The Alpini were in no mood for negotiations, however. They encircled the *Sturmtruppen*, manned their machine guns, and warned the enemy resistance would only lead to more bloodshed. The commander of the Hungarian battalion gave in. He promised to surrender, but asked Colonel Farcovi, the commanding officer of the Feltre Battalion, to hold his advance for a few minutes. Then, he gathered his men in the courtyard of a nearby 18th-century villa. The *Sturmtruppen* assembled in square formation, and the major began addressing them in Hungarian. He gave a brief speech, his voice broken by sobs. The men looked on with tears in their eyes. Finally came the order to disarm. The Hungarians methodically untied their belts and neatly collected their weapons in the center of the courtyard. They then assembled in line and marched towards the Alpini as prisoners of war.[280]

* * *

The encounter between the Alpini and the *Sturmtruppen* complicates the established narrative surrounding the collapse of the Austro-Hungarian Army on the Dolomite front. As discussed in the preceding chapter, by October 30, 1918 the 11th and 10th Armies had devolved into chaos. The front had collapsed, and with it so had their structure. Mutiny, death, and general desperation had

[280] Angelo Manaresi, *Ricordi di guerra, 1915-1918* (Chiari, Italy: Nordpress Edizioni, 2000), 139-43.

splintered the armies into a disorganized melee of scattered units. Against the backdrop of such confusion, the continued discipline, order and pride of the Hungarians encountered by the Feltre Battalion at Mattarello appears remarkable. Not just for their enduring cohesion, but for their ability to stave off the influence of nationalist politics that had led so many other units to dissolve and return home. It is tempting to attribute such positive behavior to the superior training, cohesion and esprit de corps of assault units, but there is ample evidence of *Sturm* battalions mutineering in weeks before the armistice of November 4.[281] In other words, the experience of the Hungarian *Sturmtruppen* provides an uncomfortable exception to the linear narrative of internal implosion used to explain the k.u.k. Armee's final days.

The problem becomes even greater when the events of October 1918 are analyzed in detail. Though it is true that broadly speaking the 10th and 11th Armies crumbled under the weight of the Italian offensive and Austria-Hungary's imperial catastrophe, the instances of units that continued to offer resistance and fight effectively until the armistice of November 3 are too many too ignore or treat as outliers, as many have done. Indeed, the initial Italian attack on the Dolomite sector, launched on October 24, resulted in a stunning defensive victory for the battered Austro-Hungarian army. On Mount Grappa (1,775 meters), which protected the Austrians' left flank in the Dolomites and which the Italians needed to take to envelop the enemy, over 24,000 Italian troops would fall between the 24th and the 28th to no avail.[282] Over the course of these five days k.u.k. units of all ethnicities defended their positions atop the Grappa. Between the 27th and 28th they even launched a successful counterattack on several neighboring heights they had lost during the Regio Esercito's initial attack.[283] West of the Grappa another defensive bastion, the Asiago Plateau, was also successfully protected. So impressive was the performance of the Austro-hungarian troops that on

[281] Austrian Federal Ministry of the Army and War Archive, *Austro-Hungary's Last War*, vol. 7, 695.
[282] Morisi, *Fiamme Verdi*, 210-13.
[283] Austrian Federal Ministry of the Army and War Archive, *Austro-Hungary's Last War*, vol. 7, 682-89.

the 28th Army Group Tyrol reported to AOK it was confident its men could hold the front for "as long as the ammunition lasts."[284]

Resistance continued into the following week and beyond. On the 29th, the Belluno Army Group (a combination of units from the 10th and 11th Armies) repulsed another attack on the Grappa. Remarkably, among the forces involved in this defensive action were units just like those that had set off the wave of mutinies a week earlier, like the 20th Honevéd Division.[285] The Belluno Army Group was forced to retreat on the night of the 30th, not because its fighting capacity had suddenly broke down but because the Italians had broken through Isonzo front, forcing the Austrian 6th Army of General Boreovic into a retreat and exposing a dangerous gap on the group's left flank which could not be filled.[286] In a testament to the continued commitment of many of its men, several artillery units held their position until the last rounds of ammunition had been fired, before blowing up heavy guns that could not be carried away.[287]

Even as the front began to show signs of an impending collapse, some continued to fight. Two Schützen regiments successfully covered the retreat of the Belluno Army Group on the 31st, conducting a fierce rearguard action that inflicted important casualties on the Italians. On November 1, even as the 11th Army was beginning to disintegrate, straggling units continued to hold out on the Asiago Plateau.[288] On that same morning the 52nd Infantry Division repulsed the much better equipped British 48th Infantry Division.[289] The westernmost part of the front saw even stiffer defiance. In the 10th Army's sector, for example, the Carinthian Volunteer Rifles of the 164th

[284] Ibid., 691.
[285] Ibid., 729-30.
[286] Giulio Primicerj, *1918: Cronaca di una Disfatta: Testi e Documenti Austriaci sul Crollo Militare dell'Impero Absburgico* (Milan, Italy: Arcana Editrice, 1983), 181–85.
[287] Austrian Federal Ministry of the Army and War Archive, *Austro-Hungary's Last War*, vol. 7, 764.
[288] Ibid., 766.
[289] Ibid., 777.

Infantry Brigade protected the Stelvio Pass (2,757 meters) until November 3rd despite fighting with less than a fifth of their men, at subzero temperature, and with not cold-weather gear.[290]

It would thus seem as if there were two faces to the Austro-Hungarian army's final days in and around the Dolomites. One is that of a military institution overwhelmed by internal anarchy that could not withstand the pressures of domestic political upheaval. The other that of a force that remained capable of operating effectively and coherently until its dying breath, despite a catastrophic material situation and the disintegration of its leadership. What is most perplexing is that the two pictures co-existed, often within the same sector.

How to reconcile this contradiction? Some have claimed the geographic features of the Dolomites, in particular their isolation, slowed the dissemination of political news among the men of the 10th and 11th Armies.[291] The obvious problem with this argument is that, as we have seen, neither army behaved consistently—some of its units appeared unaffected by the proliferation of nationalist uprisings at home, while for others domestic upheaval became a mutinous cause. Others have pointed to the resistance of Tyrolean Kaiserjäger units in the retreat to Trento as evidence that unchanged combat performance should be attributed to the socio-ethnic significance of the Dolomites for local troops.[292] Again, however, the issue remains that those who continued to fight effectively included both locally-sourced units like the Kaiserjäger and troops from the deep hinterland of the empire; the same goes for those that decided to mutiny. Finally, many have simply observed the dichotomous nature of the k.u.k. Armee's collapse without inquiring into its causes.[293]

The truth, of course, is that the exact reasons behind the decisions and performance of units in the last week of the war will never be known—the importance of individual ideas and emotions to said decisions and performance is too great to make any definitive claim on the matter. The question

[290] Hans Rainer-Harbach, *Geschichte der Kärntner Freiwilligen Schützen im Weltkriege* (Klagenfurt, Austria: 1930), 224-36.
[291] Austrian Federal Ministry of the Army and War Archive, *Austro-Hungary's Last War*, vol. 7, 7648.
[292] Thomspon, *The White War*, 361-64.
[293] Rothenberg, "The Habsburg Army," 294-98; Tunstall, *The Austro-Hungarian Army*, 355-58.

should thus be not why dichotomy emerged in the Austro-Hungarian army, but how. Here, too, returning to the reforms of 1916 proves useful. As described earlier, these reforms had brought about a process of significant decentralization which transformed the army into a federal-like organization of units. As authority was distributed horizontally, soldiers and officers came to control their fate. Both because they now enjoyed a far greater degree of operational autonomy and because AOK no longer possessed, especially after 1917, the resources to effectively support them. To this were added intense efforts to promote small-unit cohesion.

By 1918, then, the average Austro-Hungarian unit in the Dolomites was mostly independent of the rest of the army and, barring a few troublesome exceptions, more united. It should not be difficult to see how both these qualities facilitated divergent behavior in the army's final days. What emerged from the theoretical realignment of 1916 was an organization in which allegiance was felt to the unit, and, perhaps more importantly, in which the conduct of operations could be determined at lower levels of authority. Given the extreme heterogeneity of the Dual Monarchy's forces, it is no surprise, given the features of this military model, that the decisions of units varied significantly in the days following the Italian offensive of October 24.

In other words, the system of modern warfare that developed in the Dolomites throughout the First World War was a two-edged sword. On the one hand, it vastly improved the quality of whatever army chose to adopt it. But on the other hand, it tied the survival of said army to the continued participation of officers and soldiers in a decentralized apparatus of relatively independent, cohesive units. Though the nature of this apparatus allowed for such units to continue functioning even amid a more general collapse, it also ensured the army as a whole would break down the minute fissures appeared in its structure. It was this decentralized model of military organization that completed the death of the Austro-Hungarian empire, because its very effectiveness depended on a level of cohesion the imperial order could no longer sustain.

There was an inherent tension in the structure of the modern army, a contradiction between operational efficacy and institutional reliability. This tension did not originate in the Dolomites, but nowhere else was it revealed with such clarity. The mountain, inhospitable for anything massive, demanded an immediate redistribution of authority from top to bottom. As the Italians would find out, to refuse this demand was to refuse any possibility of success. But the mountain was also a profoundly isolating place which brought the unit together in a way the flatland could not. Through its topography, it severed armies and separated divisions, making the unit the soldier's primary point of reference, responsibility, and belonging. Cohesion and operational autonomy were thus not just encouraged—they were required for survival. In the mountain, the unit became a self-reliant microcosm. The result was that the modern army was more federation than autocracy. To function as an integral whole, it required internal alignment and perfect coordination. Only like this could it hope to collectively maneuver the individual microcosms of which it was made.

For the fascist regimes that would emerge in the wake of the First World War, this created a fundamental problem of military administration: if decentralization was necessary to defeat the enemy but also a cause of fragility, how could an army be effectively controlled? For these regimes this was a particularly important question—fascism sought to appropriate the military as an extension of the party and a political tool of policy.[294] Thus neither Adolf Hitler nor Benito Mussolini could hope to achieve their objectives with a disjointed group of unreliable forces. To address the problem they turned to ideology. If under the modern system of war the soldier's mind had become the catalyst for victory, then it had to be co-opted. Through such indoctrination the fascists resolved the incompatibility between mass and operational efficiency that had ground the Italians and Austro-Hungarians to a halt in 1915. Absolute confidence in the soldier's predicted behavior allowed a command center to safely delegate authority, because it provided a guarantee that

[294] Robert O. Paxton, "What Drives Radicalization?," in *The Anatomy of Fascism* (London: Vintage, 2004).

units would not abuse the independence afforded to them by decentralization. The problem, of course, was that by the end of the Second World War these soldiers had run out, and the tensions of the modern army returned. In some sense, then, for the American soldier puzzled by the stubborn resistance of German units in April 1945, the answer lay not on the Rhine but amid the peaks of the Dolomites.

* * *

The Dolomites were proving ground as well as battleground, a space in which the anachronism of mass warfare in the modern age was laid bare, and where a new current of military theory emerged. This current combined a precise understanding of the importance of politico-strategic conditions in offering opportunity and disaster with an unprecedented appreciation for the role of human behavior in determining military outcome. The attempt of the Austro-Hungarians to master both elements extended the lifespan of the Habsburg dynasty, but, against the backdrop of increasingly unfavourable domestic and international circumstances, it also premeditated its end.

This was modern warfare—a complex synthesis of politics, strategy, economy and humanity. Whereas before the war military officials had structured each component around the army, it was now necessary to do the opposite. The story of the Dolomites in the First World War is thus the story of the genesis of modern warfare. This, ultimately, was the greatest contribution of this front, where a white death gave birth to a new understanding of war.

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AOK OpAbt Akten 527

AOK OpAbt Akten 530

AOK OpAbt Akten 531

AOK OpAbt Akten 534

FA NFA BK IBrig/GebBrig 51. SchBrig 603

NFA DK ID 48. ID 2638

NFA KK XX. Korps (neu) 2831

NFA GAK Italienische Front Abschnittskommando Cristallo 1199

NFA Formationen Deutsches Alpenkorps 1931

BS I WK Fronten Tirol, 1915-1918

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