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The role of physical infrastructure in the perennial struggle for Crimea

Based on an inter-disciplinary theoretical approach about built form as a social construct which mirrors power relations, this article examines the role of what is broadly understood as 'physical infrastructure' in Crimean political history, with particular emphasis on the late modern period. The analysis reveals that the infrastructural component proved to be crucial in terms of physically 'attaching' the peninsula either to the Russian or Ukrainian parts of the mainland, with the latter naturally seen as a much better option due to the existing terrestrial connection at least as long as all of them remained within a single state. The Soviet disintegration therefore immediately made Crimea's infrastructure both a contested milieu and a medium of this contestation. As a result, the 2014 annexation and subsequent flashpoints cannot really be explained without referring to such issues as transportation gateways, energy security, and even water supply. While long being quintessentially political, physical infrastructure in Crimea is becoming existential.

Introduction

It is not the first time that the Crimean peninsula has become a major issue in terms of European security. The region's significance has a lot to do with its peculiar geostrategic position and its remarkably rich and multicultural history. This article aims to highlight one factor which proved to be both extremely important and unjustifiably sidelined in the analysis of Crimea's political trials and tribulations, namely its infrastructure. Based on an interdisciplinary theoretical approach about built form as a social construct which serves to mirror power relations, this paper examines the role of what is broadly understood as 'physical infrastructure' in Crimean political history, with particular emphasis being placed on the late modern period, one which

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largely coincides with the rule of the Russian empire and the Union of Soviet Socialist Republics (USSR), as well as the contentious post-Soviet era.

The analysis reveals that the infrastructural component proved to be crucial in terms of physically 'attaching' the peninsula either to the Russian or Ukrainian parts of the mainland, with the latter naturally seen as a much better option due to the existing terrestrial connection, at least as long as all of them remained within a single state. It is no wonder then that the Soviet disintegration immediately made Crimea's infrastructure both a contested milieu and a medium of this contestation. Therefore, the 2014 annexation and subsequent relationships between the three main subjects involved - Ukraine, Russia, and Crimea itself - cannot really be explained without referring to such issues as transportation gateways, energy security, and even water supply.

The topic of the political significance of physical infrastructure has not received enough academic attention in the fields of Soviet, Russian, or Ukrainian studies, particularly as far as the curious case of Crimea is concerned. Among some notable but partial exceptions, anthropologist Stephen J. Collier (2011) approached the issue while researching interrelationships between public utilities and urbanisation during and after the Soviet era, but his focus was on small cities in the Russian hinterland. In her excellent historical study of the decades-long incorporation of the Crimean khanate into imperial Russia, Kelly O'Neill (2017) consistently hinted at the role of physical - particularly transportation-based - infrastructure in the interrelated processes of territorialisation, integration, and empire building, but largely dealt with socio-economic institutions. Most of the academic interest from historians in Crimean physical infrastructure, however, is generally dedicated to its military, as opposed to civilian, component, which is not surprising considering the predominance of research on major wars which have been conducted there. Although renewed attention in the topic has logically followed the 2014 annexation, as was particularly shown by Jean Radvanyi (2017), Olga Oleinikova (2019), Kristian Åtland (2021) or Kent DeBenedictis (2021), none of these or other pieces of academic research in the English, Russian, or Ukrainian languages have actually focused on the role of infrastructure in the latest political trials and tribulations which have been witnessed on the peninsula.

Based on the aforementioned work, as well as on relevant official documents, think-tank studies and media reports, this article therefore attempts at least to partially fill a major research gap. It firstly provides a necessarily brief theoretical outlook on physical infrastructure as a technopolitical system of exercising power and control over space. Then follows a general and introductory presentation of the case study in question. The analytical part of the article roughly applies a chronological principle, and so deals separately with

the most important stages of Crimea's modern history, namely those of the Russian empire, the USSR, and post-Soviet Ukraine and Russia. In recognition of the internationally-recognised status of Crimea, related proper names are transliterated according to the rules of Ukrainian pronunciation, somewhat contradicting established English-language practices.

1. Physical infrastructure as a technopolitical system of power and control over space

The word 'infrastructure' originated in military parlance. Initially it referred to fixed facilities such as air bases, but has gradually become a somewhat slippery term, often essentially meaning any important, widely shared, human-constructed resource (Edwards, 2003). Webster's Dictionary (1996) defines non-military physical (or constructed) infrastructure as 'the fundamental facilities and systems serving a country, city, or area, as transportation and communication systems, power plants, and schools'. Schools, along with facilities for financial, healthcare, law enforcement, or governmental systems, are considered to be 'soft infrastructure', while the rest (i.e. roads, bridges, tunnels, water supplies, sewers, electrical and telecommunications grids and so on) correspond to 'hard' or 'economic' infrastructure. According to its function, the latter can be divided into transportation (by land, water, and air), telecommunications, utilities (water and sanitation), and power supplies.

Infrastructure has increasingly become an object of inquiry for a wide array of social sciences. Keeping in line with the general trend of a return of philosophical interest in the spatial, as opposed to the temporal, dimension of human existence, associated with such luminaries of French thought as Gaston Bachelard (1958), Michel Foucault (1975), Pierre Bourdieu (1987), and Henri Lefebvre (1974), but also with the Briton, David Harvey (1989), numerous perceptive scholars have observed an intimate interrelationship between infrastructure and the exercise of power over space and, therefore, over the people located in it, especially since the beginning of the modern era. According to sociologist Paul Edwards (2003), infrastructure is the actual invisible background, the substrate or support, which constitutes the artificial technocultural environment of modernity. It allows humanity to control both time and space by being largely responsible for the sense of stability in life, but also through creating opportunities and limits, as well as promoting some interests at the expense of others. As an artificial surrogate and an 'upgrade' for the natural environment, it structures nature as 'raw material', which must be

shaped and processed by technological means to satisfy human ends.

Anthropologist Brian Larkin, who similarly sees infrastructure as a constructed network which serves to facilitate the flow of goods, ideas, waste, power, people, or finance, and which allows for their exchange over space, also notices its embedded 'technopolitical' nature. As an important type of human-made built form or environment, infrastructure may be understood as both the 'architecture for circulation' and the 'matter that enables the movement of other matter' (2013). In that sense, physical infrastructure is essential to what Foucault calls 'governmentality' (2010), and what sociologist Michael Mann refers to as 'infrastructural power' (1984), namely the capacity and organised practices of the state to enforce its policies over all of the subjects across the entire territory under its control. Notably, besides being a tool for technopolitical control, infrastructure can also be understood as a concrete semiotic and aesthetic vehicle which produces and responds to fetish-like desires and futuristic fantasies, and therefore serves the crucial legitimating function for the governing elites (Larkin, 2013).

Despite their primary focus on discourse, scholars who have been working in the field of what is called 'critical geopolitics' have also expressed a certain degree of interest in physical infrastructure. In his study of Russia's recent conduct in its 'near abroad', one of the principal founders of this subdiscipline, Gearóid Ó Tuathail (Gerard Toal), proposed a key analytical notion of 'geopolitical condition', defined as 'an enduring concern in geopolitical writings with how emergent technological assemblages - military, transportation, and communications infrastructures - serve to transform the way in which geopolitics is experienced, understood, and practiced' (Toal, 2017). Depending upon the political and historical context, such an infrastructural built form can effectively function as 'sinews of colonial power' (Prakash, 1999) or even an 'architecture of occupation' (Weizman, 2007). In other words, the key interest is not in infrastructure as such but in what it tells one about governmental practices.

Based on theoretical insights discussed above, this article aims to analyse political practices on material soil by scrutinising the range of 'actions' which are carried out *by* and *with* the as-defined physical infrastructure, and therefore presupposes a qualitative research methodology. The information which forms the bedrock of the analysis was collected through a reflective and interpretative reading of publicly-available official documents, media reports and, most importantly, relevant academic literature. The analysis itself was conducted according to the principles of inductive inference which formed the basis of the Crimean case study. The research approach follows the fundamental theoretical provision which sees space not as being static, nor time

as spaceless (Massey, 1993), with both of them not being mutually exclusive but instead mutually inclusive (Foucault, 1986), making a resultant analysis both spatial *and* temporal, and the narrative both geographical *and* historical. Following Edward Soja (1989), Crimea is understood as a particularly restless geographical landscape that requires critical interpretative 'reading', which itself would allow one to reveal its uniqueness as a manifestation of interplay between power and space.

When considering the peculiarities of the case study in question, the aforementioned conventional definition of physical infrastructure will be consciously expanded in order to include several related types of built form that can pertain to military and dual-use, urban functions, and surveillance and accessibility (such as passages, checkpoints and so on). The interest in urban environment follows Soja's (1989) theoretical establishment of a link between physical infrastructure and cities, tellingly defined as 'specialised nodal agglomerations' and 'control centres', which are designed to protect and dominate through spatial techniques. Before plunging into the actual spatio-temporal case study itself, it is imperative to discuss Crimea's geographical and historical peculiarities which would serve to highlight the significance of infrastructure.

2. Crimea: a geographical and historical background

Almost the size of Belgium, Crimea is roughly a kite-shaped peninsula, the southernmost tip of which forms the nearest land point to the centre of the Black Sea. Crimea's unmistakable geostrategic value is enshrined in its sheer name, one that probably derived from *kirim*, a concept which designates a defensive infrastructure - with a variation from a mere trench to an entire fortress - in Turkic languages. A separate language that belongs to this family has been spoken by one of the most important of those many peoples to have inhabited this land: the Crimean Tatars.

The only natural connection which makes Crimea a peninsula, as opposed to an island,[1] is a bottleneck that is both narrow (at 5-7km) and lengthy (at 30km), and that connects it to Ukraine proper. This isthmus is named after Perekop, the local site of a major Tatar fortress which came to be known by its telling Slavic appellation, roughly meaning 'over-dug'. To the east of the Perekop isthmus are two other terrestrial extensions that themselves almost join Crimea to the mainland. The first of these is through the Chonhar peninsula

[1] It is tellingly known to the Tatars as the 'Crimean island' or, more poetically, the green 'island' (*Yesil Ada*) (Pleshakov, 2017).

in Ukraine proper, and the second is through the Arabat Spit, a sub-peninsula on the Crimean side which was named after the Ottoman fortress located at its southern end. As both of these routes are interrupted only by a narrow gap of water, they have gradually been connected by man-made bridges, roads, and railways (Melvin, 2017) since the 1783 annexation of Crimea by the Russian empire.

Crimea itself can be divided into three geographically and ecologically distinct zones: the northern and central steppe which occupies about three-quarters of the peninsula and is tellingly known as the 'Plains' (*Chol*) amongst Tatars (Williams, 2016), the Crimean Mountains that run parallel to the south-eastern coast in three sub-ranges, thereby leaving enough space for the narrow coastal strip beyond them which is characterised by a much milder subtropical climate akin to that of the Mediterranean. The eastern extension of the steppe zone forms the Kerch peninsula. This is divided by the narrow strait which bears the same name from Russia's Taman peninsula. The Kerch strait of between three to fifteen kilometres in width therefore links the Black Sea to the Sea of Azov (Melvin, 2017), with both being paradigmatic cases of almost fully enclosed marginal seas (along with the neighbouring Mediterranean or further Baltic). Crimea's extraordinary ecological diversity is further augmented by the presence of five plateaus, various salt marshes, and even a destitute terrain which amounts to a small desert (Pleshakov, 2017).

It is no wonder that, throughout the millennia, these geographical and climatic zones have attracted various peoples from outside of Crimea, all of whom found it hard to establish lasting control over the peninsula as a whole and to integrate its separate parts with one another. The most clear-cut and important distinction in this regard is between the steppe and the south-eastern coast, which were occupied respectively by the horseback semi-nomads of Indo-European and later Turco-Mongol stock, and by maritime colonisers who were primarily of Mediterranean provenance, from ancient Greeks to Byzantines and Genoese, thereby producing a quintessentially syncretic and largely unique cultural environment within Crimea itself.

However, it was the Ottoman empire which - for the first time since the Mongols - achieved a certain level of unified governance over the whole peninsula in 1475. Despite this, much of it remained under the de facto control of the local Ottoman vassal or client state, the Crimean khanate, which was itself established several decades earlier (in 1441) as the successor to the Golden Horde, that is the north-western part of the former Mongol empire and later a separate semi-nomadic great power. Throughout the subsequent three centuries, Muslim-ruled Crimea withstood an ever-increasing level of military pressure from Muscovite Russia in large part thanks to the so-called 'Turkish

Wall' (Melvin, 2017), a network of Tatar-Ottoman defensive infrastructure on the outskirts of and within the peninsula. In the latter case, besides the aforementioned Perekop (Or Qapi) and Arabat fortresses, the Muslim rulers built or rebuilt strongholds at most of the other strategically important points of Crimea, including Yeni-Kale and Kefe which roughly correspond to today's seaports of Kerch and Feodosia.

Within the peninsula itself there had been surprisingly little contact between the south-eastern littoral and the steppe zone until the Russian conquest took place. Besides natural barriers, this was also due to the legacy of small but durable fortifications which had largely been built by the Byzantines during the apogee of their power in Crimea in the early-to-high Middle Ages to seal every north-to-south gorge in the mountain ranges. Above the gorges, the plateau-like treeless tops (*yayly*) provided convenient sites for the construction of fortified settlements which could not easily be captured (Oleinikova, 2019). Even the domineering Ottomans essentially remained committed to this divide by limiting their direct rule to the formerly Byzantine, Venetian, and Genoese south-eastern coast, as a result making the Black Sea the empire's inner lake, and Kefe, nicknamed 'Little Istanbul', its seventh largest city (Pleshakov, 2017).

Crimea in its entirety finally succumbed to Russia's pressure in 1783, exactly a century after the last siege of Vienna by the Ottomans which itself is often considered as the high point of their imperial power. By contrast, the sultanate's first definite loss of a Muslim-majority territory can widely be seen as the prime precursor of its eventual collapse as well as the start of a gradual decline. Largely forgotten, however, is the fact that the Russians had already secured their presence in Crimea almost a decade before its annexation as a result of the 1774 Kuchuk Kainardji Treaty which, besides other things, forced Istanbul to recognise the Crimean khanate's independence, or rather Russian influence over it, and - at least as importantly - transferred to Saint Petersburg's control the fortress port of Kerch-Yenikale (Palmer, 1992). It is imperative to emphasise the fact that these two treaty points somewhat presaged events 240 years later, including Crimea's so-called 'declaration of independence' a week before Russia's formal annexation and the crucial military-strategic role of Sevastopol in actually making that happen.

Crimea's symbolic and strategic significance for the Russian empire cannot be overemphasised, as it immediately began to be considered the 'pearl in the Tsar(ina)'s crown' (Williams, 2016), and a 'beacon of civilisation' (Melvin, 2017). Indeed, the peninsula formed a crucial stage in the so-called 'Greek Project' which was led by the contemporaneous Empress Catherine the Great and largely masterminded by her beloved favourite, Prince Grigory

Potemkin. Aptly designated as the imperial government's extraordinary ideological investment (O'Neill, 2017), this plan aimed to solve the would-be 'Eastern Question' by projecting Russian power towards the heart of the Ottoman sultanate, thereby freeing from centuries-long Muslim rule its Greek, Slavic, Caucasian, and other Orthodox Christian subjects as a result. Nothing symbolised this drive towards Constantinople better than giving Greek names to places in newly acquired territories which today are part of southern Ukraine, Moldova, and south-western Russia. Crimea therefore 'recovered' its Hellenic etymology by officially becoming 'Tavrida', while several of its most important towns retrieved or gained new appellations such as Feodosia, Yevpatoria (Kezlev to the Crimean Tatars), Simferopol (Aqmescit), and Sevastopol (Aqyar), with the latter two becoming the region's political-administrative and naval hubs respectively. Much of the Russian integration effort focused on physical infrastructure, and transportation in particular.

3. Crimea's imperial and Soviet integration through infrastructure

Nothing signified the 1783 annexation of Crimea better than the founding of Sevastopol in that same year by the Scottish-Russian rear admiral, Thomas Mackenzie. In military-strategic terms, the port city used exceptionally favourable local terrain features to create the empire's foremost southern naval bastion and safe haven that allowed Russia both to secure and project its economic and military power. In symbolic terms, the founding of Sevastopol led to a 'rediscovery' of nearby Chersonesus, an ancient Greek colony at which Volodymyr/Vladimir the Great baptised himself and, by extension, his huge domain of the Kyivan/Kievan Rus' in the late tenth century. His scheming in order to extract major concessions from the town's then-Byzantine rulers, including a demand of the emperor's beloved daughter as a bride, involved its siege which was made successful by blocking off the underground water supply (Melvin, 2017), thereby highlighting one of the largest challenges for Crimea to this day.

As was noted by another well-known Vladimir more than a millennium later, throughout some two hundred years since its establishment Sevastopol has raised its profile from the 'birthplace of Russia's Black Sea Fleet' to a truly 'legendary city with an outstanding history' (Putin in Wilson, 2014). The seaport's crucial functions that aimed at becoming a strategic centre of gravity and a hub of maritime power were ensured by supporting civilian (urban)

and, especially, military (fleet-related) infrastructure, including a dockyard and slipways, a lighthouse, a water supply canal, an arsenal and artillery magazine, a hospital and barracks, warehouses and victualling stores for food and potable water, as well as a neighbouring fortress along with other defensive structures. It is no wonder then that the port city proved to be the focus of both huge subsequent interventions in the peninsula by other European powers, namely during the Crimean War (1854-1856) and the so-called Great Patriotic War (1941-1945) (Melvin, 2017). Both sieges of Sevastopol proved to be extremely bloody affairs, but it was the second one that bestowed it with 'hero city' status in the official Soviet narrative (with the peninsula's second representative on that list being another strategic seaport, that of Kerch).

Elsewhere, Crimea's infrastructural development had not been that rapid for almost a century since its takeover by Russia. Preparing for the empress' famous tour of inspection four years after annexation, a new road had to be built along with concomitant bridges and stone distance-markers in order to connect some of the peninsula's most important inland towns, including the former Crimean Tatar capital of Bahcesaray and the region's new administrative centre of Simferopol (O'Neill, 2017). Except for the navy-focused Sevastopol, Crimea's three other traditional ports of Kerch, Yevpatoria, and Feodosia remained the hubs for its main transportation links to the rest of the empire and the outside world. A new seaport was gradually added to this network in the first half of the nineteenth century when a resort town which was increasingly beloved by the Russian nobility and intellectuals - Yalta - became the endpoint of the empire's first commercial passenger shipping line established in 1828, reaching from Odesa with a stop at Sevastopol (Melvin, 2017). Soon after Yalta was connected to fellow Crimean cities by road. As in many other cases, the Crimean War between 1853 and 1856 provided a watershed in terms of infrastructural development on the peninsula. Indeed, Russia's defeat in this often unjustifiably-forgotten conflict was intimately related to its inability to fully use modern transportation and communications technologies, such as railways and telegraphy. The significance of the 23km-long Grand Crimean Central Railway which was built by the invading British with the sole purpose of supplying the allied soldiers who were engaged in the (first) siege of Sevastopol from neighbouring Balaklava was as pronounced as to allow the project's leading researcher to simply refer to it as 'the railway that won a war' (Cooke, 1990).

Unsurprisingly, the lack of a railway connection with the rest of the empire attracted prime attention from the authorities when the dust of the war had finally settled. It took almost two decades, however, for an actual rail link to be implemented from Moscow via Kharkiv, Aleksandrovsk (Zaporizhzhia), and Melitopol, reaching Sevastopol in 1875. Besides serving as Crimea's first

ever means of technopolitical attachment to the continent with all of the concomitant logistical boons for the region's economy and security, the new railway also raised the profile of Dzhankoi as its only hub within the peninsula, a function which would further expand in this city's subsequent history. Neither could one underestimate the railway's psychological effect on the feeling of political and cultural belonging, as a distance of roughly 2,200km between the imperial capital of Saint Petersburg and Sevastopol could now be completed in three days, with the duration of the same trip actually dropping to under thirty hours long before the halt to its operations in 2014 (Melvin, 2017).

Infrastructural development after the Crimean War was not confined to transportation. In addition, it increasingly focused on modern forms of communications technology and energy supply. Most of this built environment survived until the Soviet era thanks to Crimea's fortunate avoidance of being directly involved in any of the battles of the First World War, and despite the fact that it served as the last significant stronghold of the Whites during the Russian Civil War which lasted here until late 1920 (Yekelchyk, 2015). Being faithful to his own famous adage about communism as 'Soviet power plus the electrification of the whole country', Vladimir Lenin chose Sevastopol as one of the first sites for a new power station, with it opening there in 1923. In the following year an electric tramline connected Sevastopol to the neighbouring Balaklava (Melvin, 2017). A dozen years later, Crimea's first civilian airport was opened in Simferopol.

Contrary to its experience of the First World War, Crimea suffered immensely during the second. Those parts of the railway network which survived Nazi occupation and numerous battles were used to deport the whole of the Crimean Tatar population - numbering some 200,000 people - to Central Asia under the pretext of their alleged collaboration with the Third Reich. This event took place soon after the Soviets regained control of the peninsula in spring 1944. The exile (*surgun*) (Williams, 2016) of those who were lucky enough to survive these calamities lasted almost until the collapse of the USSR, while numerous settlers from the neighbouring mainland, both Russian and Ukrainian, used Crimea's terrestrial and maritime gateways to fill the population void, something which had huge repercussions on its demographic profile.

Ten years later a new Soviet leadership headed by the former first secretary of Ukraine, Nikita Khrushchev, made a controversial decision to transfer the then-Crimean region (*oblast'*) from the Russian Soviet Federative Socialist Republic to the Ukrainian Soviet Socialist Republic. Besides amounting to a seemingly insignificant redrawing of administrative borders within the federation, this policy made much practical, economic and, notably, infrastructural

sense since Crimea's only terrestrial connection to the mainland remained via Ukraine, thereby serving as the principal corridor for land transportation (both road and railway), electricity and, increasingly, its fresh water supply. The Kerch strait ferry line which opened half a year after the transfer on the site of the former Kerch railway bridge - a failed German and Soviet attempt to physically connect the Crimean and Taman peninsulas during the war - could never compete with much easier access through the Perekop isthmus or the road bridge from Chonhar (Melvin, 2017). The region's dependence on the Ukrainian mainland had further been increased by the construction of the 400km-long North Crimean canal which channelled the waters of the Dnipro/Dnieper river from the Kakhovka reservoir through Perekop and Dzhankoi to its end point in Kerch (Sakwa, 2015). Crimea's extensive agriculture famed for its fruits, vegetables, and wine, as well as much of its heavy industry all relied on the smooth functioning of the canal, the longest of its type in Europe (Maiorova et al., 2019).

Sevastopol remained a special case within the larger context of Ukrainian Crimea due to its ambiguous status of being an 'exempt' municipality from 1948, which meant that it was not subordinated to provincial authorities and instead received funding directly from Moscow (Yekelchyk, 2015). A paradigmatic example of a dual-use infrastructural knot, Sevastopol was not only a major Soviet 'closed city' focused on its naval base, but also a significant defence research hub and an extensive network of military facilities, while also adding throughout this era new airfields, radar stations and, most importantly, an underground and atomic bomb-proof primary submarine base for the Black Sea Fleet in neighbouring Balaklava (Melvin, 2017). The town which gave its name to a form of cloth headgear that would later become a major symbolic feature of the 2014 annexation was itself incorporated into Sevastopol three years after the 1954 transfer of Crimea. The entire stretch of railway which leads up to the port city was electrified in the early 1970s.

In general, after the Second World War Crimea became host to numerous ultra-secret 'regime objects' associated with military, scientific, and energy infrastructure of major significance to the whole of the USSR. A local journalist and writer (Хорсун, 2014) provided an impressive list of such facilities beyond Balaklava aimed at the following functions: space exploration (a Soviet military space mission control centre in the closed town of Simferopol-28, which included the country's first ultra-precise radio telescope, the TNA-400, and its only 'lunodrome' designed to test Moon rovers); nuclear defence (Sevastopol's unfinished 'underground city' composed of some six hundred bunkers) and offense (a central storage of nuclear weapons in the closed town of Feodosia-13, and the Baherove Air Base established for the

purpose of carrying out nuclear testing by strategic bombers with one of the USSR's three most-powerful airstrips); the development of specific naval capabilities (the only Soviet aircraft carrier shore-based take-off and landing site in Saky-4); nuclear and solar energy (the Crimean Nuclear Power Plant which remained unfinished due to the 1986 Chernobyl disaster, and the only Soviet solar power facility, both located in Shcholkine); space and marine physics (a complex of scientific stations in Katsiveli); and, least secretive of all but very significant today, water delivery (the Yalta Water Tunnel which stretches for over seven kilometres below the Crimean Mountains). Notably, these and other pieces of physical infrastructure which were constructed throughout the imperial and Soviet eras further increased the value of the peninsula, and thereby indirectly contributed to competition between Ukraine and Russia when their common country finally collapsed in 1991.

4. The infrastructural component of post-Soviet competition over Crimea

Physical infrastructure in its wider sense became a major point of international contention long before the watershed year of 2014. The single most important example of this was clearly the Russo-Ukrainian dispute over belonging of the Black Sea Fleet, along with its numerous pieces of not only military but dual-use and essentially civilian infrastructure, scattered across the entire peninsula. Difficult negotiations between Kyiv and Moscow resulted in the 1997 Partition Treaty which gave more than four fifths of the fleet's predominantly Crimean component to Russia, along with concomitant lease rights for twenty years of most of the facilities in Sevastopol. The lease was extended up to 2042 in exchange for additional discounts on Russian natural gas deliveries soon after Viktor Yanukovych was elected to the Ukrainian presidency in 2010. As a result, between 1997 and 2014, the Russian Black Sea Fleet operated facilities in five major, separate Crimean sites. In Sevastopol, the fleet's headquarters, 140 infrastructure objects, 3,571 buildings, and 127 docks were under its jurisdiction, which collectively provided enough space for cultural and educational institutions, most notably the local branch of the Moscow State University established in 1999. Throughout this cohabitation period, the fleet remained the principal conduit for Russian influence in Crimea, while the Ukrainian authorities never managed to resolve the problem of properly monitoring Russia's activities or of gaining any real control over the many facilities which remained a bone of contention, most importantly those that served to form part of the local

navigational and hydrographic support system (Maiorova et al., 2019).

Admittedly, the Crimea-based Ukrainian armed forces themselves were not entirely blameless when it came to mutual mistrust and hostility between them and Moscow, as was clearly shown by the accidental shooting down of a Russian commercial airliner during their air defence exercise in October 2001 (The Guardian, 2001). It was two years later, however, when the most serious potential military clash suddenly erupted between the two sides. Often unjustifiably forgotten, the 2003 Tuzla conflict started when the Russians initiated construction work on a dam between the Taman peninsula and the uninhabited sandy islet of Tuzla which had formed in the middle of the Kerch strait only in 1925 as a result of a massive storm. Since administratively the islet became part of Crimea in 1941, it meant that the Kerch-Yenikale canal dredged through the strait in the 1870s to form the only shipping connection between the Black Sea and Azov Sea remained on the Ukrainian side of the would-be international border. Dam construction work stopped only after Kyiv had set up a border patrol outpost on the islet and the leadership of the two countries held direct negotiations (Maiorova et al., 2019). Tellingly, there was no real response to the crisis from Russian nationalists on the peninsula (Wilson, 2014).

Crimea's fourth occupation in history by Russia-based forces (after those of 1783, 1920, and 1944), although differing in its almost bloodless course (Гольц, 2014), was intimately related to the physical infrastructure which came to be used both as the means of carrying out the campaign and as its indispensable target. Despite the fact that the official Russian military medal 'For the Return of Crimea' famously suggested the campaign's beginning on 20 February 2014, its active stage within the peninsula became publicly visible only on 24 February, immediately after the end of the Sochi Winter Olympics which took place less than 350km from the region. It was on that day that the Russian flag was raised over the Sevastopol administrative centre, and seven checkpoints at the entry points to the city were set up by 'self-defence groups', with armoured vehicles of the Black Sea Fleet marines criss-crossing their way through it (Maiorova et al., 2019). On the night of 27 February, masked and professionally-equipped troops without any visible insignia took over the Supreme Council (parliament) of Crimea. Later in the day, other unidentified armed men in more standard uniforms established control over the building of Crimea's Council of Ministers (which housed the government), as well as the main terrestrial entry points (by road and railways) onto the peninsula through the Perekop isthmus and the Chonhar peninsula (Гольц, 2014).

Simferopol International Airport was seized on 28 February, followed by other facilities of critical civilian infrastructure associated with transportation, communications, and industry, including the state-owned television and

radio company, the telecom systems, and strategically-important businesses. The majority of the Ukrainian military and dual-use sites experienced blockades using alleged local civilians and radio communications-jamming equipment on land and sunken ships in the sea. In the meantime, all of the three main gateways which connected Crimea to Russia (seaports, airfields, and the Kerch ferry) were increasingly openly exploited to bring in more servicemen and supplies in order to finalise the campaign. As the Crimean status 'referendum' was conducted on 16 March, there were still military units flying the Ukrainian flag on the peninsula (Maiorova et al., 2019). It took around a month for the Russian hybrid troops to fully achieve their goal until the 204th Tactical Aviation Brigade at Belbek Air Base was forced to surrender on 22 March. Besides apparently wide support of the takeover by the local population and a clear lack of preparedness and resolve for military conflict both by the Ukrainian leadership and their servicemen on the ground, the third major factor which explained the surprising success of the campaign was precisely the ease of Crimea's physical isolation from Ukraine proper (Гольц, 2014).

Notably, the Russian takeover targeted Ukrainian infrastructure way beyond Crimea itself. On the next day after the 'referendum', the peninsula's new puppet authorities 'nationalised' *Chornomornaftogaz,* a local subsidiary of the state-owned *Naftogaz* oil and gas company, along with all of its energy assets, both onshore and offshore. Besides other things, this practically meant occupation by traditional military means of Ukraine's offshore gas fields as well as supporting production and storage infrastructure (drilling platforms) which were located hundreds of kilometres from Crimea. In a perfectly hybrid fashion, this action alone boosted the socio-economic prospects of the peninsula's future under Russian control and at the same time immensely damaged the long-sought-after Ukrainian target of energy independence (Rühle & Grubliauskas, 2015). Ukraine's de facto loss of much of its exclusive economic zone and continental shelf as a result of the Russian 'seize, hold, and exploit' strategy also produced negative repercussions for its fisheries and maritime trade, making competition with its opponent's equivalent sectors even harder to sustain (Åtland, 2021).

In Crimea itself the new Russian authorities immediately shifted to the twofold tactics of rapidly integrating the peninsula into their mainland while attempting to retain as much as possible of the Ukrainian energy and water supply until the former process could successfully be completed. Critical infrastructure unsurprisingly proved to be a major part of this complex story as well. The integration challenge was addressed immediately after the annexation in a remarkably literal fashion when Russia initiated the construction of the road and railway Crimean bridge which eventually connected both sides

of the Kerch strait through the Tuzla islet (Radvanyi, 2017). Besides becoming the most important visible symbol of the new political order in Crimea[2] and also a major facilitator of it, this impressive structure served an extra geostrategic function of effectively blocking the only maritime passage from the Azov Sea, making it impossible for vessels taller than 33m in height to pass under it, and cumbersome for all other ships due to Russian surveillance and control, with major resultant negative repercussions for the affected Ukrainian seaports, especially Mariupol and Berdiansk (Maiorova et al., 2019). Unsurprisingly, it was the Kerch strait where the 'third' maritime front (in addition to Crimea and the Donbas) in the confrontation most clearly erupted in November 2018 when the Russians captured three Ukrainian naval vessels with twenty-four crew members (Åtland, 2021).

Easy though it was to isolate Crimea from penetration by the Ukrainian military, retaining energy and water deliveries from their former sources proved to be a different matter. Kyiv's delayed response, although comprehensible under international law, was dubious on the moral side, since the Ukrainian government decided to go along with widespread demands to shut down the North Crimean canal and block electricity supply to the peninsula. These measures were extremely painful for the region since, before the annexation, Crimea had received eighty percent of its electricity and eighty-five percent of its water from Ukraine proper, while ninety percent of its imports came in via the then-only railway line (Pleshakov, 2017).

However, in an arguably counterproductive fashion, such decisions only contributed to Crimea's infrastructural disconnect from Ukraine, and further alienated a substantial part of its population which was being forced to 'pay for' their support of Russia, or at least their passive stance towards it, during the process of annexation. Extra damage was done by western sanctions which banned visits by their cruise ships and flights to Crimea, as well as investment into the region's critical infrastructure, be that physical (energy), digital (finance), or combining both types (telecommunications) (Maiorova et al., 2019). Under such circumstances, elimination of the peninsula's infrastructural bottlenecks has logically become one of the principal targets of Russian budgetary investments, as has been recognised by corresponding federal government programmes (Минэкономразвития РФ, 2018) and localised long-term strategies (Минэкономразвития Крыма, 2016) in support of Crimea's socio-economic development.

Seven years after the takeover and despite the functioning of the 'energy bridge' underwater electricity cable and natural gas pipeline which con-

[2] Pertaining to what Toal (2017) calls 'affective geopolitics'.

nect Crimea to the Krasnodar Krai, along with the finished spinal Tavrida highway, and many smaller items of transportation, energy, and telecommunications infrastructure built by Russia, the peninsula continues to experience droughts, blackouts, industrial disasters and, most recently, deadly floods, while neither its famed agriculture nor its foreign tourist inflows have a realistic chance of recovery any time soon to pre-2014 levels. Throughout the post-annexation era, the principal infrastructural challenge for the Russian authorities there has gradually shifted from multi-dimensional connectivity to water provision, a more difficult task considering Crimea's particularly sensitive ecology in this regard and the fact that related technologies - such as desalinising or drilling for fresh water under the sea - are novel to the new rulers and therefore heavily depend upon foreign solutions and components which continue to be hard to secure due to international sanctions (Баранюк, 2021).

At the same time, Russia seems to stress the military as opposed to civilian means to retain the peninsula, rapidly creating a huge and impenetrable fortress befitting of Crimea's original designation. Even under the conditions of major water and electricity shortages, Russian rebuilding of military infrastructure outruns any civilian development programme there. Besides modernising and expanding the Black Sea Fleet faster than any of its other fleets and more than tripling the number of its military personnel to some 40,000 troops in 2021, Moscow has initiated refurbishment and reconstruction work for at least a dozen significant military facilities in Crimea. Numerous indications that the aforementioned nuclear weapons storage site, Feodosia-13, is among them have raised fears that Russia is preparing to deploy such systems in the peninsula (Gressel, 2021). The Ukrainian authorities were quick to correctly note that several types of potential carriers for nuclear weapon (ships, missile systems, and aircraft) have already been deployed there (Crimea Platform, 2021). As Russia is amassing troops on the Ukrainian borders at the time of this writing in early 2022, global attention is focused on their internationally-recognised northern and eastern stretches, while the fact that military build-up has been clearly streamlined in contested Crimea is somewhat unjustifiably sidelined.

Russia has also creatively used the topic of infrastructure as a means to target any remaining political opposition in the region, as was showcased by accusations against five local Crimean Tatar activists of sabotaging a natural gas pipeline on the outskirts of Simferopol, allegedly including the deputy chairman of their self-governing assembly, the Mejlis, which was banned by Moscow in 2014. The Ukrainian government dismissed these charges as fabricated, denied the alleged involvement of its military intelligence, and highlighted the fact that the entire story curiously broke out on the same day as the inaugural

Crimean Platform summit meeting on 23 August 2021 (RFE/RL, 2021). Notably, the joint final declaration of the latter initiative which aims to restore Ukraine's sovereignty in the peninsula through international peaceful and diplomatic means specifically stressed infrastructural build-up in its regions adjacent to Crimea (Crimea Platform, 2021), which would supposedly facilitate such an outcome. The infrastructure-based struggle for one of Europe's most contested places continues and is not going to diminish any time soon.

Conclusions

The Crimean peninsula provides a remarkable and evolving example of the role that physical infrastructure may play in political (and also military and economic) competition over a certain stretch of territory. This is even more the case if infrastructure were to be read in wider non-modern and dual-use terms, as the region's 'fortress' etymology so clearly reveals. It was the dawn of the modern era, however, that introduced novel transportation, communications, and resource exploration technologies, which made Crimea both more accessible and more craved after by the outside world, introducing by far the bloodiest stage in the rich history of the seemingly perennial struggle for control of this peculiar land. The Russia-based imperial and Soviet regimes achieved this goal despite occasional significant challenges both from the inside and outside of the peninsula.

The irony of history was that from the Russian imperial and Soviet perspective, the interrelated goals of sustaining control over Crimea, along with exploiting and developing this land, all required its physical 'attachment' to the mainland, and the Ukrainian direction was naturally seen as a much better option to pursue due to the existing terrestrial connection. The imperial and particularly Soviet regimes therefore directed impressive resources towards building transportation, energy, telecommunications, and water connections between Crimea and its northern neighbourhood, while at the same time creating formidable civilian, military, dual-use, and scientific facilities on the peninsula itself. As a result, physical infrastructure served not only as a major requirement and enabler of Foucauldian 'governmentality', but also as a psychological fetish-like factor which further increased the alleged value of the peninsula.

Hence, the collapse of the USSR automatically introduced a clear-cut infrastructural component into the complex relationship between Ukraine and Russia as far as Crimea was concerned. Its infrastructure became both a contested milieu and a medium of this contestation. This has proven to be

even more the case since Moscow decided to annex the peninsula. Although academic work on Crimea's politics of infrastructure has usually focused on its decidedly military variety (e.g. the Black Sea Fleet), the recently intensified struggle over the region has particularly highlighted the role of civilian structures and facilities, ranging from dams and bridges to canals and electricity transmission lines, in both the actual takeover and subsequent flashpoints. As a matter of fact, in the absence of direct military conflict between Ukraine and Russia over Crimea, much of the tension is basically 'infrastructural' and is therefore akin to a hybrid form of conflict.

Although Crimea's geographical and historical peculiarities - especially its multi-dimensional diversity and near-island characteristics at the heart of a strategically significant marginal sea - have for centuries stressed the role of physical infrastructure as a technopolitical system of establishing power and control over this contested space, current political, economic and ecological conditions in the peninsula and immediately beyond would surely serve to augment this even further. Besides militarisation at a rate which has rarely been seen around the world, allegedly including the imminent (re-)deployment of nuclear arms, the region has already become associated with essentially man-made calamities and technogenic threats to survival and the livelihood of the proud local inhabitants. Since various infrastructural systems increasingly serve both as the source of and the solution for most of these challenges, the further weaponisation of them is something to be expected. While long being quintessentially political, physical infrastructure in Crimea is becoming existential.

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