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Understanding the fragmentation of the memory of the Allied bombings of World War II. The role of the *United States Strategic Bombing Survey*

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Abstract

Between 1941 and 1945, American and British air forces dropped 1.5 million tons of bombs on German and Japanese cities, causing destruction that is difficult to imagine today. The memory of this event differs in the historiography and public debate on the one hand and in the field of "strategic studies" on the other hand. In the former, the gaze has become mainly critical, including in the United States and the United Kingdom, as regards both the morality and the effectiveness of the bombings. In the field of "strategic studies", on the other hand,

an articulated discourse states that these bombings may have constituted a lesser evil and that some of them, including those which targetted civilians, have been militarily effective. This text questions the reasons for the fragmentation of civilian and military memories of the Allied bombings of the Second World War. The argument is that an expertise played a key role in the social construction of the strategic studies' assessment of the allied air war : the *United States Strategic Bombing Survey*.

Introduction

During¹ the last week of July 1943 hundreds of British and American bombers dropped tons of explosive and fire bombs on Hamburg, Germany. According to an investigation conducted by the Amercans in 1945, "about one third of the houses of the city were destroyed and German estimates show 60,000 to 100,000 people killed"². This quantitative depiction of the bombing does not give an accurate picture of how the population of Hamburg experienced the event. The blow caused by the firestorm caused the asphyxiation of thousands of people who had taken refuge in air raid shelter whilst others died in the Elbe river after having thought that it would save them from the fires. The bombing of Hamburg is only one segment of the air war that the allied conducted against Germany and Japan. This air war caused about ten times more civilian deaths than the German and Japanese "strategic"³ bombings. Nowadays, most historians think that it had no significant effect on the course of the war (Kershaw, 2011; Overy, 2013).

This allied air war has been the subject of a multitude of scholarly, artistic, literary and cinematographic representations. These representations have varied in space and time, but generally speaking, the viewpoint of these civilian vectors of memory has become critical. This is evident in Germany (Friedrich, 2003; Sebald, 2004 (2001)) and Japan (Yoneyama, 1999), but

¹ I thank Anne Bazin, Eric Sangar and the anonymous reviewers for their helpful comments on a previous version of this chapter. This research is mainly based on some archival work at the (US) National Archive Research Administration (hereafter NARA) at College Park, nearby Washington DC.

² USSBS. (1945a). *United States Strategic Bombing Survey. Summary Report (European war)*.

³ I use inverted commas when talking about "strategic" bombings in order to denote that the (genuine) strategic dimension of these war actions is disputed.

it is also true for the countries that conducted this policy of massive bombing of civilian targets and people. In the United Kingdom, a moral and strategic critique of these bombings emerged as early as 1941 thanks to the *Committee for the Abolition of Night Bombing*, which became the *Restriction Bombing Committee* a year later. The activities of this organization, as well as the stances taken by pacifist intellectuals such as Vera Brittain, were strengthened after the terrible bombings of Hamburg (July 1943) and Dresden (February 1945) (Overy, 2016). This was obviously a minority voice, but the small controversy over the meaning of this air war, particularly the so-called "area" raids on city centers and civilians - was significant enough to prompt the British authorities not to highlight this aspect of the war during the victory celebrations in July 1945 (Knapp, 2016). In the United Kingdom, the social criticism of strategic bombing only grew in the following decades. This trend is perceivable in the rhetoric of the history of the air war published by the official historians of the Royal Air Force in the early 1960s (Frankland & Webster, 1961). It sharpened following the publication of the first scientific (and critical) book on the issue (Hastings, 1979).

The public debate on the Allied air war followed a different path in the United States. The collusion between the arm industries, the military, the propaganda services and the cinematographic industry generated a "Military-Industrial Media-Entertainment Network" (MIMEN) which spread out the idea that strategic bombings can help to win the war at a lower economic and human cost (for Americans). For instance, "Walt Disney imagined an orgiastic destruction of Japan by the air in his 1943 animated feature *Victory Through Air Power* (based on Alexander p. De Seversky's 1942 book), well before the United States could carry it out" (Sherry, 2008, p. 177/292). The MINEN kept working after World War Two. Besides, the supporters of strategic bombing implemented an article and interview based communication campaign which "persuaded the American public that creating air supremacy would be the least costly and most effective strategy in the face of a Soviet threat that the air itself helped to overstate" (Lazarowitz, 2005, pp. 477-478). However, this view evolved during the mid 1960s. Michael Sherry sees Stanley Kubrick's 1964 film, *Dr. Strangelove, or How I Learned to Stop Worrying and Love the Bomb*, as a turning-point (Sherry, 2008, pp. 181-192). Of course, the critical gaze on strategic bombing only strengthened with the rise of a (sub)culture of anti-militarism after the Vietnam war. The debate on strategic bombings, then, moved from "prophecy to memory" (Sherry, 2008), that is to say from belief in the virtues of the air weapon

to sympathy for the victims. Since then, comments have ranged from characterizing the "strategic" bombings as a crime against humanity or a war crime (Bloxham, 2006) to formulations suggesting, in a more euphemistic way, that this piece of the Allied war effort was not the most glorious. The development of this morale condemnation of the allied air wars has gone along, like in Britain, with a critical assessment of their very military effects.

This set of critical civil views on the Allied air war contrasts with that found in the field of Anglophone "strategic"⁴ expertise, and more precisely in the United States. In this field, dominated by think tanks such as the Rand Corporation, the question of the effects of the Allied air war is approached in a more nuanced manner. A distinction is made between bombings directed against civilians and those targeting factories or transport systems, and questions are asked about their respective effects. While there is no shortage of criticism, particularly among defense intellectuals close to the Navy and the Army (Andrews, 1950; Copeland, 2017 (1er octobre); Gentile, 2001), there is also an articulate discourse validating the thesis of the effectiveness of the Allied air war, including with regard to the most controversial aspect of this war: the "area" bombings directed against civilians. The supporters of these bombings are sometimes called the "Douhettians" in reference to Giulio Douhet, the Italian officer who prophesied during the interwar period that ""By bombing the most vital civilian centers it could spread terror through the nation and quickly break down B's material and moral resistance" (Douhet, 1942 (1932, 1921 pour l'édition italienne), p. 37). It is difficult to measure precisely the weight of Douhetian thought in the American military field after the Second World War. We do know, however, that it was sufficiently important until the 1990s to give meaning, internally, to the carpet-bombing of Korea, Vietnam and Laos (Dafinger, 2020a; Gibson, 1986) and, to a lesser extent, to the bombing of Iraqi cities during the first Gulf War (Gentile, 2001).

A vector of memory (Rouso, 1990) played an important role in the social construction of this spectacular case of horizontal fragmentation of memories: the United States Strategic Bombing Survey (USSBS). The USSBS is an expertise launched at the end of the Second World

⁴ I use inverted commas, again, in order to highlight that I am referring to the social field that his proponent call "strategic studies". The question whether this field does produce genuine strategic thought remains an open question.

War by President Roosevelt to understand the effects of the Allied air war. For several months, some 300 civilians, 350 military officers and 500 soldiers stayed in Germany and Japan in order to gather empirical material concerning the effects of strategic bombings. The USSBS produced about 200 reports on Germany and almost as many on Japan.

Although the USSBS was officially an "independent and scientific" study, it is important to highlight that a particular interest weighed on the decision to launch the study and the production of the reports. At that time, the United States did not have an air force. The majority of U.S. "strategic" bombing had been carried out by Army air forces grouped in what was called the "Air Corps". Senior Air Corps officers were eager to become autonomous from their parent organization, the Army. They hoped for the creation, after the war, of an independent air force similar to the British Royal Air Force. They were supported in this endeavor by the industries who produced the flying fortresses, notably Boeing and the Douglas Aircraft Company. For these companies, the creation of an air force with strategic forces appeared to be the condition for the perpetuation of contracts with the War Ministry after the end of hostilities. These airmen and industrialists formed an alliance in 1944 to convince the War Department and President Roosevelt to launch an evaluation of strategic bombing, the results of which they hoped to control in order to demonstrate the effectiveness of such bombing. Hence, "Senior air officers had spent the preceding seven months establishing the surveys' scope, framing its questions, and building an organizational framework that reflected the AAF's conceptual approach to strategic bombing" (Gentile, 2001, p. 50). These airmen and industrialists formalized their lobbying activities in 1946 in a network hosted by the Douglas Aircraft Company: the "Rand Project", the ancestor of the Rand Corporation created in the wake of the USSBS in 1948 (Dafinger, 2018). As a matter of fact, the USSBS synthesis reports - the only reports which had an impact on the public debate - all concluded that the Allied strategic bombing was "decisive", including those that were intended to "demoralize" the population⁵.

⁵ USSBS. (1945a). *United States Strategic Bombing Survey. Summary Report (European war)*, USSBS. (1946). *United States Strategic Bombing Survey. Summary Report (Pacific War)*. 1 July 1946, USSBS. (1945b). *United States Strategic Bombing Survey. Overall Report (European war)*. September 30, 1945.

This chapter revisits this key moment in the constitution of the belief of a part of the strategic studies field in the effectiveness of strategic bombing: the production of the main USSBS reports. I show that the conclusions of the synthesis reports are indeed very favorable to strategic bombing but that they mask a dissension within the USSBS board. The latter was composed of a military adviser - Air Corps general Orvil Anderson -, and civilians of different background who knew little, if not nothing, about strategic bombing before they were appointed: diplomat George Ball, businessmen Franklin d'Olier and Henry Alexander, Paul Nitze (who hesitated, then, between a carrier in the bank sector, the aircraft industry or in the government), and two academics: the psycho-sociologist Rensis Likert and the economist John K. Galbraith. Most of these men had links to the "airmen" lobby or the Rand Project. There is one major exception though: Galbraith, the head of the *Overall Economic Effects Division*. He came to the conclusion that "strategic" bombing in general had been ineffective and that those directed against civilian morale had even been counterproductive: they had contributed to remobilizing the bombed people against the aggressors⁶. The conclusion of the synthesis reports on the "decisive" character of "strategic" bombing in general and of those directed against the "morale" of civilians in particular is due to the marginalization of Galbraith's minority report.

The argument follows a chronological plan. Most of the discussion focuses on the production of the reports between 1945 and 1947 and the knowledge/power operations that were associated with it. I conclude, however, with a section presenting the legacy of the USSBS in US "strategic" thinking during the Cold War, a legacy that contributed to the fragmentation of memories between the field "strategic" studies and other fields.

The initial debate on "strategic" bombings

Historians have shown that a multitude of motives helped produce the Allied air war against Germany and Japan: the belief in the effectiveness of "strategic" bombing, the bureaucratic interests of the RAF and the USSAF Air Corps (Eden, 2004), a logic of mimetic rivalry leading to blindness about the military meaning of one's actions (Zinn, 2010), the "technological

⁶ USSBS. (1945e). United States Strategic Bombing Survey. The effects of strategic bombing on the German war economy. Overall economic effect division. October 31 1945.

fanatism" of some decision-makers and military commanders (Sherry, 2012), etc. Whatever the practical reasons, two strategic rationales contributed to giving meaning to this public action. The first was that the destruction of civilian infrastructure such as railway stations, ports, airports and factories would lead to a collapse of war production and, in turn, to surrender. The second stated that the disorganization and terror caused by the bombing of residential areas would "demoralize" the population, leading them to revolt against their government or at least to participate less in the war effort. The former was called "precision" bombing and the latter was called "area" bombing.

At the time, the debate on these two types of bombing was posed in different terms. In the case of "precision" bombing, the question initially raised was that of the degree of effectiveness of the bombing and the cost/benefit ratio. Indeed, it is hard to imagine that the destruction of infrastructure useful to the war effort could, in itself, have no positive effect at all. However, there were three hypotheses regarding the possible effects of "area" bombing on civilian "morale": a strategically interesting effect, a weak or null effect, and a counter-productive effect. In 1943, the U.S. Air Force Command had asked historians to produce an expertise on the effects of Allied "strategic" bombing. The group included Carl L. Becker (Cornell University), Henry S. Commager (Columbia University), Edward Mead Earle (Princeton University), Louis Gottschalk and Bernadotte Schmitt (University of Chicago) and Dumas Malone (Harvard University). Their conclusion was intended to be cautious, but it was also relatively critical. In their view, it could happen that a person who saw their child die before their eyes might feel so "demoralized" that they would no longer participate in war effort. However, the opposite effect - that of radicalization against the "air terrorists" - also existed. Therefore, these historians wrote that "there is no evidence that the British and American bombing of German cities actually weakened the hold of the Nazi government on the German population" (Gentile, 2001, p. 30).

In 1945, the general data on the outcome of the war against Germany and Japan made it impossible to determine whether each sort of "strategic" bombing had been effective, ineffective or counterproductive. In the case of Germany, the destruction of numerous civilian infrastructures (factories, train stations and entire cities) suggested that the extraordinary Allied firepower had contributed to the victory. However, Germany's capitulation came after the capture of Berlin by Soviet ground forces. More generally, the German people did not

revolt against the Nazi regime, and the workers seemed to have gone to the factory with the same fervor until the very end. The Japanese case was different in that the war had been fought primarily from the air. However, capitulation did not come after the conventional bombings of Tokyo in February 1945 but on September 2, i.e., after the USSR entered the war against Japan (August 9, 1945) and the two atomic bombings of Hiroshima and Nagasaki (August 6 and 9, 1945).

The discovery of the increase in German war production

Since the U.S. air forces engaged in Europe had mainly carried out "precision" bombing against civilian infrastructure, the "airmen" and the Rand Project had high expectations for the report of *Overall Economic Effects Division* headed by John K. Galbraith. In the absence of convincing documents, the work of Galbraith and his team stalled until May 1945 when Galbraith had the opportunity to interview a key witness: Albert Speer. Speer's testimony is obviously situated, but as Minister of Armaments (February 1942-May 1945), he was able to observe firsthand the effects of the bombings on workers and the economy. Besides, he gave Galbraith a document that summarized the evolution of German war production during the war: the "Wagenführ" report, named after its author, Rolf Wagenführ⁷. This report showed that "in two and a half years, Germany's military production of aircraft, armaments and munitions more than tripled, and even increased six times as far as tanks were concerned", and that it only collapsed in the autumn of 1944, at the time of the conquest of the Reich's vassal territories by Allied ground forces⁸.

Galbraith told the other members of the management team about this "discovery". The latter generated an outcry from the "strategic" bombing clan. In his memoirs, Galbraith mentions the case of Orvil Anderson, the USSBS military advisor: "The night we first discussed the [figures showing the increase of German war production] Orvil Anderson's voice suddenly rose: 'And I would have sent our boys over there to do that? But he soon regained his

⁷ USSBS. (1944-1945). *Rise and fall of German war economy 1939-1945*, by Rolf Wagenfuehr. Box 243-6-890. NARA, College Park.

⁸ USSBS. (1945e). United States Strategic Bombing Survey. The effects of strategic bombing on the German war economy. Overall economic effect division. October 31 1945.

composure and set about first to challenge the German statistics and then, when that proved impossible, to treat them with contempt" (Galbraith, 2006 (1981), p. 208). Charles Cabot and Colonel Perera - two members of the USSBS secretariat who were committed to the air force project - reacted in the same way. In the first draft of the summary report that they wrote, they ignored Galbraith's "discovery" and presented the Allied air war as a success story.

All USSBS directors were expected to sign the summary report on Germany prepared by Cabot and Perera. Galbraith refused to do so, arguing that it is a matter of "intellectual honesty" (Galbraith, 2006 (1981), p. 219). Diplomat George Ball proposed a compromise solution. The USSBS would produce not one but two synthesis reports: a relatively short "summary" report and a longer "overall" report. Both would be signed by all members of the executive team, but Galbraith would have leadership on one and the secretariat on the other. Ball added that both sides could draw on the work of the other group of USSBS scientists: the *Morale Division* headed by psycho-sociologist Rensis Likert.

The *Morale Division* takes position against Galbraith

The USSBS *Morale Division* conducted an exploratory survey in February-March 1945 among the population of the cities of Krefeld and Darmstadt, which had been bombed in June 1943 and September 1944 respectively. The investigators interviewed 200 survivors as well as various local notables. These interviews did not support the thesis of a "demoralizing" effect of the bombings on civilians. For example, a police officer named Puetz explained to investigators that "the people were dazed and depressed for about two weeks following the attack, but soon recovered and were of course very mad at the attackers. Their belief in the ultimate German victory was not affected"⁹.

The *Morale Division* did not communicate the above data to the USSBS Secretariat. In an undated document, probably produced in the spring of 1945, the person in charge of the survey in Krefeld and Darmstadt explained, on the contrary, that the bombings had had an interesting strategic effect: "the desire to stop the war as a result of the bombings was

⁹ USSBS. (1945c). *Interview 3, Oberleutenant der Polizei Puetz, 13 March 1945*. Box 243-6-190. NARA, College Park.

reported by 58% of the inhabitants of Krefeld and 55% of the population of Darmstadt. As Darmstadt was "bombed more heavily than Krefeld, and the damage [...] much greater", it appeared, according to him, that "the most heavily bombed city suffered a greater loss of morale"¹⁰.

Perera and Cabot relied on the pre-reports of *Morale Division* to marginalize Galbraith's critical theses. In practice, they let the economist produce his specialized report¹¹ but they took control of the key sections of both the "summary" and the "overall" report: the abstract, the introduction and the conclusion. These sections contain the idea that has marked the post-war field of "strategic" studies, i.e. that "strategic" bombings played a "decisive" role in defeating Germany. Both synthesis reports are more ambiguous concerning the effects on German war production. However, they validate the douhetian view that the bombing of civilians broke their morale:

The night raids were feared far more than daylight raids. The people lost faith in the prospect of victory, in their leaders and in the promises and propaganda to which they were subjected. Most of all, they wanted the war to end. They resorted increasingly to "black radio" listening, to circulation of rumor and fact in opposition to the Regime; and there was some increase in active political dissidence -- in 1944 one German in every thousand was arrested for a political offense. If they had been at liberty to vote themselves out of the war, they would have done so well before the final surrender¹².

The synthesis reports were presented to the press on September 30, 1945, six weeks after the surrender of Japan. In the euphoria of victory, the mainstream press only retained these passages validating without nuance the thesis of the effectiveness of "strategic" bombing: "air power defeated Reich, d'Olier concludes" (Philadelphia Enquirer); "Civilian study concludes bombers defeated Germany" (Washington Times-Herald); "Strategic bombing of Germany is touted as decisive to victory" (New York Tribune); "they missed the barrel but crushed Hitler" (Philadelphia record editorial) (Maclsaac, 1976, p. 144).

¹⁰ USSBS. (1945d). *Civilian reactions to bombing in Krefeld and Darmstadt. A pilot study based on interviews with representative samples of the population (non daté)*. Box 243-6-192. NARA, College Park.

¹¹ USSBS. (1945e). United States Strategic Bombing Survey. The effects of strategic bombing on the German war economy. Overall economic effect division. October 31 1945.

¹² USSBS. (1945a). *United States Strategic Bombing Survey. Summary Report (European war)*.

The bombed Japanese are unable to continue the war

The American public hardly heard about the disagreements between Galbraith and the other members of the board concerning the effects of "strategic" bombings on Germany. However, the debate concerning Japan turned into an open controversy. The *US Navy* having played a major role in the war in the Pacific, it was given the direction of a new division within the USSBS: the *Naval Analysis Division*. Its head, Vice Admiral Ralph A. Ofstie, requested that the summary report emphasize the contribution of naval forces, but also of the two atomic bombs. While this last request may have reflected his sincere conviction of the decisive role played by these bombs, one cannot exclude that it was underpinned, once again, by a bureaucratic interest. Indeed, the *US Navy* was radically opposed to the project of creating an independent air force, and one does not need such a force - and its thousands of flying fortresses - to wage war with atomic bombs. A few planes launched from an aircraft carrier can suffice. Vice Admiral Ofstie expressed this opinion internally while other sailors spoke publicly to criticize "strategic" bombing (Dickens, 1947).

In this context, the "air force supporters" relied, once again, on the analyses of the *Morale Division*. In his pre-reports of early 1946, Likert hammered home the idea that the bombing of Tokyo in February-March 1945 had had a devastating effect on Japanese morale, rendering them "incapable of continuing the war". Paul Nitze, the main author of the *summary report* on Japan, recycled this idea to establish the central thesis of the report: "Based on a detailed investigation of all the facts, and supported by the testimony of the surviving Japanese leaders involved, it is the Survey's opinion that certainly prior to 31 December 1945, and in all probability prior to 1 November 1945, Japan would have surrendered even if the atomic bombs had not been dropped, even if Russia had not entered the war, and even if no invasion had been planned or contemplated"¹³. Moreover, the *summary report* explicitly called for the creation of an independent air force¹⁴.

This text outraged the senior officers of the *Navy*. During his hearing in the House of Representatives during the debate over the creation of the air force, Vice-Admiral Ofstie used

¹³ USSBS. (1946). *United States Strategic Bombing Survey. Summary Report (Pacific War)*. 1 July 1946.

¹⁴ *Ibid.*

a technique documented by sociologists of controversy (Latour, 2005 (1989) #3738): he opened the "black box" of the study he intended to disqualify. Without mentioning Galbraith by name, he explained that certain "civilian" members of the board did not, at first, consider validating the thesis of the effectiveness of "strategic" bombing or recommending the creation of an air force. These ideas were absent, he added, from the interim reports produced on 5 March 1946, 10 March 1946 and 1 May 1946. According to him, the USSBS secretariat had modified the text under "pressure" from supporters of the creation of an air force¹⁵. According to David MacIsaac, this grand unpacking of a kind of inter-army war surprised some members of Congress who "complained about the damned militarists who seemed unwilling to give up their private armies" (MacIsaac, 1976, p. 123).

At the time, the *Morale Division* had not produced any official and public study of its own (only internal pre-reports), not even on the German case. This came in May 1947 with the publication of the report on "The Effects of Strategic Bombing on German Morale". The timing was particularly opportune. The US Congress was debating the bill that would lead, two months later, to the creation of the Air Force.

The *Morale Division* officially concludes that "strategic" bombings demoralized civilians

The United Kingdom had also undertaken, in 1945, to assess the effects of "strategic" bombing. The summary report of this *British Bombing Survey Unit* (BBSU) that began circulating in military circles in June 1946 stated that the bombing of transportation systems had had an interesting military effect, that the bombing of factories had had no measurable impact on productivity, and that the bombing of civilian morale had been a complete failure: "Insofar as the offensive against German cities was intended to break the morale of the German population, it clearly failed¹⁶. One does not know whether the report was shelved by the British government because of the rise of public opinion critical of the area bombings,

¹⁵ Congress, U. (1947). *National Security Act of 1947. Hearings before the Committee on Expenditures in the Executive Departments House of Representatives, Eightieth congress, first session on H. R. 2319*. US Government Printing Office. Washington DC.

¹⁶ BBSU. (1946 (not published until 1998)). *The strategic air war against Germany*: British Bombing Survey Unit.

particularly the one against the city of Dresden, or because of a specific request from the US air force lobby. Andrew Knapp favors the first thesis without excluding the second (Knapp, 2013, 2016). One thing is sure though: it was not published until... 1998. This left to the USSBS *Morale Division* a sort of monopoly on the assessment of the effect of "strategic" bombing on civilian morale.

At the end of 1945, the *Morale Division* came across some documents that were, at first sight, interesting for the evaluation of the psychological effects of "strategic" bombing: the "Stimmungsberichte" (literally "mood reports") of the German intelligence services. These confidential reports were intended to inform the Nazi authorities about the attitude of the population towards the war and the regime. They thus directly crossed the problematic of the *Morale Division* of the USSBS. These documents also went against the theory of a demoralizing effect of the bombings. In essence, they explained that the population was tired of being bombed, but that allegiance to the regime remained strong and even increased when the regime managed to show that the bombs were not aimed at factories but at women and children.

The USSBS records show that the *Morale Division* did consult these reports but chose to ignore them for two reasons. First, Likert felt that documents of this type produced in a totalitarian context could not be taken at face value. By so doing, he anticipated a debate that took place in academia when historians of the Holocaust and the Second World War discovered these reports in the 2000s (Kulka & Jäckel, 2004). Second, one of his collaborators (or himself) felt that "the reports are limited in that the Germans did not avail themselves of modern scientific techniques for the study of popular thought and feeling. Quantitative controls, sampling methods and research design were completely lacking in the collection and interpretation of the material for those reports"¹⁷.

Rensis Likert became known in the 1930s for having proposed a method of statistical analysis that consists of measuring attitudes on a numbered scale. This method, commonly referred to as the Likert scale (Likert, 1932), is still used today. The questions used as indicators can be

¹⁷ USSBS. (undated). Chapter I. The course of decline in morale. Official intelligence reports, supporting document, non daté. RG 243 box 483. NARA, College Park, p. 83

closed or open-ended. In the first case, the interviewees are asked to specify their degree of agreement with a statement by choosing among the formulas "completely agree", "rather agree", "neither disagree nor agree", "rather disagree" and "completely disagree". In the second case, the interviewee answers as they fit. The analyst then assigns a code to the respondent's answers to classify them on the scale.

Likert convinced the USSBS secretariat to give him the means to carry out a large-scale survey with open-ended questions and coded answers among 3,700 German bombing survivors (and almost as many Japanese). The interviewees were asked about 50 questions on various subjects, including their reactions during and after the air raids. The interviewers were then asked to look for any sequences in the answers where the interviewees mentioned their "morale". These indicators were then subsumed into a "morale index" which was set up as a "dependent" variable, i.e., to be explained. The statistical method was then used to test various explanatory hypotheses, including that of a "strategic" effect of bombings. The production of these data and the time required for their analysis explain why the *Morale Division's* reports were published almost a year and a half after the others: in May and June 1947.

The context of the interviews was not conducive to the expression of free speech. The interviewers were soldiers of an occupying army. They conducted the interviews in uniform, which could give them an air of interrogation. Moreover, the "denazification" process had started and rumors had begun to circulate about the administration of a questionnaire that was supposed to determine the degree of complicity of each individual with the Nazi regime (the future "*Fragebogen zur Entnazifizierung*", questionnaire for denazification). Although the interviewers explained the USSBS did not aim at assessing their proximity to the Nazi regime, this was far from an ideal interview situation as described in social science textbooks. The following excerpt from a "control interview" published as an appendix to the main report of the *Morale Division* gives an idea of the biases induced by this method of investigation:

Q: "In your opinion, what was the Allies' objective through these raids?" (A21)

A: "The Allies wanted to exhaust the population, incite them to rebel, and thus end the war. If they had not bombed the cities, the war would have lasted much longer and more men would have died at the front"

Q: "Did you blame the Allies for the air raids" (A20)

A: "Really not. I was listening to the English radio and I knew that we had bombed cities¹⁸.

These questions and the interview context combined to generate responses in which 68% of those bombed explained that they "did not blame the Allies for the bombing" and 59% had "wished" that their government would surrender after a raid¹⁹. The *Morale Division* concluded, then, that "bombing severely depressed the morale of German civilians. (...) Its main psychological effects were defeatism, fear, hopelessness, fatalism, and apathy. War weariness, willingness to surrender, loss of hope for German victory, distrust of leaders, feelings of disunity and demoralizing fear were all more common among bombed than unbombed people"²⁰.

The report on the Japanese case appeared a month later, in June 1947. It told the same story, using the same procedures. However, it included an original argument: the idea of an indirect demoralizing effect. According to this theory, the drop in morale would not only be observed in the bombed areas. When the chosen targets were symbolic, as in the bombing of the Japanese capital in February-March 1945, the psychological effect was perceptible throughout the country. Paul Nitze took up this idea in his summary report on the war in the Pacific. Major-General Lauris Norstad also stressed this point during his hearing before Congress during the debate over the creation of the *US Air Force*²¹. The latter was officially instituted in July 1947. Some of the flying fortresses that had bombed Germany and Japan were transferred to this new organization. The latter also fashioned some plans for the rapid modernization of this fleet of "strategic bombers"²².

The role of USSBS in horizontal memory fragmentation

¹⁸ USSBS. (1947). *United States Strategic Bombing Survey. The effects of Strategic Bombing on German morale, May 1947, vol 1.*

¹⁹ Ibid.

²⁰ Ibid.

²¹ Congress, U. (1947). *National Security Act of 1947. Hearings before the Committee on Expenditures in the Executive Departments House of Representatives, Eightieth congress, first session on H. R. 2319.* US Government Printing Office. Washington DC.

²² Commission, U. S. P. s. A. P. (1948). *Survival in the air age.* U.S. Government Printing Office.

The conclusions of the USSBS in favor of "strategic" bombing did not only contribute to convince the American congressmen to create the air force. They immediately infused a multitude of key texts in American strategic thinking. The first and most influential is the infamous NSC-68, written by Paul Nitze and submitted to President Truman two months before the outbreak of the Korean War. This document called for a drastic increase in US military capabilities in all areas, starting with strategic air forces. One year later, while U.S. flying fortresses were bombing Korean cities and villages, another report produced by the Air Force used the conclusions of the USSBS summary reports to justify its demands for the consolidation of its strategic forces (Irving, 1951). In 1953, the Stanford Research Institute submitted another voluminous report to the U.S. government on the lessons to be learned from the strategic bombings of World War II for the preparation of the U.S. defense system. The text was mainly based on the "canonical" texts of the USSBS, i.e. the three synthesis reports. The Stanford researchers concluded, on this basis, that both precision and area bombing produced interesting military effects²³.

This tradition seemed to run out of steam in the mid-1950s when the Soviet Union began to produce its arsenal of thermonuclear bombs and proved, particularly following the successful launch of the Sputnik satellite in 1957, that it could strike directly at the territory of the United States. A second tradition then took off. Its leitmotiv was that the entry into the "nuclear age" made conventional strategic bombing partially obsolete. The most illustrious representative of this epistemic community is Bernard Brodie (Brodie, 1946). However, these proponents of a "revolution in strategic thinking" did not totally reject the USSBS's conclusions on the usefulness of conventional "strategic" bombing, especially those directed against the morale of populations. Brodie, for example, relied on USSBS findings to argue that the July 1943 Hamburg bombing had an impact on civilian morale throughout the country and that a repeat of this type of area bombing would have forced the Reich to surrender earlier. This idea did not completely contradict that of revolution in military affairs: for Brodie, the USSBS demonstration of the "demoralizing" effect of area bombing was also an argument in favor of his thesis of a demoralizing effect of thermonuclear bombing (Brodie, 1959, p. 137).

²³ Stanford Research Institute / Institute of Research, L. U. (1953). Impact of Air Attack in World War II: Selected data for civil defense planning.

Another important legacy of the USSBS can be found in the writings of sociologist Hans Speier, the first director of the *Rand Corporation's* social science department. In the 1950s, Speier argued that it was immoral to target German and Japanese civilians without dismissing the idea that it could have some interesting military effects. Speier overcame this potential cognitive dissonance by proposing a new approach to the "demoralization of civilians". According to him, it should be possible to demoralize enemy civilian populations by employing less violent instruments - such as propaganda - or by intensifying bombing over a short period of time (Dafinger, 2018, 2020b). The notion of "psychological warfare" comes directly from this translation work.

The main legacy of the USSBS, however, lies elsewhere: in the thinking (and practice) of warfare against groups or states of the Global South. In 1948, the U.S. Air Force set up a research group on the European (mainly British) expertise on aerial "pacification" of the colonies during the interwar period. For five years, ten officers and six civilians paid by the fledgling air force sought to understand how the Royal Air Force had "pacified" Iraq, the Gulf of Aden, Palestine, Transjordan, East Africa or the Indian subcontinent before World War Two. These men reproduced what others have called the "mythe of air control" (Gray, 2001), i.e. the (disputed (Omissi, 1990)) idea that punitive bombing of rebellious villages and tribes had helped Britain, France, and to a lesser extent Italy to preserve their colonial empires.

This belief met the USSBS-produced belief in the "demoralizing" effects of "strategic" bombing. The synthesis between the USSBS and air control myths contributed to giving meaning, internally, to the bombing of civilians in Vietnam. Thomas Hippler notes in this regard that the war in Vietnam combined "the worst of two traditions: that of the total war between nation-states and that of the 'small war' of the insurrectionary or colonial type" (Hippler, 2014, p. 179). This tradition was also present in the US war in Laos and, to a lesser extent, in the Gulf War in 1991 (Gentile, 2001), in Afghanistan in 2001 and in Iraq in 2003 (Grosscup, 2006).

The publication in 1998 (fifty years after its production) of the critical report of the British Bombing Survey Unit contributed to weakening the Douhetian narrative within the field of "strategic" studies. Moreover, the "counter-insurgency" turn of the "war on terror" in the 2000s mechanically prompted many proponents of air power to cast some doubt on "classical"

"strategic" bombing. Indeed, the precepts of counterinsurgency warfare emphasize the importance of controlling violence against non-rebel populations in order to prevent them from becoming rebellious - an idea that is the exact opposite of "strategic" bombing. However, it would be wrong to think that US "strategic" studies have definitively buried the USSBS. In 2008, a Rand Corporation expert wrote, for example, that some of the USSBS's theses may be debatable, but that no expert questions its major conclusion that "strategic" bombing made a "decisive" contribution to the victory over Germany and Japan. This, she wrote, "has stood the test of time"²⁴. In this sense, the horizontal fragmentation of civilian and "strategic" memories of the Allied air war may not be quite over.

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²⁴ Grant, R. (2008 (1er février)). The Long Arm of the US Strategic Bombing Survey. *Air Force Magazine*.

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