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War and cheese. Treatments of the relationship between war and food have often emphasized the effects of food upon war, which may certainly be profound. Such perspectives, however, often over-simplify the dynamic between war and food, suggesting for example that food is a factor in war that can and should be managed by wartime leaders to desired effects. Drawing on Tolstoy's view of war as the sum of a multitude of infinitesimal units of activity, I suggest the relationship between war and food is much more complex. Actors in wartime are driven by myriad motives, and waging war is not their only end. In such contexts, food itself may be the focus of some actions, and in any case, food may be as profoundly shaped by war as war is shaped by food. This article considers the complex relationship between food and war through a comparative historical examination on one foodstuff, namely cheese.
KEYWORDS: food; cheese; war; comparative history; mutual constitution.

Guerra e queijo. Os estudos sobre a relação entre a guerra e a alimentação têm enfatizado os efeitos da alimentação na guerra, os quais podem certamente ser profundos. No entanto, estas perspetivas simplificam, com frequência, a dinâmica entre a guerra e a alimentação, sugerindo, por exemplo, que esta é um fator que pode e deve ser gerido pelos líderes em tempo de guerra, para se obterem os efeitos desejados. Com base na visão de Tolstói sobre a guerra enquanto soma de uma multiplicidade de unidades infinitesimais de atividade, sugiro que a relação entre a guerra e a alimentação é consideravelmente mais complexa. Em tempo de guerra, os intervenientes são movidos por uma miríade de motivos e a guerra não é o seu único propósito. Nestes contextos, os próprios alimentos podem ser o foco de algumas ações e podem ser tão profundamente moldados pela guerra, como a guerra o é pelos alimentos. Neste artigo, faz-se uma análise histórica comparativa de um género alimentar, o queijo, para analisar a complexa relação entre os alimentos e a guerra.
PALAVRAS-CHAVE: Alimentos; queijo; guerra; história comparativa; constituição mútua.

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War and cheese

INTRODUCTION: FROM FEEDING SOLDIERS TO TRANSFORMING FOOD AND ITS MAKERS

Food has the potential to profoundly shape the human experience of war. The French proverb puts it simply: "C'est la soupe qui fait le soldat." While some attribute these words to the early 19th century French Emperor Napoleon Bonaparte – along with the aphorism "An army marches on its stomach" – others suggest there is no evidence that he ever said these things (Blom, 2019, p. viii; Martyris, 2015). Regardless, he failed adequately to heed these words. In 1812, the *Grande Armée* was "annihilated more by starvation and cold than by the Cossacks" (Martyris, 2015; Hénault and Mitchell, 2018, p. 186).[1] Of course, not all military defeats can be attributed to an insufficient supply of food. Military campaigns can just as well be undermined by poor nutrition, or even a monotonous diet – a theme of the landmark novel *All Quiet on the Western Front*, written by the German veteran of the First World War, Erich Maria Remarque (1929). It was out of concern for such problems that Britain, in the years between the Crimean War and the Boer Wars, set up some 17 royal commissions and 19 war office committees to look at supply and transport needs, and that the British military produced, in the years before the First World War, *The Manual of Military Cooking and Dietary Mobilization*, which put forth the apparently necessary argument that it was the duty of

1 Napoleon's *Grande Armée* was much larger than previous European fighting forces (at its peak, more than half a million men), and as such had to forage off the lands in which it fought and commandeer food from people in the vicinity rather than depending upon supply lines – an approach that proved catastrophic when Russians ceded the countryside, and even Moscow, to the invaders, carrying away or burning food stores and leaving Napoleon and his troops to their own devices in the Russian winter. Napoleon himself thought little of food, earning for himself the nickname "ogre" for his unrefined manner of eating (Hénaut and Mitchell, 2018, pp. 184, 186, 191-192).

officers to ensure the food supply for their troops in order to give them fighting strength and to maintain morale (Duffett, 2012, pp. 4-5).

Aware of the importance of food, wartime leaders have historically focused on securing agricultural supplies. According to the historian of the American Civil War, R. Douglas Hurt:

> In 1861, Northerners and Southerners believed that agriculture was a form of power similar to military power that would help the North to preserve the Union or the South to gain political or national independence, that is, sovereignty as a new nation state. [Hurt, 2016: p. xiv]

Furthermore, both sides moved to cut off North-South trade as each looked to establish food independence (Hurt, 2016, p. xiv). Beyond agriculture and trade policies, leaders in many historical contexts have also focused on reining in popular consumption to ensure adequate food for their troops. During the First World War, the American government proclaimed "Food is fuel for fighters: save wheat, meat, sugars and fats: send more to our soldiers, sailors and allies" – a slogan supported by academics such as Mary Swartz Rose, an Assistant Professor of Nutrition at Teachers College, Columbia University, whose publication, *Everyday Foods in War Time*, educated readers about the relative costs and nutritional values of various foods (advocating consumption of more milk and less meat, for example), and concluded: "If we are to escape bankruptcy and win the war, we must eat to be nourished and not to be entertained" (Rose, 1918, p. 83).[2] In the Second World War, the Nazi's celebrated the "Sunday casserole" ("*eintopfsonntag*") – a northern German tradition, previously considered poverty food – and called upon Germans to show their strength and dedication to the cause through self-denial, by labour-intensive and thrifty use of scarce ingredients, foraging, using home-grown or home-made ingredients, and eating left-overs; they also celebrated the use of dark grains of local provenance over wheat and white bread, associating the latter with extravagance and moral weakness as well as with people of non-German ethnic groups such as Jews (Weinreb, 2017, pp. 53-60).

There are, inevitably, tensions in wartime between the needs of militaries and the needs of civilians – a recurrent theme in this article. This is in

2 An example of this genre of publication in Britain during the First World War is Wood and Hopkins, *Food Economy*. Veit details how this led to calls to avoid food waste and dishes such as "Emergency Biscuits," "Economy Pudding," and "Battle Pudding," based upon creative substitutions that provided adequate nutrition even if they were less pleasing to eat (Veit, 2013, pp. 51-52, 93).

part because civilians have been as vulnerable to wartime hunger as soldiers, as war disrupts commerce, and as displacement prevents people from growing their own food (Collinson and MacBeth, 2014, p. 5). Historian Lizzie Collingham's account of food in the Second World War illustrates in rich detail not only how "securing a food supply became a central preoccupation for the governments of all the countries drawn into the conflict", but also how "[f]ood became a central and often all-consuming concern for most of the world's population" (Collingham, 2012, pp. 8, 12). Feeding the population has therefore also been a principal concern for military strategists. As Katarzyna Cwiertka has put it: "Food assumes strategic significance in total war not only due to its fundamental purpose of strengthening the troops, and enabling the productivity of workers, but also due to its potential effect on the morale of the population" (Cwiertka, 2013, p. 4). While Cwiertka, who is Professor of Japanese Studies, was referring to Asia, Britain's 20th century experiences illustrate the same point. David Lloyd George claimed in the aftermath of the First World War (during which he served as Prime Minister): "We came nearer to defeat owing to food shortage than we did from anything else"; whether or not this was true, he used this assertion to plead with the Government during the build-up to the Second World War to pay greater attention to the importance of "the provision of food" as it planned for "defence of the realm" (Wilt, 2001, p. 2). Numerous tracts addressing this concern were published in Britain in advance of, and during, the Second World War. Sir John Orr (a medical doctor and nutritional physiologist who founded the Rowett Research Institute and eventually served as Director-General of the United Nations' Food and Agriculture Organization) and David Lubbock (who trained in nutrition and economics before assisting Orr at Rowett and at the FAO) wrote:

> Food was one of the decisive factors in the war of 1914-1918. It may be even more important in this war. *Victory will depend as much on the morale and powers of endurance of the civilian population as on the efficiency of the fighting forces.* Morale and powers of endurance cannot be maintained unless the whole population is on a diet good enough to maintain it in good health. [Orr and Lubbock, 1940, p. 1][3]

3 See also V. Plimmer, *Food Values*, the inside front flap of which reads: "Food is the first line of defence against disease and in wartime against the enemy. While everything is in the melting pot of war old prejudices and customs disappear. Now is the time to recast and modernise our defences on the food front. The essential facts about food requirements and food values are well known in scientific laboratories but seldom applied in everyday life. Those who cater for a family, school, hospital or for a larger community; or who grow food on a small or big scale and are interested in the fertility of the soil; or who are concerned with the importation of →

To be sure, such discourses are entangled with the perspectives and interests of those who produce them – often selecting, framing and even distorting "facts" in order to bolster their arguments and strengthen their influence over other actors, as we shall see throughout this article.[4]

In any case, the simple story of war and food found in many accounts is that those who have food win wars, and those who do not have food lose them. Variations of this narrative suggest, for example, that production contributes to victory, while failure to produce food leads to defeat; that dependence on imported food risks vulnerability to embargo or blockade, while securing trade or localizing production safeguards the nation; or that hording food sabotages the war effort, while equity of distribution contributes to the cause.[5] In any case, such accounts conceive of food as a means to an end, as a metric of success or, even, as a cause of various possible outcomes. Whether this diminishes the place of food in such accounts is debatable. While these are accounts of war, food is seen as essential to war's outcome. But ultimately, I find these accounts unsatisfying because of their simplicity. Here, I build on recent scholarship, cited throughout the article, that better recognizes multiple dimensions in the relationship between war and food, while elaborating an argument more pointedly and succinctly than I have seen elsewhere. I argue that food may shape war, but that the relationship between food and war is more complex. Motives for food-related actions in wartime vary greatly and are not always defined by the aim of military victory. In such contexts, war also shapes food in important and often durable ways. And as significant as war may be in transforming lives, people may experience the transformations

→ foodstuffs, will find in this book information which if carefully applied can materially strengthen the defences of the nation" (Plimmer, 1935).

4 Exemplary of this dynamic, see Healy (2004), which examines official propaganda imploring civilians in Vienna to make sacrifices to support the military during the First World War, and how this was contested by elements of the population who saw themselves as sacrificing more than others; and Vrints (2015), which similarly examines how various elements of the Belgian population asserted their rights to food in the face of shortages during the First World War.

5 Offer (1989) argues that British access to food supplies in the overseas territories of its empire gave it an advantage over Germany, which lacked such resources. Weinreb (2017, pp. 49-87), details how the end of the First World War brought a shift in German strategy away from seeking to compete with the likes of Britain in the extraction of food resources from colonial territories toward a combination of greater self-provisioning and territorial expansion into Eastern Europe and beyond. Weinreb also argues that, for the Nazi regime, war was looked upon as a lethal struggle for resources not only with other nations, but also within the nation – a zero-sum game in which the Aryan race was prioritized over others, some of whom were systematically starved to death.

wrought by war in their continuing engagements with food long after war has ended.[6]

In seeking to tell a more nuanced story of war and food, I take inspiration from the late 19th century Russian author Leo Tolstoy, whose epic, *War and Peace*, challenged simplified historical accounts in its own way. Tolstoy took exception to histories that focused on the deeds of "Great Men." He emphasized instead how events were shaped by thousands of people, mostly acting out of necessity rather than heeding the calls of their leaders in service of lofty ideals and national causes. He wrote: "For the investigation of the laws of history, we must completely change the subject of observations, must let kings and ministers and generals alone, and study the homogeneous, infinitesimal elements by which masses are led" (Tolstoy, [1869] 1979, part 11, chapter 1, p. 768). Tolstoy was interested not in how the visions of leaders were realized through war, but instead in how people navigated war to their own myriad ends, and how these acts shaped larger historical developments. For him, history was not the effect of simple causes, but rather the complex product of complicated relationships, for example, between leaders and those they commanded, or between ideas and the realities of lived experience. As an anthropologist, I find Tolstoy's focus on complicated social dynamics and the minutia of human motives and actions compatible with more recent forms of social history and ethnographic approaches to the human experience of war, including several works on war and food cited in this article.

In light of Tolstoy's understanding of war, it seems to me that the relationship between food and war must be seen as far more complex than many accounts recognize. Food is not merely a factor in the outcome of war – a variable to be managed by military commanders and government ministers in the production of desired outcomes. Too many actors are involved with food along the chain of its production, processing, trade, distribution, and consumption – each with their own stakes, their own perspectives, and their own agendas. These myriad actors respond in part to the aims and policies of leaders, but also respond to other cues, not to mention acting with consequences to which leaders must themselves respond. In the mix, food is both a factor and a product of war – it is both potentially transformative and potentially transformed.

6 This issue is perhaps dealt with best in the literature on war and food security in the global south. For example, Collinson and MacBeth (2014, p. 2) remind us of the vicious circle through which conflict causes food insecurity and food insecurity causes conflict. But food security is only one of many dimensions of food effected by war.

This is the story of war and food that I wish to highlight in this article – one comprising myriad little stories (infinitesimal units, to use Tolstoy's language) within a larger historical drama defined by these component parts. To achieve this, I examine the story, not only of how one particular food – namely, cheese – has historically shaped wars, but also of how wars have historically shaped this food, along with the people who have made it, traded it, and eaten it.[7] I seek to understand what they intended to accomplish in their wartime engagements with cheese, and how they experienced war's transformative consequences in the realm of food in which they worked.

My focus on the dynamic interaction of war and cheese is also influenced by the philosopher and cultural theorist, Paul Virilio. In his best-known work, *Speed and Politics*, Virilio asserted that "history progresses at the speed of its weapons systems" (Virilio, [1977] 2006, p. 90). Fleshing out this idea, Virilio looked at violence through a range of technologies, showing how seemingly innocuous technologies bear within them kernels of violence/domination, as well as how technologies expressly developed for war ultimately transform society in unforeseen ways. By my reading of Virilio, war and technological transformation are profoundly entangled, such that it is often impossible to discern which is driving which, or which is serving which.[8] Over the course of two decades studying the history, culture, and political economy of cheesemaking,[9] I have found the same to be true of the relationship between war and cheese. Cheesemaking has often marched to the beat of war drums, provisioning armies and civilians, even as it has sustained its producers; at the same time, cheese – along with those who produce it, sell it, and consume it – has been profoundly transformed by war time and again, often in unintended or

7 In doing this, I respond in part to Cwiertka, who has written: "Food shortages, rationing and hunger are the most common associations with war, but, as the growing body of scholarship indicates, food may also serve as a useful research focus to reveal the mundane details of the everyday in an otherwise poorly documented period" (Cwiertka, 2013, p. 1).

8 It should be noted that Virilio is a highly controversial figure, and his work difficult to decipher to the point that some critics characterise it as non-sensical.

9 Since 2003, I have conducted ethnographic fieldwork with more than 200 cheesemakers and dozens of cheesemongers in 30 different regions in 13 countries. I thank those with whom I worked for speaking with me and allowing me to tell their stories and share their perspectives. Research was funded by the British Academy (LRG 45537). I had no financial interest in, nor derived any financial benefit from, this work. Fieldwork referred to in this article was facilitated by Aylin Öney Tan, Ewa Spohn, and Tangör Tan. I therefore speak of research that "we" conducted, although I am the sole author of this article. Comments on drafts were generously provided by Paul Brassley, George Kunnath, Kawa Morad, Peter Scholliers, and members of the Nkumi writing group including Nora Faltmann, Lizzy Hull, Jakob Klein, Anne Murcott, James Staples, Chenjia Xu, and Sami Zubaida.

unforeseen ways. Such transformations have benefitted some of those working in the sector, while undoing others. This, too, is the story of war and cheese that I explore in what follows.

I focus on cheese in part because it is the foodstuff that I know best, having studied cheesemaking for twenty years; those who have studied other foods might explore their histories to similar effect, for various elements of the story that I tell here may be true of other foods – not to mention of the products of other industries. Nonetheless, cheese lends itself particularly well to such an historical project. Cheesemaking renders milk more durable and portable – especially so with harder, aged cheeses – making cheese an ideal source of animal-derived protein at some remove from its place and time of production. For this reason, its historical entanglements with war have been many and profound over the ages. The simplest story of war and cheese is that cheese has been a staple of armies from ancient times to the present. Hittite tablets refer to "aged soldier cheese" (Chapple-Sokol, 2016, p. 476). The Jewish King-to-be, David, came to the front (c. the 11th century BCE) where he eventually slew Goliath, the Philistine, because he was transporting ten of his father's cheeses to the Israelite army (Chapple-Sokol, 2016, p. 476). The 5th century BCE Athenian general and historian Thucydides tells of how the Spartans called on volunteers to break the Athenian blockade at Pylos during the Peloponnesian War by running "milled grain, cheese, any other foodstuff suitable for men under siege" (Thucydides, [4th c. BCE] 2021, 4.26); and the chorus in the late 5th – early 4th century BCE Athenian poet and playwright Aristophanes' *Peace* strongly associated cheese with war, exclaiming: "Oh! joy, joy! No more helmet, no more cheese nor onions! No, I have no passion for battles…" (Aristophanes, [421 BCE] 1994-2000, p. 1129).[10] According to the historian Andrew Dalby, "For the Romans, as for the Hittites before them, cheese was a typical army food, alongside bacon and vinegary wine" (Dalby, 2009, p. 44). The 1st century BCE Roman poet Virgil mentioned that Roman soldiers received 1 ounce of sheep's milk cheese per day (Chapple-Sokol, 2016, p. 476). Archaeologist Michel Bouvier adds to this picture, telling us that Roman legionnaires ate Parmesan and Pecorino cheese during their campaigns, before eventually adopting hard cheeses that they discovered in the mountains of Gaul. He informs us that the Emperor Hadrian set the legionnaire's ration as follows: 832 grams of wheat; 117 grams of mutton or 96 grams of lard; 27 grams of cheese; 1/2 liter of wine; and 21 grams of salt (Bouvier, 2008, p. 15). Seamen in the British navy in the Georgian period reportedly received a 4-ounce ration of cheese every Monday, Wednesday and Friday (Rodger, 1988, pp. 82-85; see

10 My thanks to John Wilkins for calling my attention to these passages.

Valenze, 2011, p. 119). In the First World War, Kraft cheese – emulsified and preserved in a tin – was a mainstay of American army rations (Chapple-Sokol, 2016, p. 476). In such contexts, cheese has fed soldiers, and in doing so, it has been a factor in the prosecution of war.

The more complex story of war and cheese is that, even while cheese has met the demands of war, it has itself been shaped by war. So too have the makers of cheese, its vendors, and those who have eaten it. Transformations have taken many forms, from disruption and destruction, to technological development and the production of new traditions. In what follows, I do not present a comprehensive, chronological history of cheese in wartime – a far greater project than space allows – but instead provide evidence for my argument by outlining four domains in which cheese has shaped, and been shaped by, war: sourcing and supply chains; demand and consumer preferences; labor arrangements; and methods of production. Of course, the phenomena explored in each of these domains are not exclusive to wartime contexts, but this is precisely the point: the relationship between war and food is entangled with many other dynamic social processes. And these phenomena have their own histories – e. g., the changing nature of trade; the way particular technologies have reshaped productive processes, and bureaucratic arrangements; the rise of consumerism, and the emergence of a public sphere; the appearance of brands, and a marketing industry; the increasing magnitude of migration globally – all of which lends further complexity to the relationship between this food (and potentially other foods) and war.

I illustrate the mutually constitutive relationship between war and cheese in each of these domains through the presentation of one or more cases – some drawn from my own field research and others from the work of scholars who have studied the history, culture and political economy of cheesemaking in various contexts. My sources are admittedly eclectic, reflecting interest in an object of study that has emerged from material collected during multi-sited ethnographic research over decades, as well as engagement with relevant secondary sources (some pertaining to places in which I have worked, and some included for their comparative relevance). The breadth of this research has afforded comparative and connective perspectives that I could not have gained through more traditional ethnographic work, but it has also had limitations. I have not, for example, been able to systematically engage with archival sources in the many places that I have studied, and most of my accounts are therefore less comprehensive than more traditional ethnographic methods (such as those I employed in the first half of my career) might have produced. The shifting between socio-economic contexts and particular histories that this research gives rise to in this article may unsettle some readers, while my

lack of engagement with primary sources beyond my own observations and interviews in some places may produce accounts that some consider incomplete. I ask readers, however, to look beyond these shortcomings to consider the broader picture that such a constellation of material enables me to produce and invite them to assess the utility of my argument in the context of particular cases that may interest them.

FROM SELF-PROVISIONING TO DOMESTIC INDUSTRY

Mimolette is a washed-curd cheese that resembles a ripe cantaloupe, with a rugged light brown rind and a bright orange interior. Its name derives from *demi-mollet*, meaning semi-soft. The cheese is supple in texture when young, but when aged it tastes of dried fruits, nuts and caramel (Khosrova, 2016, p. 483). It is suspiciously similar to the Dutch cheese, Edam, and is in fact often referred to as *vieux hollande* ("old Dutch"). The explanation for this lies in the cheese's origins: Mimolette is the product of war.

Prior to the Franco-Dutch War (1672-1678), the French consumed considerable quantities of Dutch cheese, including especially Edam which, because of its durability, was a good source of sustenance not only for the general population in the hungry season, but also for sailors and the army (Khosrova, 2016, p. 483).[11] Edam had a pale interior, but the crusts of cheeses were stained red with turnsole (a dye also used to illustrate manuscripts) mixed with urine (McKeown, 016, p. 246). But when Louis XIV waged war against the Dutch and their allies, dependence upon trade with the Dutch constituted a vulnerability for the French, and its severance offered a potential advantage. The French Minister of Finance, Jean-Baptiste Colbert, adopted mercantilist policies to maximize state wealth and minimize vulnerabilities by promoting domestic industries and reducing French reliance on imported goods, especially those produced by rival states. His policies included an embargo on trade with the Dutch. Following upon the French occupation of Flanders, residents of its capital, Lille, and surrounding areas – who were particularly fond of Dutch Edam – also lost access to Dutch cheeses (Légasse, 2021). To mitigate the impact of this loss, both for the French and for Flemish subjects whose allegiance the French wished to cultivate, Colbert allowed – even encouraged – Flemish farmers in the region around Lille to develop and produce their own Edam-type cheese (Khosrova, 2016, p. 483).[12] Colbert insisted that the paste of the cheese be colored orange by mixing annatto into the vat so that the cheese

11 See Inspirations Food, "Petitie Histoire."

12 See also Masui and Yamada ([1996] 2000, p. 36); Sauvebois (2019).

might be distinguished from Edam of Dutch origin which was confiscated and destroyed by French authorities (Les Frères Bernard, n. d.). Thus, Mimolette was born.

The story is not an unusual one. In wartime, the origins and destinations of foodstuffs are of strategic significance, and lines of supply can become questions of utmost political importance. Take, for example, the British case. Britain is an island upon which the relative importance of manufacturing vis-à-vis agriculture has long been more pronounced than elsewhere. Consequently, Britain has long imported a relatively high percentage of its food – whether from its own imperial territories or from other sovereign states. This has made the British food supply especially vulnerable in times of war to embargo or blockade. Among the solutions to this problem, historically, have been wartime campaigns to produce more food locally, and to encourage the population to consume more locally-produced food. In a pamphlet published in 1914, for example, Sir Robert Henry Rew, who was chair of the British government's Grain Supplies Committee, not only highlighted the danger of dependence on imported foods, he also outlined the British strategy for mitigating such risk, which included substituting what could be grown at home, such as barley and oats, for what could not, such as wheat (Rew, 1914). Where food comes from in times of war has also been an issue for armies on the march. Cwiertka sheds light on the subject in her comparison of the ways in which the United States and Japanese militaries managed their supply chains during the Second World War. While the US sourced rations for its troops from home, Japanese troops drew upon local supplies. The US strategy proved successful, as its food industries were undisturbed by the war and its navy was able to keep supply convoys running throughout the war. The Japanese strategy, by contrast, failed in the latter stages of the war, as food supplies in various war theatres collapsed, and their troops starved (Cwiertka, 2014). Yet this differential outcome was by no means given. Sourcing food locally is a strategy that has served some armies well historically, while maintaining long supply lines from home has sometimes proven disastrous.

Sourcing cheese from within its own, secure borders – for soldiers and the general population alike – made sense for the French during the Franco-Dutch Wars. But the case of Mimolette raises other questions more germane to the story I wish to tell. Why did Flemish farmers respond to Colbert's call? Why was the discourse of national necessity effective in this instance? Following Tolstoy, I am led to wonder what mundane reasons animated their entrée into cheesemaking. Did they embrace new market opportunities created by the war? Or did they take up this challenge out of necessity, and if so, what were the forces that compelled them? The impact of the war on other livelihoods?

Coercion on the part of the French state? These questions remain unanswered for, as far as I am able to discern, the history of Mimolette is silent on the motives of these first producers.

Questions such as these are more easily answered in other contexts. A particularly interesting case is that of Oleg Sirota, who makes cheese today in Dubrovskoye, some 60 kilometers outside of Moscow. According to the story that he tells in a short film directed by Ben Garfield (2016), Sirota's cheese was also born of war, namely the Russian seizure of Crimea in 2014. After the United Nations declared this annexation to be a violation of international law, and Western nations subsequently imposed sanctions on Russia, the Russian government responded with counter-sanctions of their own. Among these was a ban on the import of Western cheeses not dissimilar to the 17th century French ban on Edam. Sirota cites the Russian ban as the impetus for his career switch, from running a successful IT business in Moscow, to becoming a cheesemaker. In his own words, "The day the sanctions were introduced, August 7th 2014, I thought, I'm changing my life and I'm opening up a cheese farm." A plaque on the wall of his dairy reads: "Opened on August 7th 2015, the anniversary of the Russian counter-measures in response to the western sanctions." A review of the film in the British weekly, *The Economist*, puts Sirota's story in a broader context of a Russian state discourse of national imperative. It reported:

> Last year [the Russian President] Mr Putin announced plans to spend some 2.5 trillion roubles ($37 billion) on 2,500 import-substitution projects… Most industries have a hard time replacing foreign components and know-how. Yet agriculture has been a bright spot of sorts, as 'anti-sanctions' have cleared space for Russian producers. Russia imported about 440,000 tons of cheese in 2013. Through the last 11 months of 2015, that had halved to just 180,000 tons. [*The Economist*, 2016]

The Economist concluded: "Mr Sirota hopes to help restore Russia's self-sufficiency, which (like Mr Putin) he considers a matter of both dignity and security" (*The Economist*, 2016). This may be true. But Sirota's story is more complex than this. To be sure, he was inspired by Putin – a leader that he considers to be a "great man". He tells us, quite simply: "His decision to reclaim Crimea paved the way for me to open up my cheese factory" (Garfield, 2016). Further along the chain of events, Russian enforcement of the counter-measures has been decisive for Sirota, affording an enabling context for his new business. He puts it this way: "There's a bulldozer at the border near Belgorod that is crushing Italian Gorgonzola, and that bulldozer is my ally. While it's crushing Gorgonzola at the border, my country is shielding me from the competition that I can't compete with." What is more, his narrative is steeped in patriotism. Expressing

the resentment that fuels nationalism in Russia today, as elsewhere, he says: "Nobody else needs us, nobody loves us." He aligns himself with the greater nationalist movement, saying: "It's difficult to compare myself to the heroes fighting for Russia and the Russian people in eastern Ukraine, some dying, but I think that here on the home front, I make my own small contribution to the Russian cause" (Garfield, 2016).

Notwithstanding all of this, the way he translates nationalism into action is very much his own project. Neither Putin nor Mother Russia asked him to make knock-offs of Western cheeses (he makes cheeses that he markets as Parmesan, Gruyere, Emmenthal, Limburger, Bergkase, etc., explaining that "[i]t is legal to make European cheeses in Russia, it's just illegal to import them"). Indeed, the Russian state has done little to facilitate Sirota's nascent enterprise, betraying tensions between the needs of the state and its military project and the needs of civilians (in this case a producer such as Sirota). He tells viewers that proper Parmesan, Gruyere and Emmental should be made in a copper cauldron, but Russian sanitary legislation doesn't allow this. He reports that he has written to a parliamentary official asking for the ban to be lifted but had no reply (Garfield, 2016). The "great man" himself has been just as silent, he reveals:

> I wrote a letter to Vladimir Putin when I was opening up the cheese factory. It was my dream for the president to come here… I have a present here waiting for him – his own personal wheel of Bergkase cheese. [Garfield, 2016]

Sirota goes on the explain: "It's the cheese he ate while working in Germany for the KGB as an intelligence officer." The film shows a wheel of cheese with "Putin V.V." engraved in the side, aging on a shelf (Garfield, 2016).

Sirota lives on the desolate, wind-swept plain in a tiny, one-room building with space for little more than his bed – this, instead of the Moscow flat that he once inhabited. He tells us: "I dream here, and every morning when I wake up, I see the model of my future farm." We are shown a tiny model on a table in his room. He continues:

> I love it. Look, here's the cowshed… hay storage… one day there might be a hotel here… stable. I look at it every day, and I get up and I make it all come true. The steps are small, but I make them every day. [Garfield, 2016]

He has persisted, not because of Putin's vision, but because of his own. "I have a dream, and God is helping me make it come true," he tells us. "It was difficult making the first move. It's always difficult to dare. But I heard destiny

calling". At the same time, he speaks explicitly of his fears: "I have a recurring nightmare – a real nightmare – and I wake up trembling […] I dream that the sanctions are lifted. And that's it, everything's over" (Garfield, 2016). His vision is a solitary one, and he appears a lonely character. He ultimately seems to care more about sanctions staying in place than about Russia "winning" any "war" – whether hot or cold. He confesses: "If [US President] Obama, [German Chancellor] Merkel, and [British Prime Minister] Cameron would say the sanctions would be here for 15 years, the next week I would build a full-scale bronze statue of each of them, with cheese wheels in their hands." He adds to this:

> I have high hopes that the sanctions are here for good, because they say, "return Crimea to Ukraine, and we'll lift them all." They don't understand that Crimea won't be returned. It's not possible. Like it's not possible to cut off one's arm or leg. He [presumably referring to Putin] won't do that. [Garfield, 2016]

Despite his solitude, Sirota imagines the sum of infinitesimal acts like his adding up to something more expansive. "I just want to help my country to overcome, to develop the necessary skills to make cheese," he says. "That's why I want to see a lot of cheese factories like mine in Russia" (Garfield, 2016).

Whether Sirota's dreams of remaining a cheesemaker will come to pass, we do not yet know. Nor do we know if the first producers of Mimolette dreamed of becoming and remaining cheesemakers. What we do know is that Flemish farmers in the north of France not only responded to Colbert's call, they ultimately gave birth to a tradition that has been practiced by hundreds of cheesemakers over more than four centuries. They have made cheese long after the wars with the Dutch ended – long after the state asked them to do so. They have done so because it has provided them with good livelihoods, and because their product – long referred to locally as the *Boule de Lille* – has come to be celebrated as valuable local heritage (Khosrova, 2016, p. 483). Indeed, Mimolette has distinguished itself from Edam; while Edam today is coated with wax, Mimolette has a natural crust whose rustic texture is in part the work of cheese mites that promote ripening (Khosrova, 2016, p. 483). Mimolette enjoys status as a Protected Designation of Origin, and it fetches a good price at the higher end of the market for quality food products. As its story shows, cheese may serve the needs of war, but in the process, needs big and small may become intertwined with opportunities, and war may serve as the cradle of new cheesemaking traditions.

FROM MEETING WARTIME DEMAND TO SHAPING CONSUMER TASTES

Camembert is a semi-soft, mold-ripened cheese with a "bloomy" white rind. It is one of the most recognized cheeses in the world today. But this was not always the case. Indeed, Camembert was little more than a regional product until the First World War popularized it throughout France. The story is well told by the French sociologist, Pierre Boisard. He writes:

> For Camembert… the 1914 war was not a defensive war, it was one of conquest. The cheese was already known in 1914, but its fame was limited to Paris, Normandy, and a few large cities in the northern part of the country, while virtually unknown elsewhere… The First World War was to crown it as the national cheese by spreading its name throughout the country and making it available to every social class. It was in the trenches that grass-roots France became familiar with Camembert. [Boisard, (1992) 2003, p. 102]

At the start of the war, the cheese supplied in French army rations was Gruyere. It was a logical choice for the context: it was hard, dry, portable and durable (Boisard, [1992] 2003, p. 104). But the syndicate of Camembert producers were eager for a piece of this market, despite the fact that their product was less durable, and less portable (Boisard, [1992] 2003, p. 104). The syndicate struggled to secure a contract with the extremely bureaucratic French army quartermaster, until finally, in 1917, an order for 400 cases per day came through (Boisard, [1992] 2003, p. 105). The price was less than on the open market at Les Halles, but the syndicate saw it as an opportunity to expand their market, and it lobbied members to rise to meet the demand (Boisard, [1992] 2003, p. 107). They struggled to do so. Milk was in short supply, and expensive; when producers succeeded in obtaining enough milk, they were themselves accused of driving up the price of milk, which was also needed to meet the dietary needs of children (Boisard, [1992] 2003, p. 111).[13] Other shortages – of coal to heat the vats; of salt and rennet to make cheese; of materials for packaging – also hampered production (Boisard, [1992] 2003, pp. 108-109). The rising costs of scarce raw materials translated into higher prices, and producers were accused of wartime profiteering (Boisard, [1992] 2003, p. 110). The syndicate explored the idea of placing pamphlets in the boxes of cheese to justify their product by draping themselves in the flag, but government regulations

13 Cf. Valenze (2011, pp. 184-185) regarding competing demands for milk with which to make another product for military rations – namely sweetened condensed milk – during the American Civil War.

prevented them from doing so (Boisard, [1992] 2003, p. 108). Eventually, the French government stepped in to regulate the milk market, and Camembert producers were somewhat insulated from such criticism, but the case underscores the theme of tensions between the state and other actors highlighted in the introduction to this article.

While the war itself was an uncomfortable period for Camembert makers, the syndicate's decision to supply the army paid off in the years immediately after the war. Boisard suggests that accusations of profiteering were soon forgotten (Boisard, [1992] 2003, p. 112). He concludes:

> The syndicate's calculated decision to give priority to supplying the front lines to the detriment of the home front ended up benefitting the image of Norman Camembert, which, like that of ordinary red wine, the famous *gros rouge*, would long be associated with the Great War. [Boisard, (1992) 2003, p. 112]

The vector for this effect, according to Boisard, was former combatants. He explains:

> After the Armistice, the demobilized infantrymen all remembered the cheese, one that most of them had never tasted before. Once back in their home regions, they asked their village grocers to obtain for them the Camembert that reminded them of those few brief and precious moments out of the fray, of the snack times when they could relax and joke together before returning to face the enemy's guns. [Boisard, (1992) 2003, p. 112]

The transformation of Camembert from a regional product to a national one – which was undoubtedly also the product of the continuing efforts of its producers – had its downsides for Norman producers. Imitators quickly sprang up, not only in the region, but also elsewhere in France, and even overseas, and they captured much of Camembert's expanding market (Boisard, [1992] 2003, pp. 113-115). It would be decades before a Protected Designation of Origin legally protected the Camembert name (in 1983). Still, the Camembert story illustrates how food – in this case cheese – not only brings sustenance and comfort to troops in wartime, but also potentially transforms consumer perceptions of the foods that comfort them, historically changing tastes along with the markets that serve them.

Again, the story is not unique. Madame Clicquot reputedly offered her Champagne to the Russian, Prussian and Austrian troops pursuing Napoleon and his army after their withdrawal from Moscow, declaring "Today, they drink. Tomorrow, they will pay!" And they (or at least their compatriots) did, with her champagne finding enthusiastic consumers in Russia following the

war (Hénaut and Mitchell, 2018, p. 158).[14] During the Franco-Prussian war, historian Alain Drouard tells us, the French were compelled by necessity to eat horse meat. He suggests that they continued to do so by preference after the war, and the consumption of horse meat remained common in France until after the Second World War (Drouard, 2011).[15] The anthropologist Sidney Mintz details how Coca-Cola capitalized upon privileged access to American troops in the theatres of the Second World War to raise its status from a beverage largely used as a mixer in the American south to a ubiquitous symbol of the American nation – even, freedom itself – not only among American soldiers and the nation that they returned to but also among consumers worldwide (Mintz, 1996, pp. 26-27). Indeed, military and government interventions during wartime have often reshaped dietary preferences with powerful effect in the post war context. According to Hugo Slim, an academic and policy advisor with expertise in the ethics of war and humanitarian aid, "Britain's extraordinary rationing programme in the Second World War left the British population with better nutritional status after six years of war than before the conflict started" (Slim, 2014, p. xi).[16] And Cwiertka has documented how the Japanese military's focus on improved diet and nutrition during the First World War was extended to the Japanese population at war's end, as well as how the population subsequently embraced dietary modernization (Cwiertka, 2002).

Looking closely at the history of war and cheese adds even more nuance to the picture. As the Camembert case shows, troops returning home to civilian life may serve as vectors for transforming dietary practices, changing food preferences, and shifting market demand for specific foodstuffs. Other wartime actors – beyond the institutions of the military and the state – may also do so; Camembert producers themselves are but one example of this. Another fascinating example emerges from the case of Korycin cheese, produced in what is today the northeast of Poland.[17] While the cheese today is soft and moist – even slick in texture – it was a dryer cheese, aged longer before consumption, until it was transformed by state-run factories established in the

14 This is, at least, the story told by Madame Cliquot; while it is unlikely common veterans would have been the drivers of demand in Russian, officers may have contributed to it.

15 Drouard may exaggerate the scope for "choice" on the part of the poorer classes.

16 See also Lightowler (2014). Valenze (2011, p. 239), insightfully suggests that "warfare renders whole populations subject to a nutrition experiment."

17 I tell this story with a focus on other themes elsewhere (West, 2022). My account derives from interviews with multiple cheesemakers, as well as officials, who researched the history of Korycin cheese in order to safeguard their cheesemaking heritage and to obtain recognition for the cheese as a "traditional food product" from the Polish Ministry of Agriculture.

region in the 1970s. Local producers of the cheese trace its origins back to a hard, aged Swiss alpine cheese. This unlikely lineage is the product of war – in this case the 17th century Swedish invasion of northern Poland, referred to as the "Deluge", or *Potop* in Polish. Alongside the Poles who resisted the Swedish incursion were Swiss mercenaries, some of whom were wounded and convalesced at a farm in the village of Kumiała outside of Korycin. It was these men, according to oral histories that we collected, who taught the locals to make rennet by drying and grinding calves' stomachs, and to use it to produce a "yellow cheese" (the term commonly used in Eastern Europe, the Balkans, the Middle East and Asia to refer to a cured cheese, as compared with a fresh "white cheese") that was aged for weeks in a cellar on rye straw. Cheesemakers with whom we met told us the tradition was passed down through the generations, with the cheese being made on small farmsteads until the 1970s. And while the cheese that they produced more closely resembled that which had been made in larger factories from the 1970s onward, they still pointed to the wounded Swiss mercenaries as the pioneers of cheesemaking in Korycin. Indeed, the story of their cheese's Swiss lineage afforded them a unique selling point when marketing their cheese nationally.

Elsewhere, it is wartime refugees who have been the vector of new preferences and productive traditions. For example, we spent time with two women, Lale Ajiba and Zerrin Shamba, in the Turkish village of Harmantepe in the Adapazari district of Sakarya province in June 2011 as they made a stretched-curd cheese in one of their kitchens. They told us that knowledge of how to make this cheese had been passed down to them, along with the starter cultures that they used, by their Apazian forebears – Sunni Muslim refugees who fled the Circassian region in the wake of the 1864 war with Russia. They told us that Apazian refugees from this war had migrated to many places, including Turkey, Bulgaria, Greece, and Syria, and that some of the stretched-curd cheeses found in these places traced back, via these refugees, to the Circassian region. A more recent example is afforded by Razan Alsous, a Syrian refugee who fled the war in her country in 2012 and responded to the seasonal absence in Britain of the cheese she knew best in Damascus – Hallum – by setting up a dairy in 2014 in her new home, Huddersfield, to make it herself. Just two years later, she had won the World Cheese Awards Gold Prize for her Yorkshire Dama, which referred to her homelands old and new and brought the taste of Damascus to migrants and longer-standing residents of Yorkshire alike (Gander, 2017). In such cases, not only has cheese sustained people in wartime, but war has spread the production and/or the consumption of particular cheeses to new places, sometimes within national boundaries, but often well beyond them.

FROM ANSWERING THE CALL-UP TO RATIONALIZING LABOR

Cheddar cheese is named for a village in Somerset, England. By the time of King Henry II, in the late 12th century, the Cheddar name was used to refer to hard cheeses made in the broader Southwest region, and by the time of Queen Elizabeth I's reign, in the 16th century, Cheddar had an excellent reputation throughout Great Britain (Linford, 2008, p. 112). Eventually, the cheese would come to be produced in a number of other countries, including especially former British colonies such as the United States, Canada, Australia and New Zealand (Linford, 2008, p. 114; Studd, 2007, p. 209). Cheddar's internationalization was facilitated to a significant degree by Somerset native Joseph Harding, a 19th century cheesemaking pioneer who not only worked tirelessly to promote the application of scientific knowledge to cheesemaking in Britain (Edgar, 2016, p. 343),[18] but also to disseminate this knowledge to others elsewhere (Percival, 2016, pp. 132-133).

In the United States, the growth of Cheddar making was significantly aided by a farming couple in upstate New York named Jesse and Amanda Williams, who also adopted a scientific approach to their craft. By 1850, the Williams' farm was producing 25,000 pounds of cheese per year (McMurry, 1995, p. 123). But tensions within the Williams family between, on the one hand, Jesse and Amanda, and on the other hand, their eldest son George and his wife (who either lacked confidence in cheesemaking, or in whom his father lacked confidence), led to a novel approach: the elder Williams pooled the milk from his farm and his son's to make cheese in a purpose-built dairy in a central location. Soon thereafter he realized that, if he could combine the milk of two farms, he could do so with several, giving genesis in 1851 to the first cheese factory (Alexander, 2016; Palmer, 2019, pp. 237-238).[19] While the Williams' factory was the stuff of much local interest, their model was slow to catch on. This was to change dramatically in the next decade, however. The most significant factor in this transformation was war.

The proliferation of cheese factories in the United States during the American Civil War is, in the main, a story of the changing dynamics of labor. The war drew large numbers of men from farm country; for example,

18 This included: keeping the dairy well separated from the herd; cooling stored milk; using commercial rennet; foregoing the use of soured milk; "scalding" the curd; testing the acidity of the curd; using an improved mill of his own design; and aging cheese at a higher temperature.

19 The term, "factory", derives from "factor" – meaning, a middleman, or commercial agent, who buys and sells goods on behalf of another person. The first cheese factories are dairies in which cheese is made from milk purchased for the purpose from others rather than being made on the same farm where the animals are milked.

approximately 4,000 men from the Williams' home county of Oneida alone answered the call to serve in the Union army (McMurry, 1995, p. 130). With so many men away, elders, youth and women filled in. While women had traditionally been involved in cheesemaking, now there were few men to play any part in it. And of course, cheesemaking was not the only work to be done on the farm; crops had to be harvested, fodder made, and cows milked. Along with cheesemaking, these tasks became women's work (McMurry, 1995, pp. 131-132). What is more, with men at war, there were other jobs in the broader economy that needed to be filled. These roles included teaching in schools, or clerical work in government offices, but also jobs in support of the war effort, such as preparing provisions for the front (McMurry, 1995, pp. 130, 132-133). Labor demands in these areas exacerbated the shortage of hands on the farm and drove up the price of agricultural labor where it was to be found (McMurry, 1995, p. 130). Increased mechanization alleviated the crisis in some areas, as new farming technologies, such as mowers and reapers, came available (McMurry, 1995, p. 131). The cheese factory was, in a sense, another of these new technologies.

In 1860 – the year before the war began – there were 36 cheese factories in New York state. By 1866 – the year after the end of the war – there were more than 500 cheese factories in New York state (Kindstedt, 2005, pp. 29-30). Crucial to the success of factory-made Cheddar was the impact of the war on the market for cheese. While northern cheesemakers lost access to the southern market, the demand for American Cheddar rose in Great Britain due to its lower cost of production, and the British market was more lucrative for American makers because buyers were willing to pay in gold. This not only helped American cheesemakers cope with wartime inflation, it also catalyzed further investment in the sector (Percival and Percival, 2017, p. 186; McMurry, 1995, p. 129).

However, the fundamental driver of the transformation of American cheesemaking during the Civil War was the rationalization of labor. This too is a common dimension of the relationship between war and food. For example, the First World War saw the rise of the field of "home economics" in the United States – promoted by state propaganda – not only to better equip housewives to prepare healthy meals from limited resources but also to replace the labor power of domestic servants drawn into other jobs in the wartime economy (Veit, 2013, pp. 91-93). This was consolidated during the Second World War, as the US government cast the home kitchen as a domestic war front, and "wartime homemakers" were called upon to support the war effort by serving up nutritious meals to their families while adhering to rationing arrangements (Bentley, 1998, pp. 30-58). In Great Britain, during the Second World War,

the shortage of agricultural labor was a key concern in the drive to step up domestic production to meet wartime needs and to protect the nation from dependency on imported food. Part of the answer to this lay in the reorganization of farm labor. The Women's Land Army was a crucial component of meeting this challenge and, like agricultural restructuring in the context of the American Civil War, saw women taking on traditionally-male jobs (Wilt, 2001, p. 192). What happened with cheese making in the US in the mid-19th century was the other side of the same coin; factory cheesemaking allowed a very small number of, generally, men to take on what had previously been women's work but, this, precisely to free larger numbers of women up to move into jobs that had until then been occupied by men. Meanwhile, the spaces in which cheese was made were utterly transformed. In the words of Bronwen Percival and Francis Percival (London-based food writers, the former of whom is also cheese buyer for Neal's Yard Dairy):

> The factory was safely isolated from the domestic world; it was a space devoid of escaped livestock, crying babies, or supper to prepare. Factory cheesemakers were professionals, and they were specialists… Under their watch, cheesemaking was transformed from a flexible and adaptable method into a set of rigid rules, measurements, and timings. Women making cheese on the farm could be taught better methods and given better tools, but it was only when cheese making was removed from the domestic sphere that it was finally brought under the discipline of the clock. [Percival and Percival, 2017, p. 185]

The impact of this on productivity was also significant. According to Professor of Food Technology Paul Kindstedt: "A striking reduction in labor was achieved by producing cheese centrally. Moreover, large amounts could now be made by a single cheese maker, resulting in cheese of more uniform quality" (Kindstedt, 2005, p. 29). Just a handful of workers could process milk harvested from dozens of farms, and from more than 1000 cows. Some factories produced as much as 200,000 pounds of cheese per season (McMurry, 1995, p. 127).

Once again, the transformations seen in cheesemaking were both a response to the call of wartime leaders and government propaganda, and a product of a multitude of decisions taken by people looking to navigate a plethora of individual and family-level crises brought about by war in the most sensible way possible, and/or to make the most of the opportunities a wartime economy suddenly afforded them. And once again, these transformations – which proved more durable, for example, than the feminization of farm labor in Great Britain during the Second World War – produced unforeseen and, for some, eventually undesirable effects. In Kindstedt's words:

> The mass exodus of men from northern farms to fight for the union army left women on the farms with the overwhelming burden of doing it all […]. The local cheese factory provided overstressed farm women with much needed relief from the seven-day-a-week burden of making cheese. The urgency of the times thus made it easier for farm women to make what must have been heart-wrenching decisions in many cases to give up the time-honored profession of cheese making. [Kindstedt, 2018, p. 206]

As a result, Kindstedt laments, by the end of the 19th century, farmhouse production of cheese in the US had largely ceased to exist (Kindstedt, 2005, pp. 29-30).

FROM MAXIMIZING EFFICIENCY TO THE STANDARDIZATION OF CHEESE

Cheddar may be the best-known British cheese, but it is by no means the only one. The most prominent cheeses on the British cheeseboard include a number that represent productive traditions grounded in the various dairying regions after which they are named – the "territorials", such as Cheshire, Lancashire, Leicester, and Wensleydale. In centuries past, the variation within products referred to by these names would have been significant, with many other kinds of cheese being produced in addition to these. But the range of British cheeses, and the methods by which they were made, was to be significantly restricted in the middle of the 20th century. And the story of this diminution is entangled with the two World Wars. The founder of Neal's Yard Dairy (the cheesemonger that has perhaps most contributed to the renaissance of farmhouse cheesemaking in the United Kingdom after the Second World War), Randolph Hodgson, told us: "In the UK, in the 1930s, the majority of cheese was still made on farms by hand" (Schneider and Hodgson, 2007). But this was about to change, owing at first to concerns raised by the First World War, and then to preparations for, and the experience of, the Second World War.

In the aftermath of the First World War, cheese was recognized as a high-value foodstuff for both the military and civilians, and the British government looked to rationalize its production and supply, as well as to ensure that it was safe for consumption. According to Val Cheke, who was Lecturer and Instructor in Dairying at Reading University when writing in the late 1950s: "When the adversities of war once again overtook the country, cheese reassumed a forgotten value, for it could nutritionally substitute the proteins of meat" (Cheke, 1959, p. 257). During the Second World War, cheese was identified as a "strategically important food", and its production was restricted to large industrial plants. To this end, the wartime British Ministry of Food

requisitioned milk and used it to mass-produce cheese to ensure a stable food source for soldiers and citizens alike, becoming the arbitrator of demand not only between the military and civilians but also between the markets for different dairy products such as fluid milk and cheese (Schneider and Hodgson, 2007). Consequently, dairy farmers who had been making cheese on their own farms were now required to instead supply their milk to these plants which, it was hoped, would produce a more standardized product and reduce wastage (Blundel and Tregear, 2006, p. 726). Only seven types of cheese were made: Cheddar, Cheshire, Derby, Dunlop, Lancashire, Leicester, and White Wensleydale (Cheke, 1959, p. 258). The Ministry of Food provided a weekly ration of cheese that varied over the course of the war, from 8 ounces per person at the start, to as low as 2 ounces (Fearnley-Whittingstall, 2010, p. 154). A component part of government propaganda was guidance for housewives, who might be unsure how to best use such a limited amount of cheese and, consequently, did not always even take their ration (Baker, n. d.).

Foundations for making the cheese supply chain more efficient were laid by government well before the beginning of the Second World War with the establishment of the Milk Marketing Board in 1933, which purchased milk from dairy farmers across England and Wales and either sold it as fluid milk or transformed it into other dairy products. In broad strokes, these changes brought benefits to many dairy farmers, especially those farming in remote places. According to Hodgson, the Milk Marketing Board served as a sort of national dairy cooperative, albeit with compulsory membership:

> It was a great thing for the dairy farmer. It guaranteed the price [that farmers would get for their milk]. And it guaranteed your milk would be collected. So, if you were right up in the hills of north Yorkshire, the tanker would find its way to your farm, and take your milk away, and send you a cheque. Brilliant! [Schneider and Hodgson, 2007]

In this regard, the government-run Milk Marketing Board achieved what private sector cheese factories had for dairy farmers in the United States almost a century before – it allowed farmers to focus on milk production and other farm activities, and to leave cheesemaking to professionals, working at a larger, more efficient scale.

The effects produced by the Milk Marketing Board were many. Government intervention, including the establishment of separate price points for domestic and imported milk, stabilized milk prices nationally, allowing Britain to avoid tensions such as those that had plagued Camembert producers in France during the First World War, as discussed above (Blundel and Tregear, 2006, pp. 728-729). The Milk Marketing Board also concentrated cheesemaking

in larger-scale units of production, where greater economies of scale could be achieved. In the words of Blundel and Tregear (Professors, respectively, of Enterprise and Organization, and of Marketing):

> The most tangible result of government regulation, under the MMB and in the more extreme conditions of the Second World War, was to preside over a radical shift in domestic production from the farm to the modern industrial scale creamery. In the late 1920s, just 18% of domestic cheese production was factory produced. By the late 1950s, the figure had increased to around 95%. [Blundel and Tregear, 2006, p. 730]

Ultimately, the interventions of the Milk Marketing Board – consolidated by the Ministry of Food during the Second World War – profoundly altered the landscape of cheesemaking in Britain. As those who had made cheese on the farm were instead able to – or compelled to – sell their milk, the number of farmhouse cheesemakers declined steeply. According to Percival and Percival, the foundation of the Milk Marketing Board consolidated dairy farmers' shift, which had begun with the development of the railroads, from making cheese on the farm to selling their milk:

> [W]ith strong demand (average daily liquid milk consumption increased from 0.4 pints per head in 1933 to 0.69 pints per head in 1949) and a secure and profitable price it is no wonder that farmers removed themselves from the risk, toil, and expense of cheese making. Farmhouse cheese production suffered a precipitous fall: by 1956 there remained just 140 farmhouse cheesemakers in all of Great Britain. [Percival and Percival, 2017, p. 207]

In Hodgson's words: "So, 450 farms stopped making cheese. Not so good. Good for the individual. Not so great for our cultural cheese heritage" (Schneider and Hodgson, 2007). While it might be argued that the Milk Marketing Board was the underlying driver of this shift, its establishment came within the context of concerns prompted by the experience of the First World War and, in the context of rising tensions with Germany, anticipation of the Second World War – the outbreak of which reinforced this trend. Hodgson told us: "In the UK, the Second World War was a huge divide, when the farms stopped, and the factories started" (Schneider and Hodgson, 2007). Wartime food controls ended in the early 1950s, but the Milk Marketing Board continued to function until 1994 (Blundel and Smith, 2013, p. 64).[20] In the decades following the war, a small number of farmhouse cheesemakers re-emerged, but they were only

20 The UK milk market was partially deregulated in 1981. While the Milk Marketing Board ceased functioning in 1994, it was only officially dissolved in 2002.

permitted to make one of five recognized cheeses: Cheddar, Cheshire, Derby, Lancashire, or Leicester (Schneider and Hodgson, 2007). And the cheeses they made were still graded by the board, albeit with a separate scheme for farmhouse makers (Blundel and Tregear, 2006, pp. 729-730).

The displacement of farmhouse cheesemaking in Britain in the years around the Second World War was similar in many ways to the disappearance of farmhouse production of cheese in the United States in the years around the American Civil War. In both cases, this entailed a reorganization of labor in the cheesemaking sector, marked not only by fewer cheesemakers making more cheese, but also by the shift toward a professional work force in the cheese sector comprising mostly men. The occurrence of this shift at different times in the two contexts can be attributed not only to the respective wars giving them context, but to the different historical dynamics with which the experiences of these wars were entangled. In the British case, the shift was driven not so much by the absence of men on the farm – indeed, the shift was already in full swing before the Second World War began and, as we shall see, had even earlier origins – but by concerns over productive methods. Following the First World War, the attention of the British government on food security and its attendant propaganda included concerns about the "poor performance of domestic cheese producers" (Blundel and Tregear, 2006, p. 728). These concerns were about productivity, but also about food safety. With the motive of improving both, the Milk Marketing Board connected with every dairy farm in England and Wales and coaxed many out of cheesemaking; those who continued to make cheese were subject to the Milk Marketing Board's quality control (Blundel and Tregear, 2006, p, 129). The Second World War provided justification for the government to reshape cheesemaking even more profoundly, with the Ministry of Food asserting "full control, 'from milk to market'" through far-reaching surveillance and near-total control of the dairy sector (Cheke, 1959, p. 258).[21]

The official story is that state-led industrialization made for a more productive dairy sector and for better cheese at a time when a secure supply of this staple was much needed and when the labor force to produce it by more traditional means was diminished due to war. According to Cheke:

> [T]he standard of the cheese produced throughout the country was remarkably good, especially under the appalling war conditions, involving shortages of transport, raw materials and labour. Cheese-making could never have been done with such efficiency but for the pressure of war, which enabled the Ministry to control all the operations of farm milk

21 See also Blundel and Tregear (2006, p. 728).

> collection, transport, and manufacture, and subsequently to grade, store and distribute the products. [Cheke, 1959, p. 258]

A counter-narrative – challenging government propaganda of the time – suggests that the production of cheese on an increasing scale by *inexperienced* "professional" cheese makers gave rise to considerable quality-control and product-safety issues, many of which were ultimately "resolved" by pasteurization.[22]

In any case, industrialization and professionalization went hand in hand with the transformation of cheese itself. Quite simply, wartime factory cheese was a significantly different kind of cheese. To be sure, wartime industrialization built upon and extended earlier initiatives to modernize cheesemaking in Britain, from the early campaigns of Joseph Harding (discussed above) to spread scientific knowledge of cheesemaking among farmhouse producers, through the attempts of the chemist Dr F. J. Lloyd in the early part of the 20th century to establish quantifiable indices of best practice in Cheddar making, to the research of the National Institute for Research in Dairying (NIRD, established in Reading in 1912) to maximize productivity through the application of precise measures and methods (Percival and Percival, 2017, pp. 192-217). These interventions had already begun to displace women, along with the knowledge communities and institutions that informed their cheesemaking practice, not to mention methods grounded in sensorial engagement with the cheesemaking process such as the "Cannon method" developed by farm woman Edith Cannon and taught in courses organized on a different farm in a different region each year by the Bath and West and Southern Counties Society (Percival and Percival, 2017, p. 197). While previous methods had been less uniform, they often held more variables (some impossible to measure) in the frame, and collectively, they underpinned a cheesemaking landscape of greater variation, not only in terms of quality, but also in terms of desirable characteristics (Percival and Percival, 2017, p. 206). The movement of all cheesemaking into factories during the Second World War consolidated the displacement of such varied practices and products and enshrined NIRD's methods as the industry standard.

Percival and Percival describe Cheddar made by such methods as follows:

> In order to increase the speed of the make, more starter needed to be added, and this was followed by a scramble to stay ahead of the acidity development as the cheese hurtled

22 Similar arguments have been made regarding industrial concentration and the making of pasteurized cheese during the Second World War in the United States (Cheese of Choice Coalition, 1999-2003).

> toward the finish line. Soon, cheesemakers were finding creative ways to move faster: hotter scalds to drive out moisture more efficiently, shorter cheddaring times, and new mills that rapidly sliced the curd rather than slowly grinding it… Over the course of years, mellow bedsheets of curd morphed into springy blocks. [Percival and Percival, 2017, p. 211][23]

As a consequence of such methods, wartime factory cheese was standardized to the point of banality. According to Cheke:

> The exigencies of war demanded a level quality product, which could be justly distributed as units, each containing the maximum nutritional factors, however small the ration. The division of cheese into small portions had its own problems, for it was manually and mechanically impossible if the cheese texture were too loose and friable. Changes were often necessary in the actual manufacture, to produce a cheese which embodied satisfactory distribution factors. [Cheke, 1959, p. 259]

With such measures of "quality", wartime cheese was bland and unappealing. Recipients of the ration challenged the official story, referring to it pejoratively as "mousetrap cheese", even as they mostly accepted these changes with a characteristic "stiff upper lip" (Blundel and Tregear, 2006, p. 731).

The transformation of British cheese in the context of the Second World War is, again, far from unique. Historian Ina Zweiniger-Bargielowska suggests that war depends upon, and induces, technological change in food production and processing, pointing to the example of industry collaboration with the Nazis to develop technologies for freezing and dehydration of foods during the Second World War.[24] Some such transformations are temporary, Zweiniger-Bargielowska observes, while others prove permanent.[25] In the case of cheese in Great Britain, wartime transformations were profound and enduring. It was not until the 1970s that cheesemongers like Randolph Hodgson

23 "Cheddaring" refers to the practice – developed by cheddar makers – of stacking slabs of curd on top of one another, and then restacking them in alternate orders, to ensure that each spends time under the weight of others to facilitate the drainage of whey.

24 Zweiniger-Bargielowska (2011), referring in part to Thoms (2011). See also Weinreb (2017, p. 65), which mentions that the German army were the beneficiaries of Nazi food technologies, including dehydration, freezing and plastic coating. An interesting example of such technological transformation in cheesemaking lies in the story of Parmigiano-Reggiano and Grana Padano producers adding formaldehyde to their cheeses as a preservative as they scaled up production to meet the demands of providing rations to the military during the Second World War – a method employed to this day by Grana Padano (Zannoni, 2008).

25 By contrast with such transformations of foods, war may also give rise to ersatz foods. See, for example, Massey (2021).

began to suggest that something essential was lost with the near-total industrialization of cheesemaking in Britain, and to nurture the revival of a farmstead sector whose cheeses and back stories consumers would embrace for their diversity, complexity of taste and artisan methods of production. Perhaps even this nostalgia can ultimately be seen as an effect of war – a delayed reaction to technological change induced by war; a secondary legacy blurring the boundaries between war and peace in that liminal period referred to as post-war.

CONCLUSION: RECOGNIZING MYRIAD LITTLE STORIES IN THE MIDST OF A WAR

In this article, I have suggested that the predominant narratives of food in wartime tend to simplify accounts by casting food simply as a factor in the prosecution of warfare. I have argued the importance of recognizing a more complex relationship between war and food – one in which war shapes food even as food shapes war – and that this more complex relationship is the product of myriad actors (some operating as individuals, some working through, entangled in, or challenging larger entities) with a wide array of motives that produce manifold effects beyond victory or defeat on the field of battle. This, of course, may be difficult to recognize in the midst of violent conflict. During the writing of this paper, the Russian military invaded Ukraine. The first months of the conflict served as a reminder that food is indeed a crucial factor in war. As the Russian army laid siege to towns and cities such as Mariupol and Sievierodonetsk, combatants and civilians alike faced starvation. When the Russian advance to Kyiv stalled, Russian supplies dwindled and troops reportedly knocked on doors to ask for, or demand, food. For those at the center of this war, access to food was a matter of life and death. But even in the middle of the conflict, a more complex relationship between food and war was discernible. Russia was accused of "seeking to engineer 'famine' in Ukraine" through the destruction of grain stores and food laboratories, and the theft of agricultural supplies and equipment (i, 2012). These actions, however, were reportedly intended not only to starve Ukrainian fighters and civilians, but also to knock out Ukrainian competition with Russia in the global marketplace, raise the price of Russian commodities, and gain leverage in the international arena by inducing inflation and creating the specter of starvation in low-income countries worldwide (i, 2012).[26] Whereas some described Russian

26 The Food and Agriculture Organization (FAO) and the World Food Program (WFP) suggested that, because of Ukraine's position in world food markets (supplying as much as 33% of the wheat and 60% of the sunflower oil traded globally, for example), the conflict placed as →

targeting of Ukrainian food and agriculture as an act of genocide reminiscent of the *Holodomor* (Ukraine's Great Famine of 1932-1933, which was blamed on Soviet leader Joseph Stalin's project of consolidating power over the peasantry), others saw it in more geopolitical terms as an attempt by the Russian state to regain global influence by securing a stronger position in the global food market – equivalent to its place in the global energy market – and to use this position to cultivate greater worldwide influence over client states (i, 2012; Schiffling and Kanellos, 2022).

Even subtler complexities were soon visible upon close examination of particular foodstuffs, and the people making, trading, and consuming them. The stories of cheese echoed those in other wartime contexts recounted above. According to Oksana Chernova (whose Ardis group makes and imports cheese), many producers in the regions of Ukraine coming directly under attack were either forced to flee or to cease production due to supply chain issues. Elsewhere, production continued, but with so many women and children evacuating their homes and so many men being called up to fight, enterprises were scrambling to reconfigure their labor force and find new workers. Dairies were also changing their products in significant ways – freezing aged cheeses to preserve them until markets could be reestablished, and transitioning to the production of fresh cheeses and sour-milk products that could be sold and consumed more immediately. Ardis's own dairy, *Molochna Maysternya*, was making only a fifth of the cheese it had been producing before the war started, but it was donating these cheeses to charities feeding the displaced, as well as supplying the Ukrainian Armed Forces. Where retail chains had collapsed, other producers were seeking new markets for their products – selling from kiosks, out of the back of their vehicles, or in open-air markets. The fall in demand from war-affected regions in the east, south and center of Ukraine was prompting cheesemakers to focus on expanding markets in the western part of the country, or even abroad. While the war forced cancellation of plans to hold the World Cheese Awards in Ukraine in November 2022, efforts were underway to support Ukrainian cheesemakers and cheesemongers through training opportunities and a joint distribution partnership (Chernova, 2022).

The long-term implications of these shifts and changes in labor arrangements, methods of production, product profiles, retail chains, and relationships with consumers were far from clear. What was clear, however, was that in

→ many as 47 million people in a state of "acute food insecurity"; while European Commission chief Ursula von der Leyen declared, "This is a cold, callous and calculated siege by Putin on some of the most vulnerable countries and people in the world […]. Food has become now part of the Kremlin's arsenal of terror" (Kottasová, 2022).

the midst of the conflict, myriad actors were maneuvering not only to serve the cause of war, but also to meet their diverse social needs as they navigated the horrors of war and struggled to survive – in Chernova's words, "living by their daily routine(s), doing chores, working, planning their lives, having children, building, developing businesses, studying and educating others, inventing creative little things to improve not only their lives but the life of Ukraine as a nation" (Chernova, 2022). The story of war and cheese in Ukraine, as elsewhere, in other times, was a drama made of myriad little stories, which were not only shaping the course of war, but simultaneously shaping individual lives and careers, social relationships and processes, and foods and foodways – an ensemble of stories every bit as rich, complex and compelling as those Tolstoy recounted two centuries ago of the Russians facing Napoleon's armies. This irony was clearly lost on the "great man" for whom a decrepit wheel of cheese sat on the shelf in Oleg Sirota's dairy in Dubrovskoye.

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