

“Doors into Nowhere”: Dead Cities and the Natural History of Destruction

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Memory is not an instrument for exploring the past but its theater. It is the medium of past experience, as the ground is the medium in which dead cities lie interred.

Walter Benjamin, “Excavation and memory” (1932, p. 611)

The Dark Side of the Moon

When 28-year-old Heinrich Böll saw his “first undestroyed city” (Böll, 1994, p. 25) at the end of World War II, he broke out in a cold sweat. It was Heidelberg. Böll was a native of Cologne, which had been bombed time and time again by the Royal Air Force (RAF) and the US Eighth Air Force of the United States Army Air Force (USAAF),¹ and he was haunted by the suspicion that Heidelberg had been spared the same fate as other major German towns and cities for purely aesthetic reasons. In postwar Germany “dead cities” were normal cities, so much so that W. G. Sebald, who was born just one year before the war ended, did not attribute the ruins to the bombing and shelling at all. Almost every week on newsreels “we saw the mountains of rubble in places like Berlin and Hamburg,” he wrote, yet for the longest time he “did not associate [them] with the destruction wrought in the closing years of the war”—he knew “nothing of it”—but “considered them a natural condition of all larger cities” (Sebald, 1990/2001, p. 187).²

The British and American air war against Nazi Germany from 1940 to 1945 was brutal by any measure: necessarily so according to its protagonists, needlessly so according to its critics. Hitler and his ministers condemned the strategic bombing offensive, now usually described as the *Luftkrieg* (air war) or *Bombenkrieg* (bombing war), as a *Terrorkrieg*: a war of terror.³ Such denunciations must seem hideously ironic, but the descriptions were more than products of the Nazi propaganda machine. The Luftwaffe (German air force) perfected the art of the *Blitzkrieg*, or lightning war, which involved providing tactical air support to the rapid advance of

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armored brigades. In September 1939, as German armies poured into Poland, the Luftwaffe flew 1,150 sorties against Warsaw and dropped 500 tons of high explosive bombs and 72 tons of incendiaries on the Polish capital. By the time the city capitulated, 40,000 civilians had been killed. In May 1940, as the Wehrmacht (the German army) swept west, the Luftwaffe bombed Rotterdam, killing 800–900 people and making 80,000 homeless. From September 1940 to May 1941, the Luftwaffe launched a series of attacks against London and provincial cities—the *Blitz*—that killed 43,000 people; during the war as a whole, German bombing killed a total of 60,595 British civilians. But, as Moeller (2006) emphasizes, these air raids were not in support of any ground offensive: “the *Blitz* was the exception; the *Blitzkrieg* the rule” (p. 107). The Luftwaffe recognized the importance of strategic bombing, but its mainstay was the deployment of dive- and medium-bombers to tactical effect, and it did not develop a heavy, long-range bombing capability. In fact, German air raids on Britain dropped only 3% of the total tonnage of bombs dropped on Germany by Britain and the United States, and the Allied bombing campaign over Germany killed as many as ten times the number of civilians killed in Luftwaffe raids on Britain: 350,000–600,000 (Grayling, 2006, p. 104; Overy, 1978, 1981, pp. 35–36, 103).⁴ The imbalance is startling and leaves no doubt about the exemplary and extraordinary intensity of the Allied bombing campaign. In two recent studies Canadian political scientist Randall Hansen (2008) claims that “no country had been bombed on the scale Germany was being bombed” (p. 151), while German historian Jörg Friedrich (2002/2006) argues that “Germany was the first country in which the fury of war from the sky was comprehensively and consistently taken to the point of devastation” (p. 62).

The offensive had a defined shape in time and space. First, as Table 1 shows, bombing was concentrated in the last stage of the war, when the tide was running against Germany, and reached its peak during the final six months, when most commentators had concluded that victory was assured. This pattern does not mean that the strategic bombing offensive made a decisive contribution to the Allied victory, however, and arguments continue to rage over its role in the defeat of the Reich. It may even have prolonged the war because the end stage was dominated by what Hohn (1994) describes as an “inconceivable escalation” (p. 222) in the area bombing of towns and cities rather than precision raids on strategic targets like ball-bearing factories, oil plants and refineries, and marshaling yards.

Table 1 Tons of bombs dropped on Germany (compiled from monthly tabulations in Webster and Frankland, 1961, Appendix 44)

	RAF bomber command	US eighth air force
1939	31	
1940	13,033	
1941	31,504	
1942	45,561	1,561
1943	157,457	44,165
1944	525,518	389,119
1945	181,540	188,573

The distinction between the two strategies stemmed from both a difference of opinion and a division of labor. First, as Biddle (2002, p. 245) shows, battles over targeting took place at every level of the Allied wartime hierarchy and raged within the British and American commands as well as between them. The result was that the two air forces waged what Hansen (2008) describes as “parallel but separate” (p. 48) air wars. The RAF preferred the area bombing of towns and cities by night, whereas the USAAF preferred the precision bombing of military and industrial targets by day. That said, the differences between the two were clearer in theory than in practice—Davis (1993) claims that Americans “judged themselves by their motives rather than their results” (p. 435)⁵—since precision bombing often turned out to be remarkably *imprecise*. Each American squadron, bomb group, and lead crew was graded for its success in hitting its assigned target, but these priorities were constantly confounded by what Childers (2005) calls “bitter operational realities” (p. 90). From November 1943 on, the USAAF was authorized to attack targets through cloud, but such “blind,” or nonvisual (H2X-guided), bombing met with mixed success. In the last three months of 1943, in even the best conditions, the USAAF estimated that only 27% of its bombs fell within one thousand feet of the aiming point and 48% within 2,000 ft (Childers, 2005, p. 89). But weather conditions were frequently far from ideal, and during the winter of 1944–1945 42% of bombs fell more than 5 miles from the target (Biddle, 2002, pp. 243–244). Over the same period, the USAAF increased the proportion of incendiaries in the bomb mix so as to start fires in densely built-up areas of towns and cities “to serve as beacons for the RAF to exploit at night” and, “when the occasion warrant[ed],” to raze those areas “by day attack alone” (Biddle, 2002, p. 229). Biddle concludes that the practical effects of these tactics were identical to area bombing. Davis (2006) agrees. The USAAF returned to precision bombing whenever weather conditions permitted and in this sense operated with a model of air power different from that of the RAF, but his detailed analysis of its targeting and operations confirms that the USAAF “engaged in the deliberate bombing of German population centers” (p. 549; see also Sherry, 1987). If the contrast between the two air forces has been overdrawn, and both caused what Overy (2005) identifies as “widespread and random urban destruction and loss of civilian life” (pp. 292–293), the RAF was nevertheless clearly responsible for the lion’s share. According to Hansen (2008, p. 273), one study estimated that 75% of German casualties were inflicted by the RAF, 25% by the USAAF, with another estimating that the RAF killed hundreds of thousands, the USAAF tens of thousands.

Second, and following directly from these considerations, the priority of RAF Bomber Command was to attack German towns and cities. The strategy had two main sources. During World War I Germany had carried out air raids by Zeppelins and then by Gotha and Giant bombers over London and the east coast of England, and Britain had responded with the sporadic bombing of cities in the west of Germany. Both sides had been convinced that limited resources and technical limitations would ensure that the “material effect” of bombing would be far outweighed by what was called its “moral [morale] effect”: the intimidation of the civilian population through terror. German air raids over Britain were indeed terrifying and caused

widespread panic and intense anger, but the total of 836 civilians killed was, as Hanson (2008) remarks, “comfortably exceeded by a single day’s losses on the Western Front” (p. 341), and after the war the German high command decided that its strategy had been unsuccessful.⁶ But Britain’s Chief of Air Staff, Hugh Trenchard, drew the opposite conclusion in his final dispatch. He declared that “the moral effect of bombing stands undoubtedly in a proportion of 20 to 1” (Biddle, 2002, p. 48)—a claim that had no basis either in theory or in fact—and insisted that it was imperative “to create the greatest moral effect possible” (pp. 76–81). Unlike Germany, therefore, Britain intensified its commitment to “moral bombing” and, the second source of its subsequent strategy, developed a specifically colonial doctrine of air control in the 1920s and 1930s that entailed bombing tribal peoples in a terrifying demonstration of its unassailable power. The policy was believed to be peculiarly appropriate to the vast spaces of “Arabia”; its main theater was Mesopotamia, which Britain had occupied in the last stages of World War I and which, as Satia (2008) notes, provided “the only significant British experience of bombing before World War Two” (p. 253). Winston Churchill, who was Minister for Air and War at the time, was an ardent supporter of terror through bombing, and although the original policy was racially inflected, it is not altogether surprising that by June 1940 he could be found vowing to “make Germany a desert, yes a desert” (Friedrich, 2002/2006, p. 61). Churchill was not the only architect of the bombing offensive to cut his teeth in Mesopotamia. When the Kurds rebelled against the British occupation, the RAF launched a series of punitive air raids. As one senior officer reported with evident satisfaction, “[T]hey now know what real bombing means, in casualties and damage: they now know that within 45 min a full-sized village can be practically wiped out and a third of its inhabitants killed or injured[.]” That officer was Squadron Leader Arthur Harris, who became Commander-in-Chief of Bomber Command in February 1942.⁷ “In the ruins of this dying village,” Omissi (1990) suggests, “one can dimly perceive the horrific firestorms of Hamburg and Dresden” (p. 154).

On February 14, 1942, in preparation for Harris’s assumption of command, the Air Staff issued a directive authorizing Bomber Command “to employ your effort without restriction” (Webster & Frankland, 1961b) and requiring “the primary object of your operations” to be “focused on the morale of the enemy civil population” (pp. 143–148). An annex was included stipulating four primary targets (Essen, Duisburg, Dusseldorf, and Cologne) and three alternatives (Bremen, Wilhelmshaven, and Emden), all within Gee radio-navigation range, and a series of more distant alternatives to be bombed if conditions were particularly favorable. This information was followed by a list of “precise”—military and industrial—targets, but the next day a memorandum from the Chief of the Air Staff clarified these instructions: “I suppose it is clear that the aiming-points are to be the built-up areas, *not*, for instance, the dockyards or aircraft facilities. . . . This must be made quite clear, if it is not already understood” (Hansen, 2008, p. 31). Part of the reason for preferring area bombing was pragmatic. The capacity for precision bombing was still limited and, as Strachan (2006) tartly observes, the RAF “hit cities because they were big targets” (p. 13), whereas it was much harder to hit factories

distributed around their peripheries. But it was also a matter of conviction, and Strachan emphasizes that the key component of the bomb mix was not high explosives, which precision targeting would have implied, but incendiaries and, hence, fire: “a destructive agent which can feed on itself sucking in oxygen to create firestorms and having effects that are indiscriminate” (p. 13). Harris needed no telling; he pursued the policy with a determination and an enthusiasm that became an obsession. For him, Hansen (2008) writes, “the whole point of bombing was to destroy cities” (p. 273). In a memorandum written two days before Christmas 1943, Harris made it plain that “cities, including everything and everybody in them which is a help to the German war effort, are the objectives which Bomber Command in accordance with its directives is aiming to destroy,” the overall objective, he repeated, being to “wipe out” or “eliminate entire German cities” (Biddle, 2002, pp. 220–221; Hansen, 2008, p. 159).

As Harris pursued his vision of urban cataclysm, a series of memoranda from the Air Ministry sought to establish a more nuanced policy that would accommodate the importance of economic targets. Fortnightly Industrial Target Reports had been issued since 1940, later called Industrial Damage Reports, but by November 1941, with some 2,400 targets listed in the target books at Bomber Command stations, the Air Ministry solicited guidance on “what specific industries were the best targets as well as what towns should be the primary objects of area bombing” (Webster & Frankland, 1961a, p. 460). Targets were assigned a key point rating (a measure of industrial importance) and a key point factor (based on the proportion of the urban population engaged in or dependent on industrial production). These measures were tabulated in a comprehensive survey (“the Bomber’s Baedeker”) that was published in January 1943 and extended in August 1944 (Hohn, 1994). But Harris would not be deflected. He had no time for the Ministry of Economic Warfare and its targeting priorities, which he repeatedly dismissed as a “panacea.” He kept careful score and, by the summer of 1943, “wanted everyone to see for themselves what the bomber offensive was doing to Germany” (Harris, 1947/1990, p. 149). He ordered the preparation of a large book (which eventually extended to several volumes), the so-called Blue Book, which would show the “spectacular” results of the bomber offensive. “After each attack on a German city,” he explained, “the area of devastation was progressively marked with blue paint over a mosaic of air photographs of the city as a whole” (p. 149). Harris was immensely proud of this “inventory of destruction,” as Biddle (2002, p. 218) calls it, and showed it to all his prominent visitors.⁸ But he was even more proud of the destruction itself, and the language used in internal memoranda made no secret of the fact that moral bombing had become “terror bombing.” After the air raids on Dresden and Pforzheim in February 1945, Harris noted that Bomber Command had “now destroyed 63 German towns” in what was “popularly known as a deliberate terror attack” (Hansen, 2008, p. 246).⁹

By the end of the following month, even Churchill had become alarmed and wondered whether “the moment has come when the question of bombing of German cities simply for the sake of increasing the terror, *though under other pretexts*, should be reviewed. Otherwise we shall come into control of an utterly ruined land” (Hansen, 2008, p. 260). He called for “more precise” concentration on

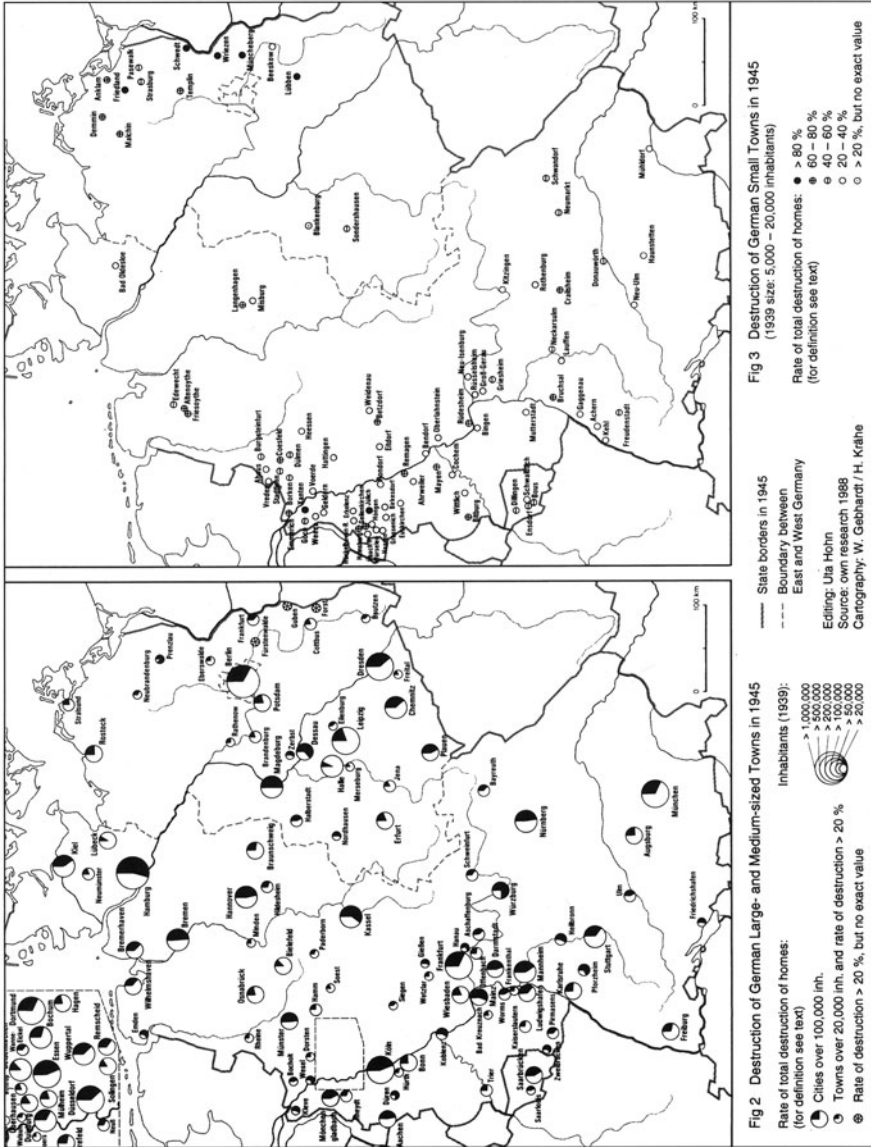


Fig. 1 The Allied bombing of Germany. Source: Hohn 1994

military objectives rather than “mere acts of terror and wanton destruction, however impressive” (p. 260). This was private talk rather than public discussion; there had been condemnation of the bombing offensive by some politicians, commentators, and clerics, but Churchill’s self-serving minute offended many of those involved in the conduct of the campaign. The Chief of Air Staff demanded that the Prime Minister withdraw it, and the revised version noted only that “We must see to it that our attacks do not do more harm to ourselves in the long run than they do to the enemy’s immediate war effort” (Biddle, 2002, p. 260). But changing the words could not alter the consequences. By the end of the war, 131 German towns and cities had been bombed, and 80% of those with populations of more than 100,000 had been seriously damaged or devastated (Fig. 1; for a detailed discussion, see Hohn, 1994).

W. G. Sebald and the Air War

In the late autumn of 1997 W. G. Sebald delivered a short series of lectures in Zurich on the Allied bombing campaign. They were published in the *Neuer Zürcher Zeitung*, revised as *Luftkrieg und Literatur* and published in Germany in 1999, and translated into English in a slightly different form as *On the natural history of destruction* in 2003. Sebald acknowledged that World War II had raised acute questions about German complicity and guilt that had animated scholarly and public debate for decades, yet in his view this interrogation had produced an astonishingly partial process of accounting. “In spite of strenuous efforts to come to terms with the past,” he argued, “it seems to me that we Germans today are a nation strikingly blind to history.” For “when we turn to take a retrospective view, particularly of the years 1930–1950, we are always looking and looking away at the same time” (Sebald, 1999/2003, p. ix). The focus had been on Germans as perpetrators of war crimes and on the profound problems—philosophical, existential, and historiographical—involved in representing and, hence, accounting for the Holocaust. Much of Sebald’s own fictional work had been preoccupied with the same issues. His purpose in Zurich was not to revive the historians’ debate of the 1980s, however, but to explore the sense in which Germans were *also* the victims of an air war whose fury was immensely difficult to recover. And in both cases, it was impossible to find the terms for analysis and atonement—and, crucially, prevention—without representation.

The destruction, on a scale without precedent, entered the annals of the nation as it set about rebuilding itself, only in the form of vague generalizations. It seems to have left scarcely a trace of pain behind in the collective consciousness, it has been largely obliterated from the retrospective understanding of those affected, and it never played any appreciable part in the discussion of the internal constitution of our country. As Alexander Kluge later confirmed, it never became an experience capable of public decipherment. (Sebald, 1999/2003, p. 4)¹⁰

Sebald was not equating the Holocaust with the air war, but even with that allowance several critics were skeptical of his claim. Childers (2005, p. 78), invoking a familiar calculus, insisted that the scale of destruction was nothing compared to the

deaths of Polish or Soviet citizens at the hands of the Nazis. Others doubted that the silence was as total as Sebald imagined. According to Hage (2005, see also 2003, 2006), the issue was less one of production than of reception. “Many novels and stories about the bombing were published,” he argued, but “they were quickly and completely forgotten” (2005, p. 266).¹¹ Yet that collective amnesia was precisely Sebald’s point, which he sharpened through a discussion of memory that spiraled through his exploration of a “natural history of destruction.”

Sebald found the phrase in an essay that had been proposed by British government scientist Solly Zuckerman—but which, significantly, remained unwritten. Trained in zoology and anatomy, Zuckerman joined the Ministry of Home Security’s Research and Experiments Department early in the war to study the effects of blast on the human body. His expertise rapidly widened to include a systematic study of the statistics and logistics of bombing as part of the fledgling science of operations research, and he became Scientific Director of the RAF’s Bombing Analysis Unit. In 1943 he was appointed to Combined Operations Headquarters and in January 1944 joined the Allied Expeditionary Air Force’s planning team for D-Day. He was a fierce opponent of area bombing, and in March 1944 his dogged attempts to persuade military planners to switch to strategic attacks on the rail network in occupied Europe were dismissed by Harris as “a panacea” devised “by a civilian professor whose peacetime forte is the study of the sexual aberrations of the higher apes” (Biddle, 2002, p. 235; Hansen, 2008, pp. 171–173). The jibe combined arrogance and ignorance in equal measure. Zuckerman (1978) described himself as a “professional student of destruction” who had learned “not be over-impressed” (p. 218) by photographs of it. At their very first meeting Harris had invited him “to admire aerial photographs of destroyed German cities” (p. 218) in his Blue Book, but Zuckerman had seen many of them before and remained unconvinced. Later, “once the noise of exploding bombs had died away, and the sense of fear that went with it,” he wrote, “I always wanted to get as quickly as possible to the places that suffered” (p. 324). He was not alone. “Almost everyone who had played any part in the arguments about the air-war,” he said, “wanted to see the rubble of Germany with their own eyes” (p. 324). But none of his calculations and analyses prepared him for what he eventually saw when, in December 1944, he visited Aachen. Close to Germany’s border with Belgium and the Netherlands, the city had been subjected to a devastating air raid in the summer of 1943, and then, on the night of April 11–12, 1944, most of what was left had been destroyed in a raid that Friedrich (2002/2006) reports “churned up the ground in an unparalleled concentration” (p. 246). Over 60% of the remaining buildings were destroyed and more than 1,500 people killed. There were two more raids the following month, and then, just before ground troops occupied the city, artillery flattened what was left. The American officer who directed the barrage described the destruction as “the worst I’ve ever seen. Nobody will ever know what this has been like up here” (p. 119). Zuckerman was no less affected; the devastation was “greater in extent than anything I had ever seen,” he wrote (Zuckerman, 1978, p. 309). Later that month he returned to Britain and dined with Cyril Connolly, editor of the literary periodical *Horizon*. “I had been so moved by the devastation I had seen in Aachen, which I described to him,” he recalled, “that he eagerly agreed

to my suggestion that I should write for him a piece to the title “The Natural History of Destruction”” (p. 322).¹²

Zuckerman returned to Germany the following spring and, following the Allied advance, arrived in Cologne in early April. This city had been the target of the first “Thousand Bomber raid” on the night of May 30–31, 1942, which one pilot compared to “rush-hour in a three-dimensional circus”: 1,455 tons of bombs (high explosive and incendiaries) were dropped on the city in just 90 min, creating raging infernos that devastated 600 acres (E. Taylor, 2004).¹³ It was bombed repeatedly thereafter, including large raids on October 15–16, 1942; February 26–27, 1943; June 16–17, 1943; June 28–29, 1943; July 4–5, 1943; and July 8–9, 1943. Finally, on March 2, 1945, four days before the city fell to ground troops, 858 aircraft sealed “the end of Cologne” (Friedrich, 2002/2006, pp. 222–225; Hansen, 2008, pp. 69, 148).¹⁴ American war correspondents got there before Zuckerman. Sidney Olson cabled *TIME* and *LIFE* magazines:

The first impression was that of silence and emptiness. When we stopped the jeep you heard nothing, you saw no movement down the great deserted avenues lined with empty white boxes. We looked vainly for people. In a city of 700,000 none now seemed alive. But there were people, perhaps some 120,000 of them. They had gone underground. They live and work in a long series of cellars, “mouseholes,” cut from one house to the next. (Olson, 1945, p. 28)

In her “Letter from Cologne,” published in the *New Yorker* on 19 March 1945, Janet Flanner (as cited in Wilms, 2006, p. 189) described the city as “a model of destruction” so comprehensively destroyed that maps were no longer needed because the streets, squares, and parks had ceased to exist. Although these writers found what Wilms calls a “usable language of destruction” (p. 189), Zuckerman simply could not.¹⁵ His first view of the devastated city, and particularly of the area around the cathedral—“to this day I incorrectly visualize that great church standing in some vast square” (Fig. 2)—made it impossible for him to complete his report for Connolly, saying that it cried out for more eloquence than he could muster (Zuckerman, 1978, p. 322).¹⁶ Sebald notes that Zuckerman was so “overwhelmed by what he had seen” that he found it impossible to convey the enormity of the destruction. Years later, when Sebald asked him about it, all Zuckerman could remember was a surreal still life, “the image of the blackened cathedral rising from the stony desert around it, and the memory of a severed finger that he had found on a heap of rubble.” It is immediately after this passage that Sebald asks: “How ought such a natural history of destruction to begin?” (Sebald, 1999/2003, pp. 31–33).¹⁷

Sebald’s recovery of Zuckerman’s “natural history” raises two important questions. The first, naturally enough, is how Zuckerman understood the phrase. Because his report was never written, it is impossible know for sure; but given Zuckerman’s training, it is not surprising that his interventions over the direction of the bombing campaign should have had recourse to biological-physiological metaphors that conjured up a natural history of sorts. Zuckerman intended these metaphors to convey the effects of bombing not on the human body, however, but on the body politic. He made it clear that he was interested in “the functional inferences” that could be drawn “from aerial photographs of devastated towns” (Zuckerman,



Fig. 2 Cologne, 1945 (permission to reprint by abracus GmbH)

1978, p. 218), “translating areas of physical destruction into a functional assessment” (p. 242), and when he attempted to persuade his opponents of the need to target transportation nodes, he said he “constantly resorted to biological analogies” like arteries, circulation, and paralysis to show that the first priority ought to be “to disrupt a system” (p. 240). This usage was not unprecedented. Similar metaphors could be found in the RAF’s *War Manual* in 1935, and Overy (2005) notes that “biological metaphors were commonly used in describing targets” while “paradoxically ignoring the many thousands of real bodies that bombing would destroy” (p. 284).¹⁸ There was nothing paradoxical about it, of course: It was a studied exercise in abstraction. Sebald’s (1999/2003) enumeration of possible prefaces to a “natural history of destruction” identifies other strategies that work to the same end: “a summary of the technical, organizational and political prerequisites for carrying out large-scale air-raids”; “a scientific account of the previously unknown phenomenon of the firestorms”; “a pathographical record of typical modes of death” (p. 33). But in each case, significantly, these possibilities are followed by a question mark.

Sebald’s rhetorical hesitation is significant, I suggest, because what he understood by a “natural history of destruction” was something different. This is the second question, needless to say, and the most common answer to it has attracted the fiercest criticism. Many commentators have focused on a series of images that Sebald deploys in his description of the air raids on Hamburg between July 24 and

August 2, 1943—“Operation Gomorrah”—which killed 45,000 people in a single week. Sebald (1999/2003) writes of “the whole airspace [as] a sea of flames” (p. 26), a firestorm on the ground “of hurricane force” whose flames “rolled like a tidal wave” through the streets, and smoke rising high in the air to form “a vast, anvil-shaped cumulonimbus cloud” (p. 27). He then describes “horribly disfigured corpses,” flames still flickering around them, “doubled up in pools of their own melted fat,” and “clumps of flesh and bone” and bodies reduced so completely to ash so that the remains of whole families “could be carried away in a single laundry basket” (p. 28).

Sebald’s critics object that the opening images reduce the air war to a natural disaster “for which no ordinary person was responsible but from which everyone eventually suffered” (Crew, 2007, p. 132), that a “natural history” of destruction conceived in such terms “assimilates a human-induced and -produced cataclysm into an event of nature” so that it “ontologizes and neutralizes a human product, an historical event” (Mendieta, 2007, note 14). Others conclude that Sebald’s morbid anatomy of grotesquely deformed bodies shows that he has no interest in excavating the cultural landscape of terror, pain, and suffering: that, in effect, he multiplies Zuckerman’s abstracted image of the cathedral and the finger. Thus Barnouw (2005) pointedly subtitles her counternarrative of the air war “a *moral* history of destruction” and objects:

Sebald is not interested in the people who experienced these horrors and have had to live with the trauma they left behind. He is interested in the hyper-physical effects of this kind of destruction: the ruins of the Cathedral and the severed finger, the shrunk purpled corpses, the congealed fat of the bodies cured by fire; the surreally clear, incomprehensible mass transformations. (p. 115)

I think this criticism is unfair, not least (but not only) because it ignores the testimony of those who survived. The extraordinary firestorms produced by the raids *were* acutely physical in their causes and effects, and survivors repeatedly used the same images to describe them: a “sea of flames,” “a hurricane,” and even “a volcanic eruption.” “The word *Flammenmeer*—‘sea of flames’—comes up again and again in accounts of the firestorm,” one historian notes, and is “a literal description of what those people saw: a vast sea of fire in the grip of a hurricane” (Lowe, 2007, p. 213). But I think the characterization is unfair for another reason too. Sebald only raises his question about how a natural history of destruction might begin after describing the raids on Hamburg; whatever one might make of these paragraphs, they surely cannot be read as an answer to a question that had not yet been asked.

On these readings, however, a truly critical and *non*natural history of destruction must necessarily recoil from physical and physiological images to recover the experience of survivors-as-victims. In his own account of the raids on Hamburg, Lowe (2007) endorses Sebald’s claim that “Germans have collectively avoided looking at the ordeal they experienced” (p. xiv). But he adds an arresting coda: the British and Americans have also looked away. “After the bombs have been dropped, and the surviving bombers have returned home,” he continues, “the story tends to end.

What happened on the ground, to the cities full of people beneath the bombs, is rarely talked about" (p. xv).¹⁹

Beneath the Bombs

This silence is the starting point of the most controversial post-Sebald history of the air war, Jörg Friedrich's *Der Brand*, which was first serialized in the tabloid *Bild-Zeitung*, then published as a book in 2002 and translated into English as *The Fire* in 2006.²⁰ Because "the air war didn't happen in the air, as most of the British and American literature has it," Friedrich (2007) explains that he begins his narrative "at the moment the Anglo-American literature stops, when the bomb hits the ground" (p. 12).²¹ Even his opponents concede that his representation of the experience of those crouching beneath the bombs is consummately powerful. For Childers (2005), for example, Friedrich provides "descriptions of the devastation and carnage so vivid, so achingly painful, that they are almost unbearable to read" (p. 77). They deliver "one visceral emotional shock after another" because they are not couched in "antiseptic military language" that would "numb the senses and rob the experience of its barbaric reality" (p. 77). Yet those shocks affronted many of Friedrich's readers, who interpreted his consciously creative, literary prose as symptomatic of a failure of *moral* imagination. Film critic Andreas Kilb dismissed it as "an act of hysterical expressivity" (Friedrich, 2007). Friedrich received an equally cool reception from reviewers in Britain and America who privileged the objectivist language of Science—like the air power theory in which Zuckerman had been immersed and which had left him so bereft in Cologne—and the objectivist canons of a History aimed at a singular Truth. From the US Air War College at Maxwell Air Force Base, Friedrich was accused of writing "in terms of images, experience and emotion" and "providing graphic descriptions of human suffering at the expense of a careful, chronological reconstruction of the air war against Germany" (Peifer, 2004, p. 123).²² The charge was a common one; Childers (2005) was only one of many to object that Friedrich "decouples the air assault on Hitler's Germany from its proper historical framework" (p. 78).²³ Comments like these not only assume that affect has no place in historical inquiry; they also assume that there is a single—"careful," "proper"—historical framework whose propriety is to be measured by its capacity to vindicate those who orchestrated the bombing campaign.

In a parallel indictment, Friedrich is said to describe the bombing war in language that had been reserved for the Holocaust. This claim is more complicated than it appears. Although the English-language edition of Sebald's Zurich lectures has "destruction" in its new title, the word used in the body of the original text is *Vernichtung*, which is usually translated as "annihilation" or "extermination," vocabulary which makes Sebald vulnerable to the same accusation.²⁴ But it is an absolutist one that ignores the fact that this rebarbative language ran like a red thread throughout contemporary British discussions of the bomber offensive. I have already noted Harris's explicit determination to 'eliminate entire

German cities’, and Sebald cities a memorandum written by Churchill in June 1940 to Lord Beaverbrook, Minister for Aircraft Production to the same effect: “There is only one thing that will bring . . . [Hitler] down, and that is an absolutely devastating, exterminating attack by very heavy bombers” (see also Biddle, 2002, p. 188; Overy, 2005, p. 288).²⁵ After the war the American critic Lewis Mumford revised his seminal account of *The Culture of Cities* (1938) under the title *The City in History* and made a direct comparison: “Besides the millions of people—six million Jews alone—killed by Germans in their suburban extermination camps[.]. . . whole cities were turned into extermination camps by the demoralized strategists of democracy” (Mumford, 1961/1987, p. 634). Friedrich’s (2002/2006) use of this language is more elaborate and systematic than any of these writers—air-raid shelters and cellars as ovens and crematoria (pp. 93, 167, 340) and “execution sites” (p. 313); the RAF’s No. 5 Bomber Group as “No. 5 Mass Destruction Group” (p. 306)—but I do not believe that it is intended to assimilate the air war to the Holocaust, still less to affirm some moral calculus in which the deaths of as many as 600,000 German civilians are to be weighed against the murder of six million Jews.²⁶ The two are incommensurable, but it is more than magnitude that holds them apart. For the air war was not conducted in order to bring the Holocaust to an end, and so the enormity of the one cannot eclipse the horror of the other—unless the fury of the bombing campaign is seen as retribution and the postwar silence over its victims as atonement. Friedrich refuses this reading and instead brings the two together in a different, profoundly nonsacralized register. His language is calculated to deliver not only an emotional shock, as Childers (2005) says, but also an ethical one. Friedrich aims to provoke an otherwise mute sensibility into acknowledging that both the Holocaust and the air war were systematic, concerted campaigns of the mass killing of noncombatants that combined a thoroughly modern, scientific-technological apparatus with an atavistic dehumanization and, at the limit, a nullification of the enemy other. There are crucial differences, to be sure, and the realization of the Holocaust relied on the production of a serial spatiality that cannot be assimilated to that of the bombing campaign (Clarke, Doel, & McDonough, 1996; Doel & Clarke, 1998).²⁷ But Friedrich shows the language of the bomber offensive, indeed its very *grammar* (Friedrich, 2002/2006, p. 169), was also articulated through a spatiality that produced its own distinctive necropolitics. After pathfinders and bombers began to divide up the work, the grammar of targeting changed:

The pathfinder no longer indicated a point but outlined an area. It was then not a matter of “hitting” discrete objects within the area—instead, the demarcated area comprised all that was to be removed from the world. Annihilation is the spatial extension of death. The victim does not die his death, because he does not have one. He finds himself in a sphere in which life has ceased. (Friedrich, 2002/2006, p. 69)

From the beginning of 1942, Friedrich continues, “Bomber Command had not only the will but also the basic technology to create an annihilation zone. This zone was the sector of a city. An act of war was the process by which the sector was brought into a state of annihilation” (p. 69).

I attribute the critical force of Friedrich's project to the way in which his rendering of the processes through which these spaces were performed disrupts the objectivist language of Science with the force-field of affect and unbuttons the framework of History through the irruptions of memory. The memoir of an Australian navigator in Bomber Command captures something of what I mean. Returning from a mission over Germany, he recalled that he "would try to tell myself then that this was a city, a place inhabited by beings such as ourselves, a place with the familiar sights of civilization" (Charlwood, 1956/2000, p. 131). But "the thought would carry little conviction":

A German city was always this, this hellish picture of flame, gunfire and searchlights, an unreal picture because we could not hear it or feel its breath. Sometimes when the smoke rolled back and we saw streets and buildings I felt startled. Perhaps if we had seen the white, upturned faces of people, as over England we sometimes did, our hearts would have rebelled. (p. 131)

Friedrich's achievement is to recover those spectral faces in the spaces in which *and through which* they were erased.

The affective force of Friedrich's account and the extraordinary public attention it commanded (including special issues of *Der Spiegel* and *GEO*) help explain why, only months after *Der Brand* was published in the fall of 2002, many Germans invoked the Allied air war in their protests against the impending US-led invasion of Iraq. Those who did so were arguing "less from the moral certainty of having been victims than from the fear of becoming perpetrators again" (Grossman as cited in Nolan, 2005, p. 26). Granted, there was a well-founded conviction that the invasion would violate international law. But Grossman's reading arguably provides a better explanation of German *support* for Luftwaffe participation in the NATO bombing of the former Yugoslavia in 1999—when "the threat of genocide hung in the air" (Huysen, 2003b, p. 165)—than of German *opposition* to the bombing of Iraq four years later.²⁸ As it happens, Friedrich supported the invasion, but he also affirmed that "the stance of the Germans and their spiritual place is since 1945 beneath the bombs and never in the bombers" (Moeller, 2006, p. 113), a claim that implies not a "moral certainty" but certainly a post-*Brand* affinity with the victims of bombing. In that respect the question of memory is crucial. When the US offensive opened in March 2003 with the spectacular bombing of Baghdad, *Der Spiegel* reported that "[m]any observers were reminded of Dresden as the pictures of unbridled explosive power and merciless destruction were broadcast around the world. Just as in 1945, new bombing terror was being unleashed on the banks of the Tigris for freedom" ("Höllengefeuer", 2003, p. 13).

Huysen had no quarrel with a critique of the doctrine of preemptive war, but he wholly rejected these parallels as a "self-serving" invocation of German suffering during the air war. While he accepted that Friedrich was not the Nolte of a second historians' debate—the right-wing historian had insisted that the Holocaust was a defensive reaction to Soviet aggression and claimed a moral equivalence between it and the air war—Huysen (2003b) argued that *Der Brand* had "expanded the present backwards, offering the growing opposition to the Iraq war a decontextualized and experiential take on German history that made Baghdad look like Dresden,

the firestorms of the 1940s like the ‘shock and awe’ campaign of the allies, and the Germans into the arbiters of history” (p. 168). This passage is a theoretically inflected restatement of the previous objections. Huyssen summons the same two bogey words—*Der Brand* as “decontextualized” and “experiential”—to claim that Friedrich’s artful combination of text and photographs traps his readers “in an imaginary in which the firestorms of Hamburg and Dresden are immediately present, ready to be linked to other sets of images soon to explode on television screens once the bombing of Baghdad began” (p. 10).

In this context, too, it seems, memory is to be disciplined by History.²⁹ Indeed, the Bush administration invoked World War II as a memory model for its “liberation” of Iraq (Saddam as Hitler, the delusions of appeasement, the reunion of the Allies). Although it may well be true, as Schama (2004) observed, that “memory craves the reassurance of the Good War in the middle of a bad one” (n.p.), I think Zehfuss (2007) was much closer to the mark when she insisted that the countermemory invoked by those protesting against the invasion of Iraq did not entail conflating the two. It was about empathy, not identity. “*At issue is not an analogy between the bombing of German cities during the Second World War and the Iraq war but the impact which the memories of the former may have on our political imagination in relation to the latter*” (Zehfuss, 2007, pp. 119–120; my emphasis). Through this collective, intrinsically cultural memory, she continued, “the Other may be recognized as Self: we are able to empathise” (p. 120). And our ability to do so is crucially dependent on affect because “memory cannot be grasped within the context of a narrowly conceived rationality; it is in part significant because of the emotions attached and aroused by it” (Zehfuss, 2007, pp. 225–226).

But Zehfuss (2007) added a significant rider. “There is a quality to memory beyond what may be simply described,” she argued, so that “the memory—be it of an unspeakable horror of something else—may never entirely be grasped by language” (p. 226). As I now want to show, this elusiveness returns us to the dilemma posed by a natural history of destruction. I have shown that Sebald was criticized for using a language that supposedly disabled the ascription of responsibility for the air war and was indifferent to the human suffering caused by it, whereas Friedrich, who sought to recover the experience of its victims, was accused of resorting to a language that issued in a naïve emotionalism or, worse, an apologetics. It is high time to see if Sebald’s “natural history of destruction” might mean something different.

The Natural History of Destruction

In my view, most of the critical responses to the idea of a natural history of destruction have failed to take seriously Zuckerman’s inability to convey what he had seen. His attempt to render the devastation of Cologne in “natural” or “physiological” terms (which is what I suggested *his* sense of natural history required) was overwhelmed by an inability to make the ruined landscape meaningful. This failure of ordinary language is central to Sebald’s account. The survivors, even more than Zuckerman, confronted “a world that could no longer be presented

in comprehensible terms,” and like them (though also, of course, unlike them), Sebald (1999/2003) is struck by the incapacity of ordinary language to convey the extraordinary; it was simply inadequate to the task of rendering “the reality of total destruction” (p. 10).³⁰ More than this, there is an intimate connection between the destruction of a city and the ruin of language, which novelist Peter Ho Davies (2007) conveys through an arresting image of bomb-damaged Liverpool:

Esther stares out at the ruins around her. . . A single gutted house still stands at the end of one flattened terrace like an exclamation mark, and she suddenly sees the streets as sentences in a vast book, sentences that have had their nouns and verbs scored through, rubbed out, until they no longer make any sense. (p. 282)³¹

Ward (2006a, 2006b) suggests that “ruin” in Sebald’s oeuvre more generally marks a site of broken narration. These ruins are dispersed, and they mark traumas that rupture language and leave visible, often photographic traces that evade or confound linguistic expression. This is the very ground of a natural history of destruction, which, in turn, implies that most of the critical responses to such a project have also failed to take Sebald seriously. In one of the most overreaching commentaries on Sebald, Mendieta (2007) objects that the reference to a “natural history” in the title of the posthumous English translation of the Zurich lectures is misleading and asserts—on what basis I don’t know—that it is “not one that Sebald would have chosen” (p. 14). Yet, as I have shown, Sebald clearly regarded the possibility of a natural history of destruction as a crucial question. In fact, he had explored the idea in relation to the air war in an earlier essay where he noted Zuckerman’s abandoned project and discussed a radically different concept of natural history to the one vilified by his critics (Sebald, 1982, pp. 365–366).³² For the concept of natural history—and it is a concept, not a wish image—derives from Adorno and Benjamin (it is also found in Arendt), and it marks both the difficulty that Zuckerman faced—the resistance of a ruined, reified world to interpretation—and the ground of Sebald’s own inquiry: the site at which memory falters.

“Natural history” conceived in these terms is located at the dialectical intersection of Nature and History or, as Pensky (2004) has it, of “physical matter and the production of meaning” (p. 233) It brings into view a reified, obdurately physical world—for Adorno and Benjamin, the commodity landscape of capitalist modernity; for Sebald, the moonscape of modern war—that has been hollowed out and emptied of human meaning. These landscapes thus appear to be “artificially natural” (p. 232). Pensky’s is an intricate discussion, and it is impossible to convey its subtleties here. But the crux of the matter is captured in a remarkable image in A. L. Kennedy’s novel *Day* (2007), where Allied aircrew are being flown back to Britain after the liberation of their prisoner of war camps:

[T]hey flew low and level above the bombed thing that was Germany, above their work. As if the cities had been eaten, as if something unnatural had fed on them until they were gashes and shells and staring spaces, as if it was still down there like a plague in the dust. (p. 271)

There is a hideous literalness to this image, and Sebald (1999/2003) describes a “striking change in the natural order of the cities” (p. 34) in the weeks after the air

raids: a “sudden and alarming increase in the parasitical creatures thriving on the unburied bodies” (p. 34); a “multiplication of species that are usually suppressed in every possible way” (p. 35); in short, the burgeoning populations of rats and flies, the “repulsive fauna of the rubble” (p. 35)—as if the cities were being ravaged all over again. These are extraordinary passages, in which Sebald documents sensation without feeling, morphology without meaning, and records life reasserting itself without language (Nossack, 1948/2004, identified rats and flies as “the new lords of the city” [p. 46]). In doing so, his descriptions of a mutely physical geography evoke an altogether different plane that is also conveyed through Kennedy’s image: the existential difficulty of recognizing the ruined landscape as the product of human action. Indeed, to recognize it *as* a human creation would be so unbearably traumatic that language would be replaced by silence. As you approached the center of Cologne, the *New Statesman* reported in July 1945, you saw only “a white sea of rubble, faceless and featureless in the bright sunlight,” like “the sprawling skeleton of a giant animal” (as quoted in Wyman, 1998, p. 16).³³ Such a “charnel house of rotted interiorities,” as Lukàcs described the fetishized landscape of capitalism, cannot be recovered through memory (quoted in Adorno, 1984, p. 118). Pensky (2004) insists that natural history is directed *against* the claim of memory as recuperation or recollection and that it works instead to recover “only concrete, singular and utterly empirical facts and bodies, each ‘transient,’ which is to say incapable of being incorporated into a meaning-giving conception of historical continuity and historical experience” (pp. 233–234). Pensky’s reading also explains Sebald’s (1999/2003) repeated insistence on a “concrete and documentary” approach (p. 58). And against those who propose a counternatural or “moral” history of destruction to Sebald’s, it is necessary to insist that “transience” here *is* a moral term, a mark of what Pensky (2004) calls “the forgetting of the bodily suffering that constitutes the materiality of historical time” (p. 243). In short, there is, in the production of this reified, ruined world, “a functional equivalence between ‘that which suffers’ and ‘that which cannot (must not) be remembered’” (p. 243).

These are significant elaborations, but Pensky (2004, p. 232; see also Buck-Morss, 1989) also shows that natural history operates through a particular “way of seeing” or a scopic regime. This observation speaks directly to Sebald’s project, too: not only to the optical anxiety to which he draws attention—“we are always looking and looking away at the same time (1999/2003, p. ix)” —but also to the visual register that enframes his own account. Sebald’s use of photographs in his work has attracted considerable critical commentary, but Duttlinger (2007) has argued that their incorporation in *Luftkrieg und Literatur* (the same images reappear in the English translation) departs from the photographic strategies that inform his literary texts. She is concerned that the totalizing aerial views of destroyed cities (an unsourced photograph of Frankfurt and a photograph of Halberstadt borrowed from Kluge) are not subjected to interrogation. They invite the viewer “to adopt a detached stance” by staging “an abstract geometrical survey which gives the viewer a sense of mastery in the face of chaos,” she contends (p. 166), and in doing so “starkly parallel the perspective of the Allied planes during the attacks”

Fig. 3 Lancaster bomber over Hamburg. The photograph was taken on the night of January 30–31, 1943, which was the first raid in which H2S was used by Pathfinder aircraft to navigate the bomber stream to the target. This raid was thus *not* the one described by W. G. Sebald



(p. 172) (as shown in the image Sebald reproduces of a bomber over Hamburg; see Fig. 3).³⁴

This optical detachment animates Sebald's narrative of the bombing of Hamburg, which is punctuated by a series of aerial perspectives, opening with what Presner (2004) calls "a high-angle establishing shot" (p. 354) from the viewpoint of the bombers, and then "a kind of cinematic logic" (p. 355) that swoops down to the ground only to return to the air. Duttlinger (2007) glimpses a critical potentiality in this movement, but it is at best a fleeting one: "What starts out as a position of mastery, an ordered overview, can suddenly tip over into a state of vertiginous disorientation at the sight of destruction" (p. 177).

But I think there is another critical potentiality to be seen in Sebald's account. For these shifts between the air and the ground are mirrored in a stream of measurements: 10,000 tons of bombs, a target area of 20 km², flames rising 2,000 m, fire advancing at over 150 km/h, smoke rising to a height of 8,000 m. The result is, as Presner shows, a modernist montage that multiplies different perspectives; it furnishes what Sebald (1999/2003) himself saw as "a synoptic and artificial view" (p. 26), which, so Hell (2004) argues, "positions us between the illusion of immediate visual access and the consciousness that our 'seeing' is highly mediated" (p. 370). That critical awareness of mediation, which is what Duttlinger (2007) believes Sebald to marginalize, depends on the "establishing shot" and the return to the enframing of the city-as-target. As I want to show, however, it also depends on a

matrix of measurements, a lethal calculus that abstracted, ensnared, and transformed living cities into dead ones.

This calculus took the form of a progressively developing chain—described today as the “kill-chain”—that extended from the identification of targets to their destruction. It included the collection and analysis of aerial reconnaissance photographs and the collation of target books and target folders. From January 1943 on, it also encompassed the assignment of numerical and graphical key point ratings and key point factors to establish a hierarchy of targets, as I noted in the first section of this chapter. By the end of that year it also involved the production of zone maps of target cities, based on the work of geographer R. E. Dickinson, showing population and building densities that were essential for calibrating and setting firestorms (Fig. 4) (Hohn, 1994). The chain also included the production of stylized target maps, which were limited to outlined shapes in grey, purple, black, and white—further detail would have been superfluous because the RAF conducted area

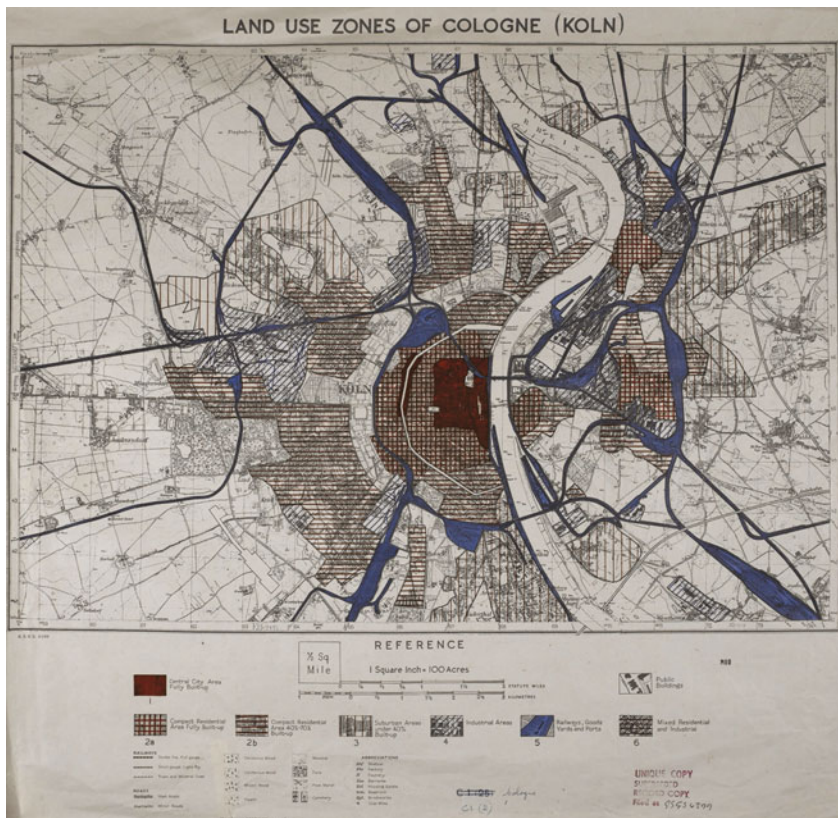


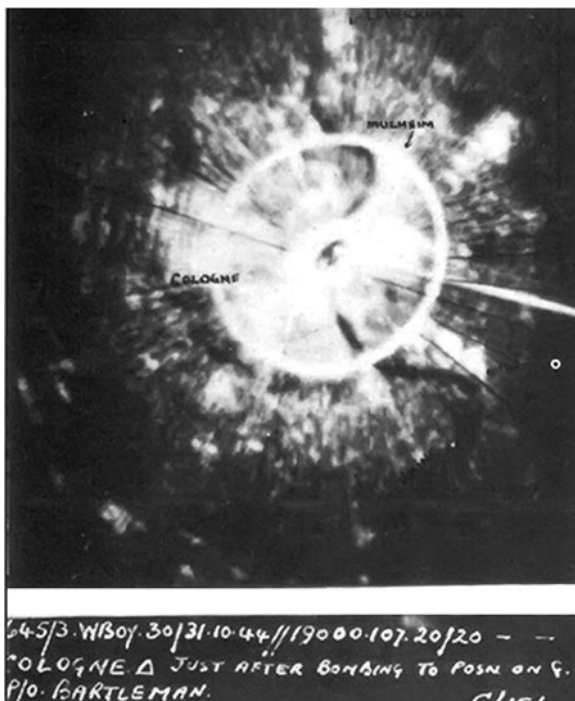
Fig. 4 Royal Air Force zone map of Cologne (permission to reprint, British Library)

bombing at night—together with the position of anti-aircraft batteries, Luftwaffe airfields, and decoy fires. Concentric circles radiated out from the target at 1 mile intervals (Fig. 5).³⁵ From January 1943 ground-scanning H2S radar allowed these maps to be supplemented by crude real-time images of the outline of the target on the aircraft's Plan Position Indicator screen (Fig. 6).³⁶ Finally, there was the intricate choreography of the raid itself, which from December 1942 was orchestrated by a “Master Bomber,” a Pathfinder circling above the target to direct the bombers through a shifting grid of flares and red and green markers dropped to outline the target area and, to correct for creep-back, to recenter the force over the aiming point(s). The aerial photographs taken during each raid fed back to start the next cycle, and



Fig. 5 Royal Air Force target map

Fig. 6 H2S ground-scanning radar image of the type that enabled Royal Air Force bombers to have an outline of their targets (as of 1943)



when on February 28, 1944, LIFE published Bob Landry’s photographs of Harris poring over the views of destruction in his Blue Book, the headline read: “The brain behind the death of Berlin looks at his work from afar” (p. 38). As that caption implied, the kill-chain was thus a concatenation of aerial views produced through a process of calculation that was also a process of abstraction.

Sebald’s stream of measurements mimics this process, although he does not refer to it. But drawing out the chain, even in this incomplete form, makes it clear that the mediations involved in enframing the city as a target were by no means secure. None of the images was stable, including the maps that were nominally fixed. Far from being “immutable mobiles,” as Latour (1987, p. 227) would have it, they were all subject to constant revision, annotation, and interpretation at each of the points through which the chain extended.³⁷ And their tacit promise to produce the effects they named—the reduction of a city to a target and thence to rubble—was always conditional. The bomber did not always get through, as Stanley Baldwin had predicted in 1932, and mortality rates in the air were extremely high because there was an elaborate German counterimaginary, a parallel system that tracked and enframed the bomber as the target. The system was revised after the attacks on Hamburg in 1943. This counterchain extended from ground observers, listening posts, and radar stations, which were grouped into sectors to plot an “air picture” (*Luftlage*) that was transmitted to the Luftwaffe’s divisional fighter command centers or “opera houses,” where a consolidated air picture (*Hauptluftlage*)

was projected onto giant 1:50,000 maps on vertical frosted glass screens using colored beams of light. Intercept information was then transmitted to Luftwaffe Headquarters in Berlin, to other divisional fighter command centers, and out to searchlight batteries, flak batteries, and night-fighter squadrons across occupied Europe.

The two systems moved in counterpoint, and each rationalized its own kill-chain by subdividing its production and regulating its practices through standard operating procedures. This rationalization entailed not only an abstraction of the target *but also an abstraction of the process through which the target was produced*, which was made to appear inevitable—target as telos—and its destruction the terminus of a more or less “natural” history. It is in this sense, I think, that Sebald “regards the events of war precisely as a kind of condition that captures participants in its logic whatever their intentions” (Osborne, 2005, p. 111). In other words, the chain enframes the target *and entrains its operators*. The execution of an air raid was animated by a volatile mix of emotions—anger and fear, rivalry and comradeship, excitement and exultation among them—but they were filtered to leave what Alexander Kluge (1978), in his montage of the Allied bombing of Halberstadt, called the *Angriffsmethode*: the pure method of the strike.

In the flight and the bombing, in the gradual purification from the troublesome ballast of reality, such as personal motivation, moral condemnation of what is to be bombed (moral-bombing), in the calculated know-how, the looking which is replaced by radar control, etc., there is a formalism. It is not aeroplanes. . . that are flying here; instead, a conceptual system is flying, a structure of ideas clad in tin. (pp. 65–66, 76; see also Bowie, 1982)

This effect was produced not only for those in the chain, enveloped in the conceptual system and the practices through which it was performed—the manuals and the maps, the drills and the procedures—but also for a watching public. In July 1941 the Crown Film Unit released Harry Watt’s *Target for Tonight*, a dramatized documentary of the bombing of a military-industrial target in Germany, which had been made with the cooperation of Bomber Command using RAF personnel instead of actors. Early in the film the objective is described as “a peach of a target,” and its plucking, mediated by a series of aerial photographs and maps meticulously followed by the camera, becomes purely axiomatic and perfectly natural. Indeed, this effect was so powerful that Graham Greene, writing in the *Spectator*, praised the film—and by implication the process that it represented—because everyone in the operation had carried out “their difficult and dangerous job in daily routine just like shop or office workers” so that “what we see is no more than a technical exercise” (Short, 1997, p. 195).³⁸

If the visualizations that produced the target had performative force, however, then it is not only the sight of destruction on the ground that has the power to call the aerial mastery of this “technical exercise” into question. That critical response is common and, as Duttlinger (2007) suggests, depends on memory work that deliberately abandons detachment: hence Kluge’s (1978) distinction between “the strategy from above” and “the strategy from below.”³⁹ But in an illuminating discussion of the crisis of representation and modern war, Hüppauf (1993) argues that “an

iconography based on an opposition between the human face and inhuman technology oversimplifies complex structures” (p. 46), and this opposition reappears in the usual separations between above and below, air and ground, bomber and bombed. I understand the gesture of imaginatively crouching beneath the bombs and establishing an affinity with their victims, but I also believe that by the time we do so it is too late. Another critical response is necessary to precede, supplement, and reinforce this act of empathy and its mobilization of memory: one that has the power to reveal and denaturalize the conceptual system through which the world is reduced to a target (Chow, 2006). This parallel response is the task of a truly critical natural history of destruction capable of addressing the present and future as well as the past.

Doors into Nowhere

Such a project can take many forms, but here I continue to focus on the explicitly visual register through a remarkable series of more than 60 images by American artist and scholar elin o’Hara slavick. I only have space for two of them: *Dresden* (Fig. 7) and *Baghdad* (Fig. 8). Although the sources for slavick’s work are the media of modern war—the aerial photographs, surveillance imagery, and maps I have been discussing—and there is a photographic quality to her images, she works by hand rather than, say, video in the hope that her viewers will, like her, “take their time” (2006, p. 249) with them and “work to understand them on a deeper and more



Fig. 7 Dresden. From the series *Protesting cartography: Places the US has bombed* (mixed media on paper) (elin o’Hara slavick)

Fig. 8 Baghdad. From the series *Protesting cartography: Places the US has bombed* (mixed media on paper) (elin o'Hara slavick)



complicated level than they might when seeing a photograph” (2007, p. 98). She begins by dropping ink or watercolor onto wet paper and uses “this common ground of abstract swirling or bleeding” to suggest “the manner in which bombs do not stay within their intended borders” (2006, p. 247). In doing so, she adopts an aerial view—the position of the bombers—in order to stage *and to subvert* the power of aerial mastery. The drawings are made beautiful “to seduce the viewer,” she says (2007, p. 97), to draw them into the deadly embrace of the image only to have their pleasure disrupted when they take a closer look. “Like an Impressionist or Pointillist painting,” slavick explains, “I wish for the viewer to be captured by the colors and lost in the patterns and then to have their optical pleasure interrupted by the very real dots or bombs that make up the painting” (<http://www.unc.edu/~eoslavic/projects/bombsites/index.html>).⁴⁰ Her strategy is thus one of deliberate abstraction, but slavick is uncomfortable at its implications. She confesses that Sebald’s criticism of the production of aesthetic effects from the ruins of an annihilated world “both challenges and paralyzes” her (2007, p. 98):

What then is an artist to do? Should I put these drawings away? Should I display images of shrivelled and burnt corpses, photographs of the guilty military generals, pictures of ruins next to the drawings? I am troubled by these very serious questions, but I think I have

reached many people who may have otherwise walked away from realistic descriptions of war. As Sebald also writes, “The issue, then, is not to resolve, but to reveal the conflict.” (p. 98)

That final remark comes not from Sebald’s discussion of the air war, however, but from an essay on Jean Améry that he added to the English edition of the Zurich lectures. Améry was an Austrian-Jewish victim of the Gestapo and the camps, and he had no truck with either forgetting or forgiving the Holocaust. His watchword was not reconciliation but rather resentment—which he insisted had a moral charge. The “conflict” that haunted his work was thus, as Sebald (1999/2003) puts it, “the conflict between the overpowered and those who overpowered them” (p. 158). This antipathy makes it difficult to invoke Améry’s writings in a discussion of the Allied bombing of Germany, but Améry made two demands that speak directly to Sebald’s critical sense of a natural history of destruction. First, he required a public recognition of the immensity of the injury so that it cannot be denied. It is in this spirit that I hear Sebald echoing Kluge’s puzzlement that the air war “never became an experience capable of public decipherment” (Sebald, 1999/2003, p. 4), but it is in this spirit, too, that “revealing the conflict” (p. 158) making political violence public, must also reveal the complicity of the public in the destruction. Second, Améry set so much store on the moral force of resentment because, as he put it himself, “absurdly, it demands that the irreversible be turned around, that the event be undone” (Sebald, 1999/2003, p. 156). He thus expressed a desire for those responsible “to join the victim in being affected by or bound by the wish to undo what had happened” (Brudholm, 2006, p. 21; see also Vetlesen, 2006).⁴¹

With those twin observations in mind, here is American historian Howard Zinn, who served as a bombardier with the 490th Bomb Group during World War II:

As I look at [slavick’s] drawings, I become painfully aware of how ignorant I was, when I dropped those bombs on France and on cities in Germany, Hungary, Czechoslovakia, of the effects of these bombings on human beings. Not because she shows us bloody corpses. . . She does not do that. But her drawings, in ways that I cannot comprehend, compel me to envision such scenes. (Zinn, 2007, p. 9)

That compulsion arises, I suggest, because slavick makes visible a temporality that is contained within the logic of targeting and even invites its desperate, because agonizingly impossible, reversal. In layering the ghosts of maps and air photographs over the bomb bursts on the ground, and composing beneath and around them a spectral, almost subliminal cellular imagery that, in slavick’s own words (2007, p. 93), “conjures up the buried dead” (“replicated stains in the background, connected tissue in the foreground, concentric targets like microscopic views of damaged cells”), these drawings produce precisely that dizzying, vertiginous glissade that Dutlinger (2007) wants to topple the assumption of aerial mastery: but they do so by setting it in motion *from within the aerial view itself*.⁴² The bombardier asks the pilot to hold the aircraft steady, and as the bomb doors open, the viewer is precipitated into the dying city. Kennedy (2007) achieves a similar effect in reverse:

Walk anywhere and you'll catch yourself calculating out from where the first cookie [block-buster bomb] would fall and blast the buildings open, let the incendiaries in to lodge and play. . . . And so you see targets beside targets: nothing but targets and ghost craters looping up from the earth, shock waves of dust and smoke ringing, crossing. *You feel the aerial photograph staring down at you where you stand, waiting to wipe you away.* (pp. 202–203; my emphasis)

That extraordinary last sentence breaches the separation between above and below and captures the percussive force of targeting that is also shown in slavick's drawings. For these cities had been reduced to rubble—they were already dead cities—*before any bombs were dropped*. This was so not only because the violence of representation (“the target”) is a necessary condition for the violence on the ground, which ought to be obvious, but also because the one *precipitates* the other: as Kluge (1978) puts it in a fictionalized interview with a USAAF brigadier general, “The town was erased *as soon as the plans were made*” (my emphasis) (p. 80).⁴³ Similarly, in commentary on *Target for Tonight*, Stewart (n.d.) explains that “the logic of the film is that, from the moment the intelligence photographs land safely at Bomber Command, the fate of Freihausen is sealed.” The momentum of this logic can be traced back beyond the plans and the photographs, however, into the public sphere itself. Perhaps the most striking example was the “Wings for Victory” campaign of 1943, when newspapers published photographs of school children sticking National Savings stamps onto a thousand-pound bomb in front of a Lancaster in Trafalgar Square: surely the apotheosis of a “natural” history of destruction.⁴⁴

Friedrich (2002/2006) elects to begin his account of the air war on the ground in Germany, but I hope these last pages have shown that it is also necessary to take the measure of the ground in Britain—in its conventional, geographical sense and in the sense of a conceptual order—where German cities were busily being transformed into targets. The bomber stream was the advancing edge of a process of abstraction that reached right back to that exhibition of a Lancaster and its payload in Trafalgar Square, which represented bombing as a domain of pure objects (aircraft and bombs). In some degree, those objects could be personalized, even domesticated—the names and artwork on the bombers, the messages on the bombs—but that humanizing conceit was not extended to the objects of the targeting process. The visualizations within the kill-chain converted cities into numbers, coordinates, shapes, and images, so that eventually the bombers simply “dropped their load into this abstraction” (Friedrich, 2002/2006, p. 25). As a navigator in one bomber crew wrote in a letter to his wife in the summer of 1943: “Were it more personal, I should be more regretting I suppose. But I sit up there with my charts and my pencils and I don't see a thing. I never look out” (quoted in Bishop, 2008, p. 155). A natural history of destruction conceived in the terms I have been describing would force us to look out—to see our “not-seeing”—and to understand how what Zinn (1997) calls “that infinite chain of causes” is so grievously linked to an “infinite dispersion of responsibility” (p. 279). Kennedy (2007) captures all this, and so much else, when Alfred Day, a tail gunner in a Lancaster, looks back at the bombing war:

My, but wasn't it all just a big, free university—the university of war—with H[igh] E[xplosive] and armour piercing and incendiaries, just for a lark. And so much to find out: the far edges of people and the bloody big doors into nowhere that you don't want to know about. (p. 16)

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Notes

1. The USAAF included 16 “air forces” by the end of the war; the Eighth Air Force was formed in January 1942, and its strategic bombing operations in Europe were conducted by its VIII Bomber Command escorted by aircraft from its VIII Fighter Command.
2. I have taken the phrase “dead cities” from the Benjamin epigraph that prefaces this essay, but it is also used by Grayling (2006, p. 12), who derived it from an Allied report on possible sites for the trial of Nazi leaders for war crimes. Nuremberg was chosen not only because it had been the scene of spectacular Nazi rallies but also because its location “among the dead cities of Germany” would provide a vivid illustration of Allied retribution.
3. Luftwaffe air strikes were described as “retaliatory measures” undertaken against a “criminal” enemy (Friedrich, 2002, p. 422).
4. Civilian casualties on both sides included high proportions of women and (despite evacuation) children. Nolan (2005) notes that “total war had feminized German cities” (p. 8) because so many men were involved in military offensives and military occupation elsewhere in Europe.
5. Cf. Crane (1993), who registers “a large difference between the RAF and the [US]AAF both in intent and in effort as to the number of civilians killed” (pp. 75–76). Similarly, Miller (2006) claims that “the Eighth Air Force engaged in terror bombing for 4 weeks. The RAF conducted terror raids for 3 years” (p. 481).
6. Strachan (2006) points out that historians still have “no secure grasp” (p. 5) of the numbers of noncombatants killed during World War I—one estimate suggests six million civilians, compared to ten million combatants—and argues that it was, in part, this “comparative neglect of the civilian casualties of 1914–1918 [that] made more possible the targeting of civilians in 1939–1945” (p. 5).
7. Harris's words appeared in early drafts of an Air Staff report but were excised from the final version.
8. Biddle notes that Harris's Blue Books also included diagrammatic representations of each town's key point rating and key point factor.
9. After the bombing of Dresden, an Associated Press correspondent reported that “Allied air commanders have made the long-awaited decision” to “adopt deliberate terror bombing” of German cities; the phrase was excised by the censor in Britain but blazoned across front pages in the United States (Biddle, 2006, p. 106). In response, the USAAF insisted this was a misrepresentation and that “there has been no change in policy. There has only been a change of emphasis in locale” (Crane, 1987, p. 32).
10. Sebald (1995/1998) had previously advanced the same claim when William Hazel recalls watching bombers taking off from air fields in East Anglia: “I even learnt German, after a fashion, so that I could read what the Germans themselves had said about the bombings and their lives in the ruined cities. To my astonishment, however, I soon found the search for such

- accounts invariably proved fruitless. No one at the time seemed to have written about their experiences or afterwards recorded their memories” (p. 39).
11. Similarly, Huyssen (2003a) insists that although there were few literary renderings, “there was always a lot of *talk*” (p. 147). But he also agrees that the air war was “‘publicly forgotten’ for several decades” (Huyssen, 2003b, p. 166).
 12. *Horizon*’s subtitle read “a periodical of literature and art,” but the content ranged far and wide and included essays on the war and geopolitics as well as contributions from W. H. Auden, John Betjeman, T. S. Eliot, George Orwell, J. B. Priestley, Stephen Spender, Dylan Thomas, and a host of others. It became one of two prominent reviews during the war (the other was *New Writing*), and Connolly regarded it as his “war work”; see (Shelden, 1989).
 13. Hamburg was the original target, but weather conditions forced Bomber Command to switch the attack to Cologne.
 14. Friedrich (2006) calculates that 20,000 people were killed in air raids on Cologne. In total the RAF dropped 23,249 tons of bombs on the city; the US Eighth Air Force, 15,165 tons.
 15. Wilms argues that Flanner effectively implies that “the cities are not in ruins because British air forces had, since 1942, dropped onto them, according to scientific calculations, the perfect combination of incendiary and high explosive bombs” but rather because “Germany is densely populated” (p. 190).
 16. There was in fact a square in front of the cathedral, which was the aiming point for the raid, a decision that ensured that the bomb load, fanning out in a triangle, would fall on the most densely populated area of the city (Bishop, 2008, p. 99). When Zuckerman eventually reached Berlin, he said that the sight of its devastation “made me wish again that I had written that article for Cyril Connolly” (Zuckerman, 1978, p. 328).
 17. Their paths crossed at the University of East Anglia (UEA). When Zuckerman retired from Birmingham University in 1969, he was appointed Professor at Large at UEA, and Sebald taught there after he moved permanently to Britain in 1970.
 18. In his view “the willingness to detach the language of air power theory from the reality of bomb attack by deliberate abstraction, to render it in some sense metaphorically, is one explanation for the almost complete absence of any discussion about civilian casualties in the theoretical writing of the 1930s” (Overy, 2005, p. 284).
 19. The exception, he points out, is always Dresden, but, as he also notes, “this does not excuse our forgetfulness about other cities in Germany” (Lowe, 2007, p. xv; see also F. Taylor, 2004).
 20. The English translation incorporates some of the images that were published in a separate book of photographs (Friedrich, 2003).
 21. In a postscript to his Zurich lectures (Sebald, 1993/2003) praised Friedrich’s earlier (1993) discussion of the air war as the only discussion of “the evolution and consequences of the Allied strategy of destruction” (p. 70) by a German historian to date. He then added: “Characteristically, however, his remarks have not aroused anything like the interest they deserve” (p. 70).
 22. Peifer concluded that, “given these flaws, the prospect of *Der Brand*’s being translated into English appear dim” (p. 124).
 23. This charge prompted Arnold (2003) to redirect the “natural history” critique from Sebald to Friedrich, whom he accused of reproducing a postwar mythology of the “local memory cultures” of the 1950s: “In this discourse the air war is depicted as a natural disaster that suddenly entraps a peaceable and peace-loving local community between the two evils of allied bombing and persecution by the N[ational]-S[ocialist] regime” (n.p.).
 24. See, for example, Annette Seidel Arpac, ‘Lost in translation? The discovery of “German suffering” in W.G. Sebald’s *Luftkrieg und Literatur*’, in Helmut Schmitz, ed., *A nation of victims? Representation of German wartime suffering from 1945 to the present* (Amsterdam and New York: Rodolpi, 2007) pp. 161–180: 164–165.
 25. Sebald, *Natural history*, p. 16; for a fuller discussion, see Overy, ‘Allied bombing’, p. 288; Biddle, *Rhetoric and reality*, p. 188.

26. Cf. Heer (2005), who accuses Friedrich of using such inflammatory language that he becomes an “arsonist” (p. 296) who equates the air war with the Holocaust. To take the most unsettling example (Friedrich, 2002/2006) draws attention to the large numbers of air raid victims who were killed by gas in the cellars—70 to 80% in Hamburg (p. 313). But he is also adamant that “there was no correlation between the annihilation of the Jews and the annihilation by bombs. And no analogy. And death by gas will not create one” (p. 296).
27. Cf. Robbins (2007, p. 147), who follows Lindqvist (2000, p. 97) to emphasize differences in magnitude between the Holocaust and the bombing war but also notes that most German cities defended themselves energetically, whereas the victims of the Holocaust were largely defenseless, and that the bombing offensive was not about killing in order to secure *Lebensraum*. These qualifications are important, but they do not erase the parallels (on which see also Markusen & Kopf, 1995).
28. It was during that crisis that Balkan scholars spoke of “urbicide” (see Coward, 2009, pp. 35–38): the deliberate and systematic destruction by Serbian forces of those towns and cities that were most visibly identified with a history of religious, ethnic, and national pluralism. The literal meaning of the term—“killing of cities”—was applied to the Allied bombing of Germany by Mendieta (2007).
29. “There can be no history perhaps without memory, but neither can there be a history that does not discipline memory” (Maier, 2005, p. 439, note 13).
30. The rupture of ordinary language explains his skepticism about eye-witness reports. “The apparently unimpaired ability—shown in most of the eyewitness reports—of everyday language to go on functioning as usual raises doubts of the authenticity of the experiences they record” (Sebald, 1999/2003, p. 25).
31. It is precisely this ruin of language that another novelist, Helen Humphreys (2008), ignores in a passage that I assume was influenced by a different reading of Sebald: “The bombs falling on the city are an unnatural phenomenon, and yet they have to be thought through past experience. . . . When something is unnatural, there is no new language for it. The words to describe it must be borrowed words, from the old language of natural things.” (Humphreys, 2008, p. 112)
32. Sebald’s translator, Anthea Bell, confirms that the English-language title was his own:

The title was Max’s idea [Sebald was known to his friends and colleagues as Max]. I would never have made such a sweeping change of title on my own initiative. In the early stages of the translation project, Max was still referring to it as “Air War and Literature,” but he soon decided that it would not cover all the material in the book, which in the English-language version includes not just his essay on Alfred Andersch but the essays on Peter Weiss and Jean Améry as well. His rationale for the wording is in fact present in his reference to the account of bombed-out [Cologne] that Solly Zuckerman planned to write, but never did, for *Horizon*. (A. Bell, personal communication, March 27, 2009)

- She also suggests that, when he gave “Zwischen Geschichte und Naturgeschichte” its title, “Max would recently have spoken to Solly Zuckerman, see the end of the first Zurich lecture. So the wording of the never-written *Horizon* title will have been in his mind in the early eighties.”
33. These images mirror a persistent feature of the postwar *Trümmerfilm* (rubble film). In an important qualification to Sebald’s original thesis, Fisher (2005, p. 474) argues that they “are not silent, but rather *depict* silence: they represent the very process of silently staring at the widespread destruction” (my emphasis).
 34. The same rotated and cropped image is used as a cover illustration for some English-language editions of *Natural History*.
 35. The daylight “precision” raids conducted by the USAAF required more detail than RAF nighttime attacks did, so a series of perspective target maps (“Geerlings maps”) were

- produced and eventually distributed to all stations in Bomber Command, too. They included drawings of the target from six different approaches at a height of 26,000 ft. For each approach the target was shown in an outer drawing from 15 miles out (for the navigator) and an inner drawing from 7 miles out (for the bombardier).
36. H2S had influential critics within the RAF. For 3 months before Operation Gomorrah, Bomber Command had concentrated its attacks on the Ruhr, where the targets were within the range of Oboe (a radio-ranging system) and had been marked with “high accuracy.” But Hamburg was out of signal range, and by July 1943 the Pathfinders and a large number of bombers had been equipped with H2S. The system was used “to identify the coast. . . as it unfolded itself on the screen as far as Hamburg and finally as it revealed the bright fingers of light of the dock area” (Lovell, 1991, pp. 175–176). But Hamburg was a relatively easy “read” compared to most inland targets, and the USAAF developed the shorter band H2X system, which provided a sharper image. It was first used in November 1943 and came into widespread use in mid-1944, but the interpretation of its images was still extremely difficult and often intuitive, and accuracy continued to be measured in miles (Brown, 1999).
 37. In the British case a minimum mapping would include the (Allied) Central Interpretation Unit at Medmenham, near Marlow (responsible for the analysis of aerial photographs); the Ministry of Economic Warfare and the Air Ministry in London (which identified potential targets); the Air Ministry’s Air Intelligence section AI 3 (c) at Hughenden Manor (“Hillside”), near High Wycombe (responsible for producing descriptions of targets for operational planners, and target maps, illustrations, and files for briefing officers and aircrew); Bomber Command Headquarters at High Wycombe: six to eight Bomber Command Groups and their bases; and individual flight crews. The chain is a different version of the registers through which Latour (1995) tracks the appearance of the Amazon rainforest on the pages of a scientific journal in Paris, and in this sense it, too, marks the passage of a parallel “natural history.”
 38. The effect of a “technical exercise” was compounded because the target was a military-industrial one. Although the film begins with plans for a raid on “Town 434,” subsequently identified as Kiel, the assigned targets there were naval docks and barracks, and the film then follows the fortunes of a squadron diverted from the main force to attack oil storage and tankers at “Freihausen.” The film was a considerable success in the UK, the United States, and the Commonwealth, but it had no sequel: As Mackenzie (2001) remarks, “a feature film in which area bombing was featured was a nonstarter” (p. 549).
 39. This distinction takes other forms, too, like Hewitt’s (1994) view from the war room as counterposed to the “civilian view” from underneath the bombs, or Ó Tuathail’s (1996) distinction between a high-level, distanced, and dispassionate geopolitical eye and a grounded, embodied, antigeopolitical eye.
 40. I suspect that at least for some of those involved in producing the kill-chain, “optical pleasure” is one of the emotions embedded in the targeting process, too.
 41. I am reminded of the scene in *Slaughterhouse Five*, Kurt Vonnegut’s 1969 novel of the fire-bombing of Dresden, where Billy becomes “unstuck in time” (p. 93) and watches the late movie backwards: “The formation flew backwards over a German city that was in flames. The bombers opened their doors, exerted a miraculous magnetism which shrunk the fires, gathered them into cylindrical steel containers, and lifted the containers into the bellies of the planes. . . . When the bombers got back to their base, the steel cylinders were taken from the racks and shipped back to the United States of America, where factories were operating night and day, dismantling the cylinders.” (Vonnegut, 1969/2005, p. 94).
 42. See also Mavor (2007), who describes slavick’s drawings as “scratched, smudged, layered like the residue of toppled buildings after an airstrike” (p. 15).
 43. Sebald (1999/2003) mistakes this interview for fact, but draws a similar conclusion from Kluge’s montage. “So much intelligence, capital and labour went into the planning of destruction that, under the pressure of all the accumulated potential, it had to happen in the end” (p. 65).

44. More generally, see Connelly (2002). One of the bombs was delivered to 15 Squadron. “A Wings for Victory week had been held in London’s Trafalgar Square,” wrote Pilot Officer I. W. Renner, “during which three large bombs had been plastered inches thick with Savings Stamps by the British public on the promise that they would be duly delivered with the bomb. At the end of the week two of the bombs were hurried to our Station and one found its way into our aircraft which we had named Te Kooti, after the famous Maori chief. Three times the raid was postponed. We became quite attached to our bomb and each day the bomb-aimer would go round to make sure it was still loaded on Te Kooti. . . . The next night, amid rain and sleet, we got off. . . and we were able to reach Berlin at a reasonable height to deliver our bomb” (Thompson, 1956, p. 58).

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