Chapter 8
The World War I Tactical Maps of the Italian Army: Proposals for a Typological Classification, an Interpretation of Symbols and a Digital Analysis of the Cartographies in the Historical Archive of the Third Army

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Abstract Innovations in military operations during the First World War have been widely documented by international historiography. The necessities of trench warfare and their consequences in the production of military maps, however, still require in-depth study. Accordingly, this paper addresses military maps preserved in the Historical Archives of the Italian Third Army in Padua, Italy. The Third Army had a

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crucial role in the conflict, as it settled along the Piave River after the Retreat of Caporetto and later led the final advance toward Istria. We focus on tactical maps, i.e., maps that were continuously updated during battle, to show the evolution of frontline positions and activities. The analysis of this map collection opens a new research path for interpreting map symbols and typological classification categories depicted on military maps. Major attention has been paid to the Italian Istituto Geografico Militare printed maps that were continuously updated by hand on the battlefield during military operations. First, the map corpus is described; second, a typological classification and semiotic decoding (based on interpretation of the map symbols) is carried out; and finally, a digital analysis using georeferencing and data vectorization of troop movements and battlefield dynamics is presented.

Keywords Military cartography · First World War · Historical geography · Historical GIS · Tactical maps · History of cartography

8.1   Introduction

The interpretation of the First World War (WWI) as a watershed, with reference to the history of military cartography, was raised in 2014 at the 5th International Symposium of the International Cartographic Association (Liebenberg et al. 2016). This discussion inaugurated a research path culminating in a special issue of the 2018 International Journal of Cartography. Essays dealt with map production in the British, American, Russian, German, and Austro-Hungarian armies, and included an in-depth study of the advances in photogrammetry and its role in the conflict (Chasseaud 2013; Collier 2015b; Schneider 2017; Demhardt 2018).

Since the dawn of their history, *ars bellica* (the art of war) and cartographic practices have been closely linked (Lacoste 1976). For a long time, the knowledge and representation of space have been directly subjected to political and military activities. Since the end of the nineteenth century, the evolution of military sciences and military operations, as well as the progressive professionalization of geographical studies and cartographic production, led to a remodeling – but certainly not to an attenuation – of this link (Francis 2014). The First World War represented a significant turning point because of the unprecedented mobilization that involved science and technology in the conflict and the advances developed during its course (Collier 2015a, b; Fox 2018). For these reasons, international studies agree in defining WWI as "indeed a terrible mother of invention" (Demhardt 2018, p. 241).

Until now, international literature has neglected the Italian situation. However, several Italian scholars from the field of historical geography have begun to address it (Bondesan and Scroccaro 2016; Dai Prà 2018; Masetti 2018; Chirico and Conti 2018). In this paper, we analyze a selection of the military maps produced and used by the Army of the Italian Kingdom during WWI. The cartographic corpus of the Historical Museum of the Third Army in Padua has been chosen for this case study because it consists of a unitary set of documents that have been preserved since the end of the conflict. Among the different types of maps and aerial photos produced

during the war, our work focuses on tactical maps, those that were updated daily during battle to depict the evolution of front line positions and activities.

Our aim is to propose an initial approach to the analysis of Italian military maps produced during WWI to shed new light on both the role of cartography in the conflict's strategies and tactics, as well as the impact of the war on cartographic practices. First, the corpus of maps is described; second, a typological classification and semiological decoding based on the interpretation of the symbols used on the maps is presented; and finally, a digital analysis using georeferencing and vectorization of data is outlined. The latter includes a solution for the digital representation of troop movements and battlefield dynamics using the QGIS software (https://www.qgis.org/en/site/ accessed 27 July 2020).

8.2   The Documentary Corpus of the Italian Third Army

The Third Army played a crucial role during WWI. In May 1915, it was positioned in the Carso and Trieste areas of operations (SW of the border front between the Italian Kingdom and the Hapsburg Austro-Hungarian Empire) with the initial task of containing attacks carried out by the Austro-Hungarian Army (Fig. 8.1).

Fig. 8.1 Location map showing the border between the Austro-Hungarian Empire and the Italian Kingdom before and during WWI, with place names indicating the areas of the Third Army operations

Command of the Italian Army was entrusted to General Emanuele Filiberto of Savoy-Aosta; Cervignano del Friuli was designated as headquarters in the war zone. The Third Army gained a prominent role during the Isonzo battles, which lasted from June 1915 to the late summer of 1917. The battle of Caporetto (24 October to 19 November 1917) resulted in the collapse of the Italian Front and advance by the Austro-Hungarian Army of more than 100 km in the direction of Venice. The Third Army had retreated to the Piave River line without having been directly defeated and thus, rightfully earned the title of "The Unbeaten." From there, it was able to contain the Austro-Hungarian advance to participate in the battle of Vittorio Veneto (24 October to 3 November 1918) and to lead the final advance to Istria and Trieste (Jung 2000; Morselli 2001; Gibelli 2007).

After the end of the war in July 1919, the Third Italian Army was dissolved. Most of the documents related to its activities were divided between the Ufficio Storico dello Stato Maggiore (Historical Office of Italian Army High Command) in Rome and local archives in Padua. In 1956, General Alberto Aliberti, the head of the Italian Northern Interregional Defence Forces Command, established the Historical Museum of the Third Army (Museo Storico della Terza Armata) in Padua to safeguard local relics and documentation. The museum houses numerous historical sources – only partially inventoried – which were produced during WWI by the Central Command or by the offices and subordinate bodies of the Third Army. The archive contains about 13,000 text documents, 4,000 volumes, 5,000 aerial and ground photos, and 1,000 maps, focusing primarily on the Carso and the Basso Piave areas. This documentary corpus has a heterogeneous composition including photo albums, reports, trench newspapers, and manuscripts written by officers and their subordinates, in addition to war bulletins, telegrams, pigeon-post, and correspondence. Despite – or thanks to – this heterogeneity, this archival collection provides a basis for understanding the daily routine in the Third Army during the war years.

The map collection itself is a complex documentary *corpus*. The maps produced between 1914 and 1919 are heterogeneous, as they were prepared using different procedures to meet the varied needs of the troops during the military operations. Recently, these WWI maps have been organized into different categories based on their content and use (Dai Prà, Gabellieri 2020a). The five categories include base maps, tactical maps (representing the locations of troop units, artillery positions, and defensive lines, or those created for artillery calculation purposes), predictive maps (for the planning of offensives), engineering maps (for the identification or planning of bridges, transport, long-distance communication or defensive flooding), maps prepared specifically for Allied armies, and intelligence maps (copied from captured enemy maps or produced using information collected by spies or during aerial surveys).

8.3   The Tactical Maps

At the outset of the war, the Italian Army was equipped with the *Grande Carta topografica del Regno d'Italia*, a comprehensive map of the territory of the Kingdom developed by the Istituto Geografico Militare (IGM; Military Geographic Institute) at a scale of 1:100.000 (Cantile 2013). For the most important strategic areas (such as the NE regions close to the border with the Austro-Hungarian Empire), more detailed sheets at a scale of 1:25.000 (the IGM *tavolette*) were available. Starting from May 1915, the IGM focused its activities on the support of the Italian Army.

Throughout Europe, the rapid transformation from a war of movement to a war of position prompted an equally rapid change in the use and the very nature of military cartography (Chasseaud 2013). The dynamics of the clashes, with battles that often raged for days within a few square kilometers, made it necessary to use large-scale maps almost exclusively. For example, updated, accurate, and precise topographic maps were fundamental tools for the calculation and planning of artillery fire. Furthermore, troop positions changed daily, rendering maps rapidly obsolete, and requiring the maps to be replaced or updated quickly.

To gain better knowledge of the battlefield, and especially due to the new nature of the conflict as a trench war, it was necessary to prepare even more detailed maps at a new scale of 1:10.000 by photomechanical enlargement of the available 1:25.000 sheets. Geometrical elements such as geographic grids were added to some sheets, to facilitate artillery calculations (Collier 2015b; Cantile 2019). Around 20,000,000 maps of the battlefields were printed by the IGM during the conflict to supply Central Command and the frontline units (Mori 1922).

Despite these efforts, IGM maps were unable to meet the needs of headquarters and local commands, both of which required constantly updated maps showing day-by-day changes at the front. Therefore, daily maps were produced using the IGM sheets as a base and adding handwritten information on the location of troops, artillery identification, and the positions of trenches, as well as other data that could be of relevance to military operations. These continuously updated maps produced to represent the constant changes on the battlefields were used by all the armies involved in the war and are referred to as tactical maps (Chasseaud 2013; Schneider 2017; Espenhorst 2018).

Tactical and strategic information about the state of enemy positions was obtained from the reports of troops, interrogation of prisoners, enemy maps taken as spoils of war, and most importantly, from the interpretation of aerial photographs. Despite the limits of a technical field that was still developing, aerial photographs and their interpretation allowed information services to collect a large amount of both systematic and general data: "From being a tool of interest to a relatively narrow group of surveyors and instrument designers, photogrammetry moved into the mainstream" (Collier 2018, p. 286). As a matter of fact, the use of the Air Force for intelligence purposes was one of the most important advances in military operations during the war. Camera design and photographic technologies had undergone

significant improvements in the 1910s (Espenhorst 2016; Carbone and Ciaschi 2018). The Air Force or the Centro di Raccolta Informazioni (Centre for Collecting Information) collected data over the front and then shared it with Army headquarters and its cartographic offices (Dai Prà and Gabellieri 2020b).

However, military reconnaissance flights were not the only innovation. During the conflict, armies experimented with new weapons, defensive and offensive strategies, and new technologies (Fox, 2018). For example, innovations such as machine gun positions and trenches required the creation of new symbols and taxonomies to be recorded on the maps. Each map was then provided with a special legend necessary at a time when the symbolic categories were not yet adequately codified and universally shared. Initially, the date (and sometimes even the time of creation) was recorded on each sheet, demonstrating the transitory nature of these maps.

8.4   The Maps Produced in the Last Years of the War

Because the tactical maps represented daily situations, they were continually destroyed and replaced with new and updated ones. For this reason, most of the preserved maps date from the last two years of the war. The maps prepared in the last few months of the war, between 1 June and 30 November of 1918, form a homogeneous collection: 203 maps comprise this series. They depict the final advances of the Third Army from the Piave River into the Istria region within the territory of the Austro-Hungarian Empire (Fig. 8.1).

The counteroffensive on the Piave River and the subsequent advance towards Istria began in October 1918. The maps, which were produced daily or even more frequently, show the gradual progression of the Third Army battalions and brigades through time towards the east. The last map, produced on 10 July 1919, after the end of the conflict, shows the position of the Italian occupation troops in Trieste and Istria.

As noted above, the maps in this collection were produced to record the daily positions of Italian troop units. They show, with a high level of detail, the changing front. Since they were produced when the Austro-Hungarian Army was retreating and the Italian Army was occupying new territory every day, their aim was to record the location of the advancing army, not the positions of enemy defenses. The maps display battalions, brigades, and changing artillery positions, as well as the locations of headquarters and supply units. Different symbols and colors are used to mark their position. On the bottom of each map, the cartographers have noted the production date. In contrast to other map series, the ones in this collection have no grid. This absence indicates that they would not have been used for artillery barrage purposes.

Figure 8.2 shows one of the first maps in the collection. It records the troop positions (both on the front line and in the rear), the names or the codes of the brigades and battalions present, the names of the division commanders, and precisely when it was produced (2 June 1918, morning). At the bottom of the sheet, the code

Fig. 8.2 Overview of a tactical map showing unit locations on 2 June 1918, with data and information highlighted. (Modified from HA 1918a; used with permission from Director of the Museum of the Third Army, Padua)

Riservatissimo (Top Secret) indicates that this map was intended to be used only at the command level, and not at the front, as it contains sensitive information, which should not fall into enemy hands. Only some of the analyzed maps have the code *Riservatissimo* written on them.

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Some of the data inscribed on the maps differ slightly among the documents, as shown on the map of Fig. 8.3, which highlights the division of the front into different sectors. In Fig. 8.4, a map created on 1 November 1918, after the beginning of

Fig. 8.3 Example of a tactical map showing unit locations on 17 June 1918 with the front line divided into sectors. (From HA 1918b; used with permission from Director of the Museum of the Third Army, Padua)

the offensive arrows, indicates the forward movement of the troops. Due to the new battalion positions, the division into sectors has completely changed.

Whereas all the maps produced prior to 2 November 1918 covered the same geographic area, beginning on 3 November, the base sheet was altered to map the changing unit positions during the offensive. Figure 8.5 shows a map composed of three different sheets, which represent the territory between Trieste, Udine, and Venice through which the troops were advancing.

8.5   A First Analysis of the Symbols Adopted on Military Maps

The cartographic corpus described in the previous section consists of a series of printed IGM maps enriched with handwritten information that has been added in pencil and pen. The purpose of these maps was to provide headquarters with timely available information about the state of the battlefield. These documents are a

Fig. 8.4 Example of a tactical map showing unit locations and movements on 1 November 1918. (From HA 1918c; used with permission from Director of the Museum of the Third Army, Padua)

Fig. 8.5 Example of a tactical map composed of three sheets showing unit locations during the advance toward Trieste in November 1918. The attribute *approssimativo* (approximate) in the map name demonstrates that the situation was rapidly changing. (From HA 1918d; used with permission from Director of the Museum of the Third Army, Padua)

particular case/set of thematic maps, which had to meet the daily needs of troops as well as solve the problems posed by accurate representation of mobile battle formations and inclusion of novel equipment. Machine guns, bunkers, and other war innovations required parallel innovations in map symbolism.

Analysis of these old maps and handwritten updates confirms the artistry and attention to detail by the technicians and military experts of the time, as well as their ability to interpret tactical aerial photographs. A careful analysis of the map symbols is necessary to gain a full understanding of the information contained in the thematic maps (Delano-Smith 2007; Dai Prà 2013). Such an assessment can be even more fruitful in a period of cartographic innovation like that of WWI.

As noted above, the tactical maps in this period were produced using daily reports by field unit commanders and the interpretation of aerial photographs from aerial reconnaissance operations. The information obtained from aerial photography had to be processed before being transcribed onto the maps. The transcription, called the reporting process, consisted of subjective interpretation involving at least three steps/individuals of the person who collected the data, the person who transmitted it to the cartographic offices, and the mapmaker himself. During the last year of the war, cartographers already had a settled inventory of usable symbols at their disposal, which had been previously developed and tested and which was probably known to everyone at the time. This is suggested by the absence of a legend on most of the later maps. The symbol taxonomy remained unchanged in the entire map corpus. However, despite this homogeneity, differences in style among the tactical handwritten maps should also be noted. For example, on some maps, the Piave Front during the defensive phase is divided by dotted lines into different areas of operation defined by Roman numerals (Figs. 8.2 and 8.3). These are further divided into sectors; others are divided into subareas that are identified with a letter plus numbers in succession. This methodology for classifying different sectors was abandoned during the offensive.

A focus on the use of semiology suggests that some symbols were useful for the Army: flags, squares, banners, standards, or ensigns were, therefore, directly related to the respective military symbols. The symbols used on the maps to represent units on the battlefield include squares, circles, flags, and rectangles, which indicated the different levels of the command structure in the Army. For example, a square corresponds to a battalion (or to part of one), which at that time was the basic field unit; a square with a dot, to a battalion equipped with artillery; and a colored polygon, to the area in which the battalion was quartered. Due to the limited availability of colored pencils, the chromatic range was limited, and, in many cases, colors were repeated for different brigades.

A square with a small anchor inside indicated Royal Navy battalions, revealing the presence of naval units on the Piave Front located next to the coast. A square containing two colors indicated a cavalry battalion or squadron. The names of the brigades (named after cities or geographical areas, e.g., Foggia or Veneto) and the numeric codes (in Arabic numerals) of the battalions are written in pencil next to the symbols, in order to easily identify them. The names of the brigades are written in full.

   The different colors indicated the different brigades composing the battalions. Commands are represented by flags: a banner with Roman numerals indicates the Commands of the Army Corp, a colored flag corresponds to brigade command, and a small black flag is a battalion command. Specifying the hierarchy of the units can provide a comprehensive view, offering a full understanding of the key or legend. The order is, from largest to smallest: armies, corps, divisions, brigades, regiments, battalions, companies, platoons, and squads.

   By comparing these symbols with existing legends from other contemporary maps, plus using guidelines written by the Ministry of War before the conflict (Ministero della Guerra, 1912) and the cartographic standards of the following years, an interpretation of the different symbols has been developed and is shown in Fig. 8.6.

   Even artillery and machine guns had different symbols, depending on the type. The basic symbol defining an artillery unit during the war was a circle so that it would be immediately differentiated from infantry units: in this case, the standardization used during the war completely diverges from the cartographic symbols
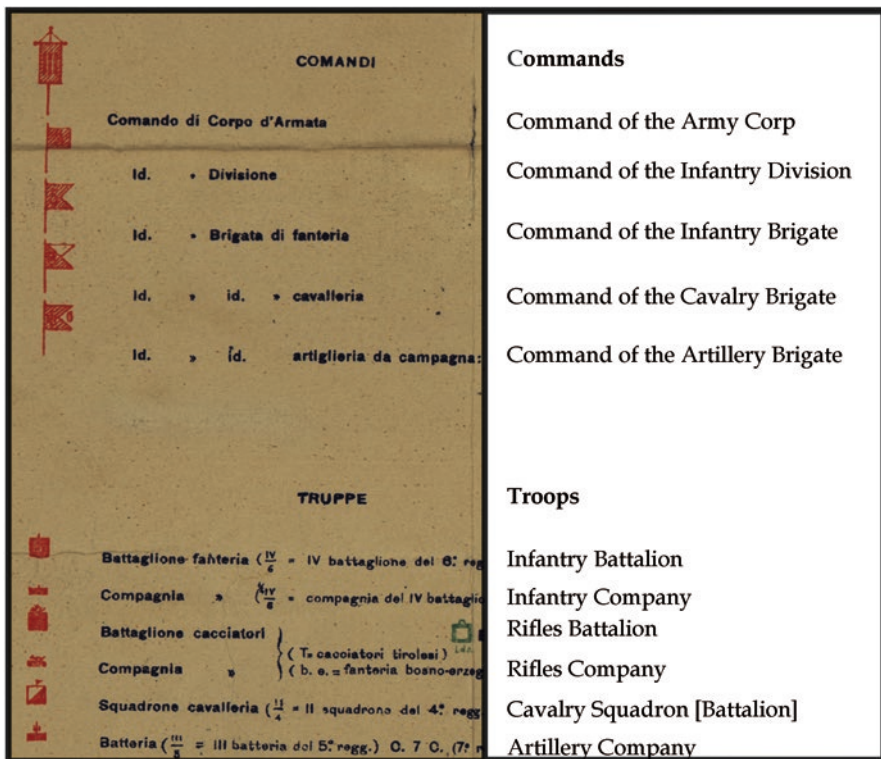

Fig. 8.6   One of the legends from the Third Army military maps that has been used for deciphering the symbols used on the maps produced late in the war. (Modified from HA 1915a; used with permission from Director of the Museum of the Third Army, Padua)
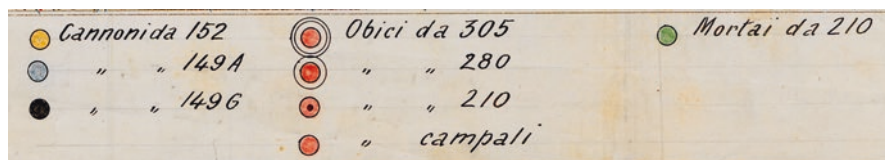
Fig. 8.7 Example of a legend with different symbols for each type of artillery piece. Different colors refer to different guns (cannon, yellow; howitzer red; and mortar, green). The taxonomy specifies the caliber of the gun (from heavy to light, such as the *campali*). The letter specifies the material from which the cannon is made, with "A" indicating steel (*acciaio*), and "G," cast iron (*ghisa*). (From HA 1915b; used with permission from Director of the Museum of the Third Army, Padua)

developed by the Ministry of War before the conflict when an artillery unit was shown with a circle with many lines inscribed and overwritten according to a different type of guns (as in Ministero della Guerra 1912), in favor of simpler and more easily understood symbols. Different colors represented the type and nature of artillery pieces (e.g., cannon, howitzers, mortars, and bombards). As shown by the legend in Fig. 8.7, the different sizes and colors of the circles were related to the size of the guns. The number is related to the caliber of the piece, and the letter specified the material. In this case, the map legend shows the presence of older cannons made of cast iron (letter G, *ghisa*), together with modern cannons made of steel (letter A, *acciaio*). Although steel and cast iron cannon were the most common during the war, some maps also indicated that bronze cannon (B) from the nineteenth century were still being used by the Italian Army.

According to Chasseaud (2018), at the end of the war, the armies of three of the allied countries (United Kingdom, France, and Italy) had developed a shared and common symbology for most war elements to be depicted on maps. These symbols, which differed from those used by other countries such as Germany, the United States, and Russia (the USSR after 1922), remained mostly unchanged until the Second World War when other innovations in military operations and mapping technologies resulted in changes in map evolution (Hershey 2012). In 1949, with the establishment of the North Atlantic Treaty Organization (NATO), the use of a new coherent and standardized taxonomy, largely inspired by that developed in the United States, became mandatory. Even though it has been slightly modified, it is still in use and has been incorporated into the APP-6A NATO Standard (US War Department 1941; Traversi 1968; Stato Maggiore dell'Esercito 2000).

8.6   A Digital Analysis and Visualization: From Georeferencing to the Time Manager Plugin

According to Burrough (1986, p. 6), a Geographical Information System (GIS) is "a set of tools for collecting, storing, retrieving at will, transforming and displaying spatial data from the real world for a particular set of purposes," or the software environment that allows the data to be organized in a database management system.

GIS software is nowadays applied to the production of geographical information to understand spatial dynamics in many different disciplines. Among them, Historical GIS (HGIS) has been defined as an interdisciplinary research tool that can integrate the most advanced techniques and tools from geographical information sciences with the sources and the methodologies of historical and geohistorical research. By these means, researchers can reach a better understanding of past spatial dynamics and collect data for historical interpretations (Gregory 2002; Knowles 2002; Grava et al. 2020).

For example, HGIS has been successfully applied to the study of the First World War to identify the physical heritage of the war such as trenches and bunkers. The digitization, georeferencing, and vectorization of battlefield aerial photos, by which trenches can be identified in the current landscape, is one of the main methods of battlefield archaeology (Stichelbaut 2005, 2006). GIS software can also be used to process WWI tactical maps to create a comprehensive geodatabase. For instance, HGIS was developed in the fields of military history and military geohistory utilizing historical maps as the main source to identify routes followed by armies (Piovan et al. 2017), assess planimetric accuracy of historical military maps (Giordano and Nolan 2007), or reconstruct battlefields and the strategies used in some of the most important battles in history (Maio et al. 2013).

Maps provide different information from aerial photos. First, they can represent features of the battlefield not visible in photos (for instance, names of military units or headquarters and supply locations); moreover, the integration of multiple maps can allow reconstruction of day-by-day events along a front. Secondly, maps contain extracted and symbolized data that are more easily understood than aerial photos, particularly for identifying hidden positions or for recognizing various types of artifacts (e.g., the military road, path). On the other hand, maps, as selected reproductions of real spaces, have inherent limitations: they often only record some of the elements or can have imprecision in location.

The maps produced during the final offensive have been digitized and georeferenced using IGM maps as bases; the information contained in them has been vectorized whenever possible (Fig. 8.8). Twelve maps were digitized and information, including the positions and the name of units on each map, were vectorized in the form of point elements. In order to focus on the advance to Trieste in the last months of the war, one map for each month from 17 June 1918 to 17 October 1918, plus four maps representing changes from 17 October to 17 November 1918 when the military situation changed faster, were digitized. The last digitized map was produced on 10 July 1919 and shows the brigade quarters in occupied Istria; it is the last one produced before the dissolution of the Third Army. In this way, it has been possible to develop a geodatabase with registered positions of the different brigades for each day.

The areas controlled by each Italian or Austro-Hungarian Army on the eve of the outbreak of the conflict, as well as those of the Third Army units on the Piave Front, and the changes over time have been pinpointed. The digitized corpus will be increased in the future: for example, the daily nature of the data on the various maps will allow the identification of the topographic position of each brigade and battalion as well as the reconstruction of its advance.
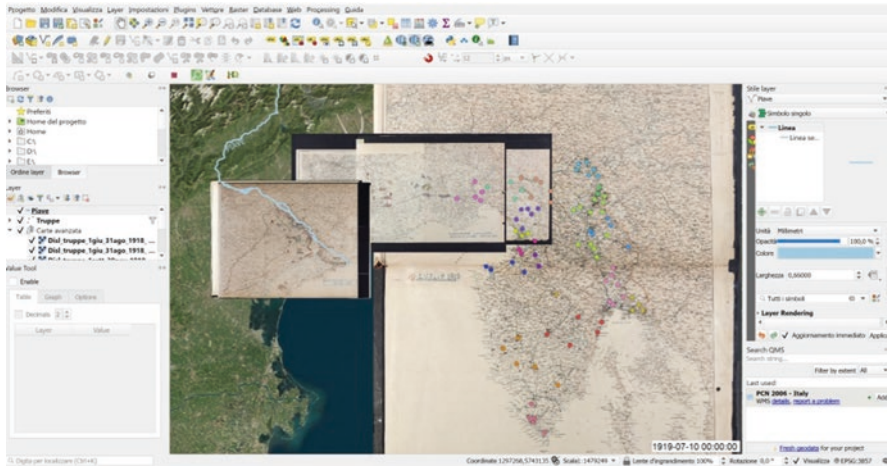
Fig. 8.8 Screen caption of the HGIS with georeferenced maps and vectorized data, such as the locations of battalions

Using the new QGIS Time Manager Plugin (see https://plugins.qgis.org/plugins/timemanager/ accessed 31 July 2020), it has also been possible to make a video showing progress during the final stages of the war. Time Manager is a plugin of the QGIS software that allows spatial data to be animated and visualized. The attribute table of a vector layer needs to have a time data parameter, in the form of a date and the time of day. The Time Manager plugin has great potential as it allows integration of the time data parameter in software developed essentially to focus on synchronic analysis (Stuckey 2017). It has been successfully applied to map social and environmental changes that have occurred over time (Zehele 2015; Lovejoy 2019).

Time Manager is a simple and effective tool for visualizing tracking data such as troop movements. Our dataset contains 669 positions for 88 battalions in 36 brigades collected from 12 tactical maps produced between 16 June 1918 and 7 July 1919. The plugin automatically filters the point elements related to a particular date, showing their different positions each day. The points appear and disappear on the map according to the configured time lapse. It is possible to use different images in the background, such as the original topographic maps, or contemporary aerial photos from the Bing website that are integrated into the Plugin.

Individual images from each time frame can be exported and then converted to a video using a movie maker application. In this way, an animation that shows the different positions of brigades and battalions through time has been developed (Fig. 8.9). The Third Army appears to be settled on the Piave River Front until October 1918, with only limited battalion movements. The advance began in November 1918, and the troops moved quickly into the current Veneto and Friuli territories. By July 1919, the Army controlled the whole Istria peninsula. In addition to carrying a high information value, especially during the offensive, the final video is based on the topographical location of each battalion.
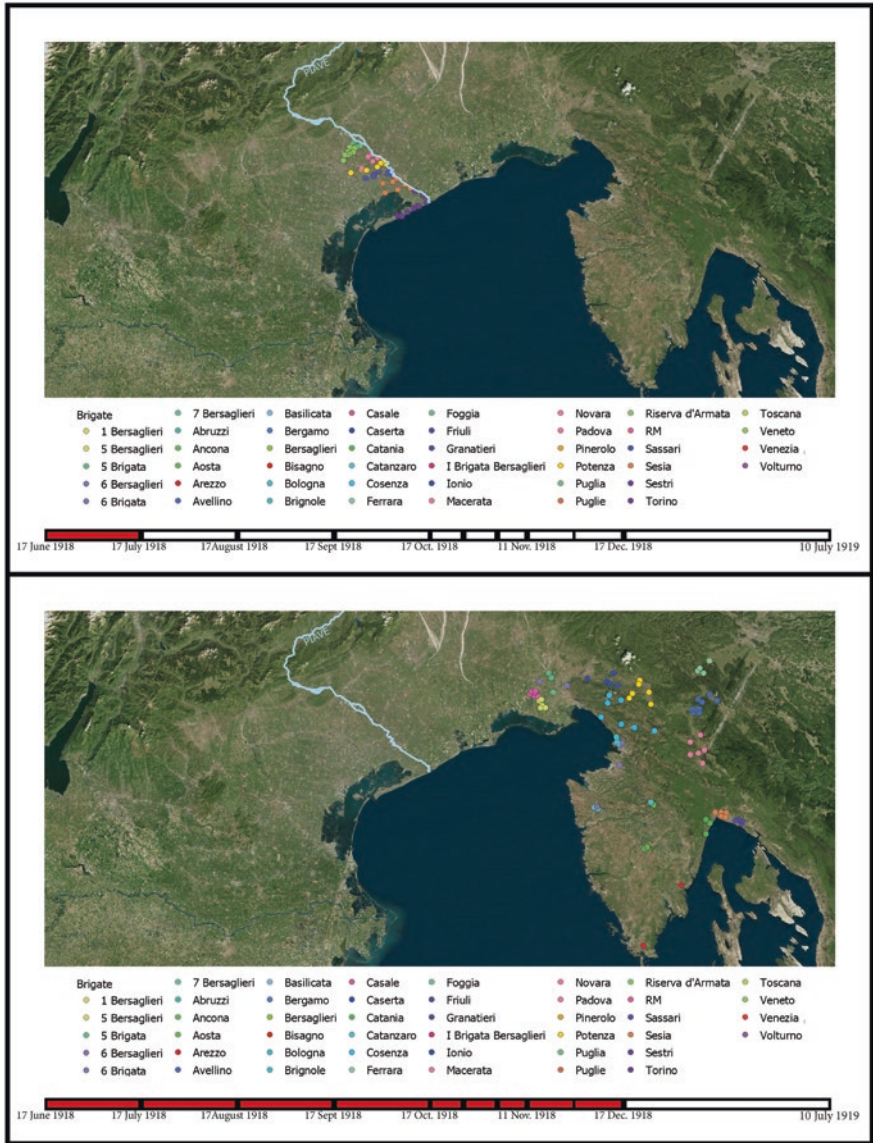
Fig. 8.9 Frames from the video showing the advance of the Third Army towards Istria from June 1918 to July 1919, developed by analysis of digitized historical tactical maps using the QGIS plugin, Time Manager

8.7   Conclusion: Military Maps as Both a Source of Information and a Cultural Heritage

Military geohistorical sources, such as maps and aerial photographs, are a heuristic device with multiple values. They are relevant both for the rediscovery of military events and their spatial analysis (Knowles 2013) and for gaining a better understanding of spatial dynamics and their application to territorial management and planning (Fuchs et al. 2015).

Large-scale tactical maps, as well as smaller-scale operational maps, had great importance in tactical operations and the planning of military operations during the First World War. Research using the archival collections of the Museum of the Third Army in Padua allowed access to documents related to cartographic production during the war. Additional textual and cartographic documents are housed in other archives located in different barracks; these need to be identified and inventoried.

In particular, it appears urgent not only to safeguard the cartographic documents from oblivion and dispersion but also to refine, with an appropriately critical approach, the tools and categories of analysis and taxonomic classification required for the study of symbols and for a critical interpretation of this documentation. Such intervention is necessary to allow scholars and members of the armed forces to fully understand and easily gain access to such data. This ambitious path can open a new and unique opportunity for bilateral knowledge exchange and common effort between the Italian Army and civilian academic institutions, in order to approach and assess such a complex field of research.

In order to enhance these sources and to make them accessible to the larger public, digital procedures should be developed. According to Azzari (2010), digitizing historical maps makes it possible to increase the range of analysis methods, to preserve them, and to share them via the web or other user-friendly interfaces (Azzari 2010; see also Jobst 2011). The construction of an HGIS for First World War battlefields could be useful for gaining a better understanding of war dynamics, as well as for developing media tools that can be used in various ways for public dissemination and education. In this case, the Time Manager video of the final advance in Italy at the end of the First World War will be screened at the Museum of the Third Army in Padua.

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