Postwar Remnants in the Periurban Forest of Thessaloniki, Greece
- A Two Paths Proposal for Tourism and Environmental Education

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Abstract
Wars, in the classical sense of term, have negative effects on the landscape and leave various traces above or below the ground surface or in the bottom of the sea. Today, many of the postwar landscapes are the result of natural ecological succession, while others, after an appropriate landscape design, present touristic and educational interest. Tourism in the postwar landscapes can be considered as cultural tourism, appealing mainly to tourists-pilgrims. Thessaloniki, during its long history, has been a field of military operations. Some of them, especially the most recent ones, have left their remnants on the surrounding forest landscape. During the First World War, the allied powers (Entente) for example, built various infrastructures such as trenches, concrete fortifications etc. Many of these installations, despite their deterioration over time, can still be seen today. The postwar landscape in the periurban forest of Thessaloniki has partially recovered. However, heavy constructions remain in their original place and can be a pole of attraction for visitors. This paper recommends two paths, 2,500 m and 2,200 m long respectively, connecting visible elements from the First World War, which are located in the northeastern part of the periurban forest of Thessaloniki. These paths can connect a military cemetery, with four cylindrical concrete fortifications (pill boxes) of this war, scattered in the forest. In this cemetery soldiers of the Commonwealth Nations have been buried during the War. This postwar landscape could contribute to the development of battlefield tourism or tourism related to the postwar landscapes and it can also be used in the implementation of relevant environmental education programs. Postwar landscapes require very careful planning and proper management in order to be functional and effective.

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Keywords
Postwar landscapes; Cultural tourism; Dark tourism; Forest paths; Environmental trail.

1. Introduction
All wars, in the classical sense of term, at all stages, have a direct and indirect impact on the landscape, where they leave various traces above or below the surface (Tsiouri, 2015). The postwar landscapes have largely regained their former state in the form of farms, villages and towns or in the forms of wetlands, rangelands, and forests, under natural ecological succession. In some cases, natural vegetation has covered the war traces (Hupy & Koehler, 2012). Charlesworth & Addis (2002) characteristically state that natural ecological succession threatens to erase history.
Nevertheless, in some battlefields various traces or heavy constructions above or below the ground surface or in the bottom of the sea can be found (Tsiouri, 2015, Tsiouri et al., 2018). Some postwar landscapes, after an appropriate landscape design and management, present touristic (Kavrečič, 2017, Hadas Zahavi, 2022) and educational interest (Tsiouri et al., 2017, Tsiouri et al., 2020). Tourism in the postwar landscapes can be considered from the prospective of cultural tourism as a form of dark tourism, appealing mainly to tourists-pilgrims (Collins-Kreiner, 2010, Olson & Korstanje, 2019). Postwar landscapes can also be used in the implementation of relevant environmental and peace education programs (Tsiouri et al., 2020, Tsiouri, 2022).

The city of Thessaloniki, during its long history (2,338 years), was many times a field of military operations. Some of them, especially the most recent ones, have left their traces mainly on the periurban landscape. During the First World War (Great War), the allied troops (Entente) supported the Macedonian front, also known as the Salonica front (after Thessaloniki). These troops built infrastructures such as bridges, roads, airports, hospitals and various defense works such as trenches, concrete installations etc (Mann, 2010, Hekimoglou, 2010, Mourellos et al., 2018). The defensive fortifications, built on the hills surrounding Thessaloniki, are known in the relevant literature as "Birdcage". This name is due to the huge amounts of barbed wire, that were used for their construction. Many of these facilities, despite their deterioration over time, are still visible today, 100 years after the war. The postwar landscape in the periurban forest of Thessaloniki has partially recovered. However, heavy constructions such as concrete fortifications (pill boxes), remain in their original position (Rouka, 2014, Tsiouri, 2022).

2. Problem statement and Study aim

The periurban forest of Thessaloniki hosts today various cultural landscapes, some of which are related to issues of war and peace and all of them are of ecological interest. In the context of the present research, war remnants were discovered in the periurban forest and the problem is that they have not been studied and utilized until today. The aim of the present study is to describe and recommend forest paths, connecting elements from the First World War, which are located in the northeastern part of the periurban forest of Thessaloniki. These paths can connect a military cemetery, with four cylindrical concrete fortifications (pill boxes) of this war, scattered in the forest, which is under natural ecological succession. These war remnants, with appropriate architectural planning and management, could receive visitors, interested in historical tourism and schools, implementing environmental education programs (Tsiouri, 2015, Tsiouri, 2020, Tsiouri, 2022). Historical-pilgrimage tourism and environmental education have great growth prospects in Greece. The two recommended paths, connect visible postwar elements with invisible to ordinary visitors war remnants, as the latter have partially covered by diverse vegetation. These paths, with nature-friendly clearing and proper signage, could contribute to the development of battlefield tourism and they can also be used in the implementation of relevant environmental education programs.

3. Review of the Literature

Until recently, many scholars studied wars and postwar landscapes by focusing on military, social, economic and legal issues, rather than on tourism and peace education (Papadopoulou, 1990, Olson & Korstanje, 2019). An ever-increasing number of visitors are becoming interested in postwar landscapes. Tourism related to postwar landscapes can be considered as cultural tourism. For the sustainability of tourism in postwar landscapes, the existence and understanding the authenticity of the offered touristic product, is essential (Charlesworth & Addis, 2002). There is of course the need to take into account the special interest of the visitors (target groups). Different categories of people visit the postwar landscapes, according to their motivation, and the type of visitors changes over time. According to Lloyd (2014), there were three distinct groups of visitors to the postwar landscapes of the Western Front, between 1919-1939: a) Travelers, who hold a real interest and appreciate the meaning of battlefields or relevant monuments, b) Tourists, who do not show much interest in the battlefield or the monuments, but consider them as tourist attractions and c) Pilgrims, who express special feelings or religious devotion. Visitors to postwar landscapes are usually pilgrims rather than tourists. Pilgrimage travel is a journey resulting from religious causes, externally to a holy site, internally for spiritual purposes and understanding (Barber, 1993). Pilgrims are usually widows, veterans and close relatives, descendants of war victims who are interested in their family history.
The tour in a postwar battlefield requires a charismatic guide who can clarify what exactly happened in this landscape and why. Mention the exact time, persons, possible causes and results of the previous conflict. Such tours are of interest to veterans, history lovers, peacemakers, military men and educators. The local and economic development of postwar landscapes and surrounding areas is referred to as a postwar development engine in the international literature (Van Mispelaar, 2013) and it is a mixture of education, environmental protection and profit.

For a more complete study and understanding of humanity's war behavior and the acquisition of relevant lessons, among others, it is necessary to preserve, to show off and to improve public access to the material and spiritual heritage of wars. Visits, not only to the relevant museums and monuments, but also to the battlegrounds of the past, help visitors to perceive these fields as historical cultural landscapes of multiple significance. The presentation of these landscapes with the appropriate narrative design help the tourists to understand history and appreciate the true dimensions and consequences of wars.

The preservation of postwar landscapes and their promotion (Birbaum, 2006) is an extremely difficult and painful task for people, because the borderline between injustice and justice is often indiscernible. Many of the postwar landscapes keep alive the memories of the traumatic past and it is extremely dangerous politically, because the constant reminder of the events, that happened there, can bring certain groups into conflict and threaten the social cohesion of the people. However, these landscapes can also function as means of teaching and raising public awareness, to students or to historical tourism visitors (Tsiouri et al., 2017), aiming at avoiding ethnocentrism and any form of violence and highlighting the world peace by preventing future conflicts (Kester, 2008). But to promote a culture of peace, we need to teach the modern concept of peace (Sloan, 1983, Papadopoulou, 1990, Burns & Aspeslagh, 1996, Papadopoulou, 2004), which, of course, is not just a state of non-war, but something broader. This teaching will contain understanding, cooperation, quality of life, freedom, individual rights, dignity, mutual respect, intercultural communication and a general return to humanity (Mathaioudaki, 2004, Moschona & Efstathiou, 2004, UN, 2015).

Sloan (1983) had written that peace which ignores the ecological crisis is not sustainable. Reardon & Nordland (1994) suggest the violence of armed conflict, the violence of oppression and poverty and ecological violence are part of the framework and driving force of peace education. Similarly, Toh & Floresca-Cawagas (1987), Bjerstedt (1990), Castro (2001) include violence against the Earth in their studies of violent tendencies that humans face on a planetary and interpersonal level. Definitions of peace proposed by relevant educators included the concept of peaceful coexistence of man with nature, suggesting, for example, that ecological balance must underpin any definition of peace (Hicks, 1998). The absence of environmental impacts due to pollution and radiation is considered one of the dimensions of peace. Biodiversity and ecological well-being is the foundation of a positive and sustainable peace. According to Castro (2001) a cross-cultural definition of the international peace of peoples is linked to the sustainability of the Earth ecosystem. Based on these expanded definitions of peace, environmental issues were included in the concepts of holistic peace education (Toh & Floresca-Cawagas, 1987, Vriens, 1990, Bjerstedt, 1990, Reardon, 1999).

Many of the postwar landscapes, both in Greece and in other countries, are places for educational excursions, in the context of learning the local history, combined with peace and environmental education, especially if the narrative of the landscape is careful and not propagandistic. After such experiences the visitor of a postwar landscape, goes over various issues such as the meaning of wars, related emotions, prejudices and human potential and limits (Bormanis, 2010). Visits in postwar landscapes are part of the secondary school curriculum in some countries. In the UK the Great War is taught to children, visiting the Beaumont Hamel Newfoundland Memorial Park in France, where a history teacher stays with the students for at least an hour and participates in action in a field survey of this postwar landscape. A path has been integrated into the landscape, which evokes to the movement of soldiers during the war and offers the visitor a new way of understanding the war landscape (Gough, 2004). A highly visited postwar landscape is the Peninsula National Park in Gelibolu, Turkey (Yılmaz, 2008). The declaration of the area as a national park was a first step in the effective preservation of the monuments of the local First World War battles, which contribute to the development of postwar cultural landscape tourism. Another example of an interesting postwar landscape is the historic region of Italy Venezia Giulia. Friuli Venezia Giulia is – also known in English as the Julian
March. During the 19th century this area developed some diverse touristic destinations as seaside and thermal health resorts, rock climbing and cave tours. After the First World War these forms of tourism continued to develop along with a new form, which included visiting former battlefields (Šuligoj, 2016, Kavrečić, 2017). Tourists visit, war landscapes, war cemeteries, concentration camps etc. In this area is the Monfalcone Theme Park, which opened to the public in 2005. Visitors of this park can explore a historic war zone, where several battles took place. In this park there are many war remnants such as fortifications, trenches, artillery positions, memorial stones etc. In addition to ordinary touristic purposes, postwar landscapes can be used in relevant environmental education programs. The environmental education that includes holistic approach in peace education is most effective, particularly when it takes place in the countryside. Well-informed and properly trained tour guides or teachers have a duty not only to increase the number of visitors to post-war landscapes, but also to contribute to the sustainability of the natural ecosystems and peoples' peace.

4. Methodology

The present case study could help other people to discover, understand and learn the unknown postwar remnants in the periurban forest of Thessaloniki. These remnants help visitors to appreciate history and the true dimensions and consequences of wars. The method used in this research was literature review and field research. In the literature review related terms and subjects were studied. Postwar well-managed landscapes in other countries, which attract visitors were also identified. In the context of the Ph.D. field research (Tsiouri, 2022), many visits to the periurban forest of Thessaloniki were made in order to search for interesting topics, suitable for environmental education, some of which were also of touristic interest as the topic of the present paper is. During the field research, Google maps and Wikiloc navigation applications were used. The Wikiloc map provided the most information due to the app's ability to map routes, during field research. During these visits, the exact location of the paths, the length and the variation in elevation along each route, were captured through these mobile phone navigation applications. The geographic coordinates of the common entrance of the trails were also recorded. Along the routes, the current state of individual landscapes, including natural and cultural elements, was photographed. The final map resulted from a synthesis of the National Land Registry and the Google maps combined with images sourced from the Wikiloc application.

5. Results and discussion

The proposed paths (A and B) for tourism and environmental education are located in the northeastern part of the periurban forest of Thessaloniki (Tsiouri, 2022). The entrance to both paths is from the village Exochi, a community of the Pylaia-Chortiatis municipality. The particularity of the two paths is that they contain postwar elements, which are a military cemetery and four cylindrical concrete fortifications (pill boxes) of the First World War (Fig. 1). In this well-managed military cemetery (Fig. 2), soldiers of the Commonwealth Nations have been buried, during the War. The vegetation in many places of the paths is low with a dominant species the kermes oak (Quercus coccifera).
The 2,500 m long trail (A) starts from the northeast side of the periurban forest. The starting point has coordinates (40°37'31.3"N 23°02'58.7"E). At this location there is a postwar memorial element, the Kirechkoi-Hortakoi cemetery (Fig. 2). The trail then heads west. On this route there are two cylindrical concrete fortifications (Figs. 3-4). The proposed path ends at the second concrete fortification in the Kostantinos or Dinovo area. At this point there are some old buildings. This location is also the highest point of this route (532 m). From this point it has an amazing panoramic view heading south, towards the city of Thessaloniki.

Figure 2 The post-war memorial element, the Kirechkoi-Hortakoi cemetery

Figure 3 Cylindrical concrete fortification

Figure 4 Cylindrical concrete fortification in Kostantinos area

The 2,200 m long trail (B) has the same starting point as the (A) path, where the cemetery is located. This path has a southwest direction and on this route there are two more cylindrical concrete fortifications. One is on the hill called Tusla (Fig. 5), which cannot be distinguished due to dense vegetation and there is no suitable access path. The next concrete fortification is on the hill called Agios Panteleimon (Fig. 6). This location has also a panoramic view heading south, towards the city of Thessaloniki. Trail (B) ends at this point.
Parts of the forest paths, described in this work, have not been highlighted until today and the general public does not have access to the corresponding postwar landscapes. The war remnants have been left to the ravages of time and they are more or less invisible, as they have been partially covered by diverse vegetation due to natural ecological succession. It is suggested that the landscape architect, includes the war traces in the local ecosystem and makes sure that the visitors understand what exactly happened in this landscape and why. The recommended paths, after appropriate architectural planning, with nature-friendly clearing, proper signage and sustainable management, could contribute to the development of tourism and environmental education. By improving accessibility tourists, pilgrims or students, with the help of a tour guide or environmental education teacher, will be able to gain social sensitivity, to realize the necessity of the sustainability of the cultural landscape of the forest and the need to protect and highlight it, with an ultimate goal the peaceful coexistence of nature and people (Wenden, 2004, Tsiouri et al., 2020).

The planning and highlighting of postwar landscapes, with the corresponding elements of memory, is quite a common phenomenon in various countries. The goal is to enable the visitor of a monument or a postwar landscape, in the absence of a previous memory, to develop an experience that will turn into a memory. To discover the totality of memories, present in the human brain, which represent the collective war experiences and to discover one's deepest self and transform himself.

Efforts to raise public awareness on issues of war, peace and natural environment, should start from childhood with a participatory method, which will actively involve students in the learning process and think critically (Wells & Lekies, 2006). The relevant activities are proposed to be student-centered and not teacher-centered or book-centered and based on the active and continuous participation of students in all phases of the teaching process. Teachers and students together become active explorers of the world and not passive recipients of knowledge (Daskoilia et al., 2020, Bierle & Singletary, 2008). Experiential-communicative teaching emphasizes the exercise of children’s ability to deal with various social situations. It favors discussion about genuine social phenomena and often requires the transfer of educational activity outside the school (Bierle & Singletary, 2008). In an education, in which experiential learning is sought and consequently the development of initiative, communication and participation, the place where all these happen must be the right one (Georgopoulos, 2014). Visitors’ contact with such places helps them realize their own place in the global space, their values, rights and responsibilities towards other peoples and the environment. It helps them understand that the equal cooperation of peoples and the sustainable management of natural resources are necessary for the survival of all organisms on the planet (Matthaioudaki, 2004).
6. Conclusions

− The city of Thessaloniki, during its long history, was many times a field of military operations. These operations have left their traces, mainly on the periurban landscape.

− These war remnants with a strong emotional significance, together with the landscape biodiversity, can be a pole of attraction for visitors.

− Two paths, connecting war remnants in the northeastern part of the periurban forest of Thessaloniki are recommended, which have not been highlighted until today.

− The purpose of the recommended trails is to connect a military cemetery, with four cylindrical concrete fortifications (pill boxes), scattered in the forest landscape.

− These fortifications were built by the allied troops of the Salonica front, during the First World War.

− Both trails start from a cemetery, where soldiers from different nationalities have been buried during the War.

− These trails, after appropriate architectural planning, could contribute to the development of tourism and environmental education.

− Improving accessibility, people will be able to gain social sensitivity, to realize the necessity of the sustainability of the cultural landscape and the need to protect and highlight it, with an ultimate goal the peaceful coexistence of nature and people.

− Visitors to the postwar landscape of the periurban forest of Thessaloniki can be tourists, history lovers, military men, peacemakers, educators and descendants of war victims, who are interested in their family history.

− These trails can also be used in the implementation of relevant environmental education programs. It is necessary for young people to come across with material and spiritual heritage of wars.

− For a more complete study and understanding of humanity's war behavior and the acquisition of relevant lessons, it is necessary to preserve, to show off and to improve public access to the postwar landscapes.

− Well-informed and properly trained tour guides or teachers have a duty not only to increase the number of visitors to post-war landscapes, but also to contribute to the sustainability of the natural ecosystems and peoples' peace.

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Ethics approval

Not applicable.

Conflict of interest

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