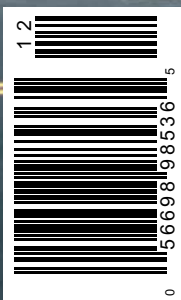


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Interior of a shredding truck.

THE MEMORY HOLE HAS TEETH

D. GRAHAM BURNETT & SAL RANDOLPH

ABSTRACT

The authors outline the prospectus for a global, collaborative, participatory program of collection and collation of information on *document destruction*—its tools and products. The aim: to create an encyclopedic guide to a significant form of information-age detritus—“shred,” what is left after the hard work of un-archiving has been achieved.

The authors propose that the changing data ecology of our moment, coupled with unsubiding anxieties about privacy and security, identity and multiplicity, individual freedom and the zombie trap of our digitized superorganismal collective, will make shredding—and its tangible output, those fluffy snowdrifts of everything we have set out to forget—an increasingly significant aspect of the cultural landscape of the twenty-first century. This has, as we attempt to show below, already in some measure begun.

The juxtaposition of paper shredding and our (ever more) electronic media environment demands critical reflection. The authors suggest that the magnetic erasure of magnetic information can only ever be a frictionless forgetting of an etherialized memory—in the “cloud,” as in the mind of God, to “forget” amounts to a figure of speech, a necessary fiction, a conceit at best. By contrast, where paper is concerned, forgetting retains a relentless physicality (a set of practices, devices, industries, connoisseurs, experts) of profound importance in a world wholly renegotiating its relationship to memory, history, materiality, time, and text. Shred is the versicolor confetti saluting the end of the age of the book—and the party is just getting started.

The authors therefore call for attention to this material, which in our watershed condition takes on new aesthetic, forensic, and politico-philosophical significance. At stake in all this? Strategies for living with the proliferating residue of our accelerating efforts to forget our accelerating efforts to remember.

CONSIDERATIONS AND BACKGROUND

The paradoxes of “information” have been the subject of numerous specialized studies. Information wants to be free. And yet, as has been noted, it would also appear to have an unseemly desire to make itself expensive. Information is, within certain interesting constraints, medium independent. And yet it is definitely not “immaterial.” Rather it seems to take some perverse delight in playing hide-and-seek at the limits of the physical world (and our access thereto). Interestingly, information would seem to possess a number of characteristics generally associated with biological processes (under certain circumstances it reproduces itself, both clonally and “sexually”; it displays statistically robust patterns of senescence not unlike the mortality tables that can be derived from natural populations, etc.). Analogies, in some cases quite impressive, have played out the structure and function of information through juxtapositions with everything from Marxist commodity fetishism to Patristic theories of the Paraclete; from classical thermodynamics to quantum mechanics; from parasitology to hydrology (via Freudian ideas about the unconscious).

In sum, theoretical consensus on these matters has proven fugitive.

However, it is fair to say that dialectics of preservation and destruction (presence and absence? reproduction and extinction? survival and death?) are universally understood to be ubiquitous in the history of information—in the history of its production, inscription, storage, management, and use. A full review of this story—sand-scratches washed away by the rising tide, the building and burning of libraries, bureaucratic archives and their professional redactors, those trunks of longhand letters fed into the coal-grates of *maisons particulières* through teary eyes—all this would take us well beyond our purpose here.

What is, in our view, immediately relevant, indeed what cannot be denied, is that in the second half of the twentieth century this eternal Uroboros of information proliferation and information obliteration has taken on a wholly new and extravagantly conundrinal form, to wit: what would appear to be the rapidly accelerating *dematerialization* of information in the era of electronic computing has brought with it the simultaneous and meteoric ascendancy of a vast new industry dedicated to the material destruction of information in its most tangible forms. Which is to say, the digital age has brought us the age of the paper shredder. Is this an irony? A coincidence? A symptom? A plot?

More work is needed.

THE SHREDDER: ORIGINS

The early history of the device is contested. The standard account gives priority to a German inventor named Adolf Ehinger, who, it is said, derived his inspiration from a hand-cranked pasta machine (and his sense of urgency from unhappy entanglements with the Nazis). This cloak-and-dagger version of the story must be tempered, however, by the existence of a perfectly unromantic US patent filing of 3 August 1909 (no. 929,960) by one Abbot Augustus Low, a timber baron of Horseshoe, New York, and brother to the one-time president of Columbia University, Seth Low. Abbot was a tinkerer, if not wholly a realizer of his many schemes, and while it would appear that his nifty maple syrup bottler proved a very practical device, his patent 929,960 for “new and useful Improvements in Wastepaper Receptacles” never achieved marketable form. What it offered in précis, however, was “a device especially advantageous for use in offices, banks, counting houses &c., where the practical destruction of correspondence, memoranda, liquidated bonds, accounts, books, &c. and the like is a desideratum.” In Low’s mechanical waste-paper basket, a whirring motor (or, if need be, a hand crank), was attached to devices for the “cutting” and “mutilating” and “disintegrating” and finally “compressing” of any maw-fed correspondence or documentation—“in such a manner as to render it unavailable or unintelligible for re-use or for information.”

There is in all this something of the feel of a medieval torture chamber for paper. One might hazard that an industrial age with one foot still out in the Adirondacks, seeing itself increasingly shackled to the metropolitan counting house of its own construction, was looking for a scapegoat—and a very plausible candidate presented itself, ream upon ream, stacked on the desk. A young Charles Darwin (scion of a patrician family), puttering bucolically in his childhood laboratory, famously enjoyed dissolving gold coins in hydrochloric acid. Roughly a century later, Abbot Low, gentleman virtuoso of the Wall Street era, put stocks and bonds through a thresher of his own devising. It is possible that capital has a guilty conscience; that it must cultivate concrete practices of what Freud would call “active forgetting.”

Put origin stories aside. Other tinkerers tinkered, and further patent applications along Low’s lines would follow across the war years—modifications leading to increased mechanical sophistication (cross cuts; anti-jamming features; higher capacities) and diversification of technique. And yet it is fair to say that the basic structure of the shredder as a device, and indeed its social function in an emerging information

economy, were all spelled out perfectly clearly back in 1909. The rise of state secret doctrines after World War II, coupled with a Cold War culture of military-industrial hush-hush, certainly contributed to concerns about access to documents, protection from spies, provisions for adequate clearance, and so forth. But it is interesting to note that a pervasively archival sensibility—an irrepressible and proleptic sense of the historicity of government action, a sense cultivated religiously by government actors themselves—militated against widespread use of shredding and/or burning of documents by US government agencies across these decades. Historians are continuously befuddled by how little such material appears to have been destroyed—even when it might have been a good idea.

The real explosion of shredding as the ubiquitous technology of late-capitalist forgetting did not come until the 1970s.

THE RISE OF MOBILE SHREDDING

By the late 1960s, there could hardly be said to be an “industry” of document destroyers. There were, to be sure, various devices available for offices (private, government) that needed to degrade the information content of their paper refuse. These amounted to fancy waste-paper baskets *à la* Abbot Low—spaghetti-strip cutters, mostly; more or less the same sort of doodad you can go and buy at Staples tomorrow. There were also a few companies that built large hammermill devices that could be used to destroy just about anything—including, for those so inclined, paper. And indeed, a small number of outfits actually specialized in shredding office paper in such machines. But their basic business model—have large hammermill shredder (a device often modified from the agricultural mills used to pound corn and thresh wheat) in a shed somewhere; send truck to pick up bags of paper from various clients; shred paper back at the plant; try to sell shred to makers of low-grade cardboard, etc.—was seriously flawed. No one who was *really* concerned about document security wanted to leave a bunch of bags out back for the pick-up guy, who then drove off with it to who knew where. And anyone who was only *moderately* concerned about the issue could just contact a garden-variety waste management company that would take their scrap paper off to various pulper-recycler-paper-makers. Hard to argue with that. Meanwhile, serious government stuff—again, probably less than you would guess in the era before Watergate—was done in-house (this was not yet the age of rampant federal subcontracting).

What changed? The story is murky. It would appear that sometime in the 1970s, an American inventor named Max Rajewski (one of three Rajewski brothers, all of whom were involved in the shredding business) moved from Spokane, Washington, to Australia. According to sources at the National Association of Information Destruction (NAID, the industry trade organization), Rajewski went to work for the slightly unnerving Australian billionaire media tycoon Kerry Packer, whose complex business dealings and tax practices led him, over the years, into a number of high-profile controversies. Industry lore has it that while working for a Packer-owned information destruction company called Intershred, Rajewski developed the modern mobile platform document shredder. This was a truck-mounted hammermill shredder that could go anywhere, shred on the spot, and cruise off into the Aussie sunset.

Others, it should be said, were experimenting with mobile shredding systems at the same time. The Massachusetts-based outfit known as Data-Grater, run by one Ron Hannon, was, by 1977, offering clients on-site shredding. But Hannon’s mom-and-pop operation was really little more than an electric office shredder mounted in the back of a milk-truck. It ran off a generator. A low-volume contraption. The market was nearly nonexistent.

What Rajewski developed and refined over the years that followed was a very different beast. His shredder system was driven directly from the drive train of his trucks: in other words, you put the transmission in neutral, and a lever allowed you to engage the gearbox of the hammermill shredder, which crunched away (loud! dusty! mashing!) with the full horsepower of your big rig. Imagine something like 1,500 rpm—the hammers whirring through the leaves, mulching them, driving the torn and pulverized bits through a heavy metal screen that determined the particle size. Those early models were balky and had only moderate throughput. But the basic outline for the future of shred had been sketched: trucks; mobile mills for turning information into chaff. Destruction where you wanted it, when you wanted it, while you watched.

What followed? Patent disputes, commercial rivalries, fraternal fallings-out—the standard stuff. And all this in the context, of course, of a business that prides itself on its secrecy, its *illegibility* (this is what it *produces*, illegibility). It is therefore safe to say that reconstructing the proper history of the spread of mobile shredding systems—back to Washington state (Shredfast, UltraShred), to Canada (Shred-It, ShredTech, and later Alpine), to Germany (Vecoplan), and points



Exterior of a shredding truck!

elsewhere (Latin America, Russia, etc.)—would be an extremely difficult, and, probably, in the end, an unpleasantly litigious undertaking.

What can be said, however, is that mobile shredding transformed the universe of document destruction. It turns out that among the paradoxes of information we discover the following: information wishes to be destroyed *everywhere*, but only *locally*. Mobile shredding made this a possibility. It also made the whole industry into a largely independent contractor-franchise business. You bought a truck or two, and you built a clientele. And you could be a “light” organization: additional technical innovations (the move to “pierce and tear” technology, which is low-speed and low-torque—ininitely less dusty, violent, and noisy than hammermills) reduced the weight and complexity of mobile shredding systems. Increasingly automated feedback controls minimized the need for manpower and skilled mechanics. Speeds and volumes went through the roof: one truck with one operator (“my grandma,” explains one Colorado-based shred exec, “but she’s a farm woman—tougher than most.”) can now gobble up eight thousand pounds of paper in a work day that leaves plenty of time for doughnuts.

SHRED NOW

Mobile shredders have become part of the landscape. You have certainly seen these trucks set up on a street in midtown, or cruising the highway to a job. Many are now small enough that they can be manned by a driver-operator without a commercial trucking license. An automated elevator-hopper cranks the bins up to the top of the feeder; the whirr is noticeable, but not obscene. And most systems now feature real-time video monitoring of the shredding process itself. You give them your paper, they give you a DVD, so you can watch every page disappear into the intermeshing blades of a high-torque memory hole.

In the United States alone, something on the order of nine million tons of “business communication paper” is consumed each year. The vast majority of this is nongovernmental material (probably upwards of 90 percent). About 70 percent of that nine million tons of paper is formally “destroyed” each year (the rest is either archived or leaves the world without last rites). Several important legal changes across the 1990s accelerated the move to high-volume shredding of such a large percentage of US paper. Both the Health Insurance Portability and Accountability Act (1996) and Gramm, Leach, Bliley (a.k.a. the Financial Modernization Act of 1999) included specific obligations for document

destruction—but these were drawing on more than a decade of state and federal laws concerned with identity theft and medical records, many of which stipulated formal conditions for shredding personal and financial records. There is no state in the union that does not currently have document destruction regulations.

NAID, founded in 1994, is composed of some 1,200 member companies which compete for shares of an industry worth on the order of five billion dollars a year. They are producing enough shred to bury us—slowly, silently, like the end of a Jack London novel.

This does not happen, of course, because—though some of that shred does indeed end up in landfills, in animal bedding, in insulation and packing materials, and so forth; and this is the shred that is becoming part of our actual landscape, not merely our cultural horizon—a great deal of the stuff is compressed into bales and shipped to Asia, whence it returns to us as paper. Pristine, white, information state zero.

AN ASIDE ON BURNING

People have been putting information on one or another sort of paper-like material (papyrus, vellum, birch bark, etc.) for a few thousand years. For essentially the entirety of that history, those who wished to obliterate such inscriptions resorted almost universally to nature’s most spectacularly brisk, easy, and violent oxidation reaction: fire. Book burnings were standard operating procedure in the confessional conflicts of early modern Europe. “Burn This” scrawled beneath the valediction of a letter achieved the status of a Romantic commonplace. The first half of the twentieth century—from Verdun to Hiroshima via Auschwitz—cannot be reduced to the word *conflagration*, but much went up in smoke across those years.

Burning remains a recognized means of information destruction. It is discussed, for instance, in the Defense Security Service’s helpful “Terminator VIII: How to Destroy Your Classified Materials”—a handbook prepared by the Information Security Team of the Department of Defense’s Security Institute. Burning is there acknowledged as an “authorized method for destruction of all levels of classified materials,” though a qualified person must ensure that the destruction is complete, the materials must be stirred to ensure that no unburned residue survives, and (here comes the EPA) “environmental standards must be met.” Significantly, however, in a bureaucratic document that fairly luxuriates over the fine points of difference between “pulverizing” technologies (via the “hogger” or the “chopper”) and spends a good deal of time on

“hybridized disintegrators,” there are hardly half a dozen sentences on burning.

It seems hard to believe that this radical shift—from a world in which burning *was* document destruction to a world in which burning *hardly comes up* as a means of document destruction—can be laid wholly at the feet of our changing environmental consciousness. Maybe. But does it not feel like there must be something more going on? Consider this: Burning is a *change of state*. It is, simply, *destruction*. In this sense, as a means of *information* destruction, it is, somehow, *impure*. Perhaps even ... *cheating*. Burning is “mere” destruction, not *information destruction*—except incidentally.

Which wends us back to that opening conundrum: the shredder as the ghost-tool of the digital age. Perhaps we are not talking about an irony at all. Perhaps shredding is in fact a technology specifically evolved to reinforce (via whirring blades and sifting residue) the specific character of “information” as such—its imminently transcendental nature, the immanence of its immateriality. If this is so, our rapidly expanding technological commitment to the semi-public ritual of document shredding may need to be understood less as a simple indication of our anxieties about privacy, and more as a symptom of our need to create formal, quasi-liturgical occasions to perform the separation of information from mere matter. The medium may be the message, but, in the final hour, they have different fates. Shredding proves this.

These trucks move through the world sifting apart what we have stitched together: thoughts and things; fear and fiber; self and stuff.

THE PROPOSAL

All this is speculative. And perhaps premature. What is needed now is a serious effort to come to grips with shred—with this material, what it looks like, who is making it, where it goes, where it stays, how we can keep track of it. We must begin to position ourselves to make sense of its place in a changing natural and information ecosystem.

To this end, the authors propose a phase-one effort, in keeping with the spirit of the great participatory natural history surveys of the nineteenth century. What we need is a kind of “citizen science” in this important area: an expanding network of correspondents and collaborators working to collect specimens of shred, to gather relevant data on the technical devices that made a given sample, and to assist us in assembling a serviceable “field guide” to this material. The authors foresee many important functions for such a guide. Just as early bird-census

work laid baselines for the habitats, range, and distribution of many common avian species (data invaluable for later studies of population change and movement), the authors envision assembling a basic database of shred patterns and their characteristics (edge quality, chad size, variability, etc.), wherever possible correlating this information with technical specifics (grinder-shredder, pierce-and-tear, hammermill), and manufacturer details—together with whatever information can be gleaned about the geographical regions over which a particular kind of shred is likely to be encountered.

Who needs this information? We contend that we are all enmeshed in the shredder system. Its invisibility—that we type on glowing screens, unaware of the perpetual rattle of the choppers eating the material sluice of our data-selves—perpetuates, we believe, a radical false consciousness about the information age and our place in it. The information age is made by—sustained by, instantiated in—hundreds of millions of tons of non-information that currently passes through a hidden circuitry (of loading docks and truck routes, landfills and pulp plants) about which we know next to nothing. We have forgotten the forgetting that makes our collective memory possible. In this context, a field guide to shred will be more than a handbook for the archaeologists of the future (though we suspect it will be that) or a useful tool for the refuse sleuth (though there too it will have its function). A field guide to shred will be a collective and participatory program for reaching down into our forgotten matter—which is also the matter of our collective forgetting. We must let this material pass through our fingers. Scrutinize it. If only to see what is not there.



ULTRASHRED MOBILE TRUCKS (Predator G3 Series)

DESCRIPTION Look for curled edges, multiple accordion folds, and an overall worn, aged, softened quality to identify material produced by UltraShred trucks. UltraShred's hammermill system pounds the paper with repeated force, recapitulating the process by which fibers are initially prepared for papermaking. Text may be rendered less readable as the paper substrate is broken down ("de-inking"). The hammers crush documents against changeable screens with apertures ranging from 2" to 3/8", producing consistently sized shred particles with a distinctly crumpled appearance. The finest 3/8" screens produce a cottony fibrous mass.

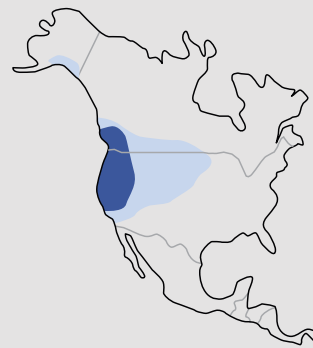
SHRED TYPE Pulverized. Paper is more disintegrated than in other shredding methods.

SHREDDER TYPE Hammermill. In UltraShred's Predator series trucks, a hopper feeds into a mill which consists of a single shaft fitted with a series of 56 hammers (rectangles of hardened steel) rotating at high speeds. These bang repeatedly against the fixed surface of a screen, pulverizing and disintegrating the material which is then pulled through the screen via pneumatic action.

SECURITY LEVEL DIN security level 1-5 (10.5mm x 40-80mm cross cut). By particle size alone, UltraShred hammermills at their finest screen setting produce shred only at security level 1. However, the pulverizing process produces less legible and forensically reconstructable material than comparable methods of cutting and tearing.

SIMILAR Shredfast's Series 200 hammermill trucks produce shred of similar appearance.

RANGE UltraShred trucks are most common in the Pacific Northwest, radiating down into California and have been seen as far east as Minnesota. Despite their superior document disintegration capabilities, hammermills—at one time the most common kind of mobile shredder—are quickly being replaced by quieter, higher-throughput pierce-and-tear shredding trucks.





VECOPLAN MOBILE TRUCKS (VST 31I, VST 42E, and similar)

DESCRIPTION Shred from Vecoplan trucks is distinctly non-rectangular, with irregular edges on all sides. The effect is of a scattering of tiny European nations torn from a map. Vecoplan's grinding shredder causes edges to part with a sheering action, leaving a fringe of fibers visible through magnification. Particle size may vary considerably but should be relatively consistent within any given batch, as Vecoplan models are equipped with interchangeable screens used to filter the chad by size. Larger screens (3" to 1") are commonly used in situations of low to normal security and finer (1/4" to 1/8") screens create the tiny particles demanded in the disposal of secret and top secret documents. The latter may be rare discoveries, as military specifications can also require assurance of further chemical disintegration, supervised recycling, or burning.



SHRED TYPE Cross-shred. Note: Though technically a type of cross-shred, the grinding/sheering action produces an average of 6-12 torn edges per piece of chad (vs. 4 edges on a standard office cross-cut machine).

SHREDDER TYPE Grinder. Single shaft rotary design with a hydraulic ram that pushes the material against rotating torsion point cutters, which then shear it by carrying it past a fixed cutting blade.

SECURITY LEVEL DIN security level 5 (0.78mm x 11mm cross cut). For additional security, customers can request a certificate of destruction, with full video documentation provided on a solid-state flash memory chip.

SIMILAR In addition to their mobile trucks, Vecoplan makes a number of stationary (in-plant) shredders using the same technology. It is not certain that the product of these different models can be clearly distinguished. See also the Cresswood Destroyer series.



RANGE Vecoplan shred may be found throughout the US and Canada, but is rare except for national security and military use. Look for Vecoplan shred in areas of high government activity (Washington D.C., Virginia, Maryland) and near military bases and research stations (e.g. Sandia National Laboratories, Area 51).

