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SPAM

A SHADOW HISTORY OF THE INTERNET

FINN BRUNTON

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This book is dedicated to the memory of Gunard Solberg, dear friend and inspiration, deeply missed.

INTRODUCTION: THE SHADOW HISTORY OF THE INTERNET

PRELUDE: THE GLOBAL SPAM MACHINE

Pitcairn Island in the South Pacific is the smallest and least populated jurisdiction in the world, described by the first mariner to observe it as a “great rock rising out of the sea . . . about a thousand leagues westward to the continent of America.”¹ It’s a lonely place; when the *Bounty* mutineers needed a refuge from the global empire whose laws they’d broken, they sailed for Pitcairn and vanished for almost two decades. As of last year’s electoral rolls, there are 45 people on Pitcairn, most of them descended from the mutineers. There is a government-subsidized satellite Internet connection for the island’s houses. Per capita, Pitcairn Island is the world’s number-one source of spam.

How is this possible? Can this island, whose major export industries are handicrafts for passing ships and stamps for philatelists, host a cabal of spammers bombarding the world with phishing messages and Viagra ads by satellite connection? In the list of spam production per capita, Pitcairn is followed by Niue and Tokelau, also in the South Pacific; the Principality of Monaco, whose population overwhelmingly consists of rich expatriates dodging taxes in the world’s second smallest country; and the Principality of Andorra, a country one-fifth the size of Rhode Island.² Are there really that many Catalan-speaking Andorran spam barons, accumulating stolen credit card data by the ski slopes of the Pyrenees?

The answer is no, of course. The Polynesians who live on Niue, like the wealthy Europeans overlooking the Mediterranean, have been unknowingly conscripted into the business of spam. Virtually all of us on the Internet have been, on one side or another. Spam has changed laws and communities at the points of friction where the network’s capacities rub

against prior orders of work and governance. It has changed our language, economics, and culture and exerted a profound effect on our technologies. It has subtly—and not so subtly—deformed the shape of life online, pulling it into new arrangements that make no more sense than the movement of the galaxies unless you allow for the mass of all the dark matter. Only at scale, in time and in space, can we begin to bring this shape into focus. It stretches from embryonic computer networks in the 1960s and 1970s to the global social graph of 2010, from the basements of MIT to the cybercafés of Lagos, Rotterdam, and Tallinn. It encompasses points across the network from covert chat channels to Google’s server farms to “ghost number blocks” to anonymous banks of airport pay phones. The spam most of us experience every day as a minor and inexplicable irritant is like the lonely rock that sailor sighted, merely the visible peak of vast and submerged infrastructures with much to say about the networked world.

The word “spam” means very different things to different people at different times. It is a noun, collective and singular, as “this spam” can mean “all these messages I’ve received” or “this particular email.” It is a verb, as in “they spam me,” and an adjective, as in “this is spammy.” It refers to many varieties of exploitation, malfeasance, and bad behavior, and spam terminology has branched out into specific subdomains, from “phishing spam” and “419 spam” to splogs, linkfarms, floodbots, content farms. (All of these new terms and forms will be defined and described in the following chapters.) It can easily slide into what philosophers call the “sorites paradox” (“sorites,” appropriately for talking about spam, comes from the Greek word for “heap” or “pile”) to describe the linguistic confusion between grains of sand and “sand” in dunes, the moment at which individual bits become a single big pile. When “spam” is discussed in journalism or casual conversation, the word is often meant as I have used it in the previous paragraph, as a unified substance or a continuous event, like smog or “a mass or pulp,” as Susanna Paasonen puts it.³ But spam begins to make sense only when we get specific and separate out the different types, motives, actors, and groups.

Spam is not a force of nature but the product of particular populations distributed through all the world’s countries: programmers, con artists, cops, lawyers, bots and their botmasters, scientists, pill merchants, social media

entrepreneurs, marketers, hackers, identity thieves, sysadmins, victims, pornographers, do-it-yourself vigilantes, government officials, and stock touts. Long as it is, this list mentions only those who live there more or less full-time, because everyone online participates in the system of spam, however indirectly. We fund and enable it with choices we make and trade-offs we are willing to accept because the benefits to the network outweigh the costs. We generate areas of relevance and attention whose discovery and exploitation is the heart of the business. We alter how spam works and break up its current order with choices, refusals, and purchases whose consequences we may not understand.

Those houses on Pitcairn, for example, connected to their satellite link, do not shelter spammers hard at work. At some point, a few of the computers on Pitcairn were taken over by a piece of malware, probably arriving as the misleading payload of a spam message that appeared to come from a friend, taking advantage of unpatched or insecure software that can be daunting for the user to maintain. This malware quietly commandeered the computers without their owners ever noticing (perhaps they merely thought that the machine, and the Internet connection, had become a little slower) and enrolled them along with many thousands of other captured computers in homes and offices around the world into a system called a “botnet.” One of the functions of the botnet is to use spare computer power and Internet connection bandwidth to send out spam messages on behalf of the botnet’s controller, who can thus generate hundreds of millions of messages at effectively no cost. A desktop computer, manufactured in Shenzhen or Xiamen or Chennai, powered by a diesel generator and online through a satellite over the Tropic of Capricorn, on a remote island in the Melvillean Pacific, has become part of a distributed machine controlled by a remote group of botmasters in Denver or St. Petersburg. This is a system unprecedented in human history, a vision out of science fiction, that writes constantly repeating messages of crushing banality: “YOU HAVE WON!!!/Congratulations!!! You have won £250,000.00POUNDS from Pepsi Company award 2010, Please provide your Full name, Age, Sex, Country, Occupation”; “Permanent Enlarged-Penis/She prefers your lovestick bigger”; “Listen up. I must let you in on a few insider *secrets*: Instead of waiting months to generate sales on your site, you can start gaining the hits you want right now.”

THE TECHNOLOGICAL DRAMA OF SPAM, COMMUNITY, AND ATTENTION

This is a book about spam for anyone who wants to understand what spam is, how it works, and what it means, from the earliest computer networks to the present day. To understand spam means understanding what spam is *not*, because—as you will see—the history of spam is always a history of shifting definitions of what it is that spam harms and the wrong that it produces. The history of spam is the negative shape of the history of people gathering on computer networks, as people are the target of spam's stratagems. It is defined in opposition to the equally shifting and vague value of "community." (In fact, many of the early cases of spam provoke groups of people on computers into the task of self-definition and self-organization as communities.) To put this history and this book into a single sentence: spamming is the project of leveraging information technology to exploit existing gatherings of attention.

Attention, the scarce resource of human notice, is what makes a community on the network, and the creation of communities, the invention of "we" on the Internet, is an act of attention. Communities and spam as a whole are projects in the allocation of attention, and spam is the difference—the shear—between what we as humans are capable of evaluating and giving our attention, and the volume of material our machines are capable of generating and distributing when taken to their functional extremes.⁴ Over four decades of networked computing, spammers have worked in that gulf between our human capacities and our machinic capabilities, often by directly exploiting the same technologies and beneficial effects that enable the communities on which they predate. These two forces build, provoke, and attack each other, and the history of one cannot be understood without accounting for its nemesis.

This co-constitutive feedback loop between communities and spammers is a major event in the technological drama that is the Internet and its sister networks. This term, "technological drama," is from the work of Bryan Pfaffenberger and provides framing and context for the story to come; it is the life of a technology, from conception and design through adoption, adaptation, and obsolescence.⁵ Why a *drama*? Because technologies are statements about the distribution of needful things such as power, status, access, wealth, and privilege, for good and for ill. They are stages

on which social and political arguments and counterarguments are made. These arguments may be not merely irrational but also deeply cultural and ritualistic, expressing convictions that lie well beyond the immediate physical constraints of engineering. A technological drama is suspenseful: it is not played out to foregone conclusions but is rife with the possibility of subversion, takeover, and unexpected captures. It is a drama of escalation and feedback loops, for technologies are never merely passive vessels for holding ideas and ideologies but active things in the world that open new possibilities and capacities. They change the communities that created them and those that take them up.

The inciting incident that frames any technological drama and gets it moving is the gathering of a "design constituency," in Pfaffenberger's phrase. "Constituency" is well-chosen, because we are not simply referring to the engineers, inventors, scientists, or designers who actually work the lathe, draw out the blueprints, or blow the glass but to the entire body of people who participate in the design and who stand to directly benefit from the technology's success. It is to their benefit if it sells, of course, assuming that it is the kind of technology that can be commoditized into widgets and not, for instance, a civil engineering project. More important, however, is that the values embedded in the technology, intentionally or unintentionally, become dominant. Those values reflect an arrangement of power, control, and prestige that the design constituency would like to see in the world, whether centralized and privatized, open and egalitarian, or otherwise. This design constituency can include the engineers and applied designers themselves, as well as managers and shareholders in firms, but also politicians, experts, theorists, and elites. What is complex and important here is to be able to view technologies in two ways at once: seeing both their physical capacities and functions, and their social and political assertions—the moves they make in the allocation of resources and power. We will explore computer networks and the people building and using them with this perspective.

To get some perspective on how technological dramas work as an analytic tool, consider the case of heavier-than-air aviation. No one would argue against the profound benefits delivered by the development of powered flight, but to really understand the adoption and adaptation of the technology we must account for the acts of political stake-planting and the renegotiations of influence and control that went with it. Aviation's

roots included the powerful early idea of “air-mindedness,” for which planes were not just powered, winged craft for flight but objects whose existence was a direct expression of a rational, modern, and global mindset that would simultaneously bring about world peace and subdue colonized populations through bombing.⁶ H. G. Wells, for instance, in his role as a public intellectual and policy advocate, framed the work of getting from one place to another by air as nothing less than the formation of a new generation of intellectual pilot-samurai who would enforce a technocratic world state. This coming class would be necessarily scientific, cosmopolitan, and forward thinking, because they used planes. Airplanes, Le Corbusier asserted, were “an indictment, an accusation, a summons” to architects and city planners, shaming their retrograde ideas: planes were pure futurity, the avatars of the machine age.⁷ At the same moment, figures such as Gabriele D’Annunzio, aviator and Fascist literary icon, and Italo Balbo, commander of Italian North Africa and leader of the famous Century of Progress Rome–Chicago flight, were using both the glamour and threat of flight as an assertion of Fascism’s fusion of futuristic dynamism with nationalist and archaic agendas. In the United States, flight included the democratic vision of self-taught tinkerers hacking on planes in barns and garages and potent assertions of military superiority and the projection of power abroad in an abruptly smaller world. And so on. This many-layered complexity of motives, ideas, fantasies, and goals obtains across the technological domain. To understand any technical event in depth, we need to be able to describe the full range of interests in the work of the design constituency.

→ The other side of the drama is the “impact constituency,” those whose situation is being changed by what the design constituency produces. Neil Postman simply called them the “losers,” because the rearrangement of the world, although not necessarily one in which they lose out explicitly, is one over which they have little initial control. Examples from Pfaffenberger’s research are particularly well suited for this purpose. Consider the politics of irrigation projects in Sri Lanka, a particularly bald-faced attempt at social engineering via technological deployment. Landed, powerful, and deeply anti-industrial local elites sought to manage the threat of dispossessed, dissatisfied, and mobile peasants by creating a neatly controllable system of rural settlements. It was a project of getting them back on the farm, to put it simply, where they would stay ignorant of modernity

and easier to tax and manage, forestalling the arrival of an industrial order in which the landholding “brown sahibs” stood to lose. The landholders did the designing, and peasants felt the impact. James C. Scott’s work provides several cases along these lines—of compulsory villagization, collectivization of agriculture, and high modernist urban planning—in which the capture and redistribution of value is exerted through the production of artifacts, places, and systems of living, always framed as “for their own good.”⁸ We could also speak on the far smaller and more intimate scale of something like the Victorian household’s hallway bench, with its ornate mirrors and carved hooks, for the household’s masters to view as they walk by and hang their hats, and the strikingly uncomfortable bare low bench on which the servants, messengers, and peddlers are to sit and wait.

What makes these relationships of design and impact into a *drama* is the back-and-forth of technological statements and counterstatements. After the original assertion made in the design and deployment of a technology come the responses, as the impact constituencies take things up, change them, and accept them or fight back. The design constituency cooks up methods and language for using technologies to arrange, distribute, or contain power, status, and wealth, and impact constituencies have countermoves available. They can produce arguments to get their hands on the technology, for instance, and reconstitute it, which does not merely ameliorate the painful setbacks produced by the deployment but actually generates a new technology that builds on the old for their own purposes.

The most obvious and canonical instance of reconstitution in a technological drama, producing a “counterartifact” out of the existing technology, is the personal computer. Decades of development in computing had been the product of the military, academia, and contractors and corporations such as IBM. The computer was “the government machine,” sitting in the ballistics lab and running models for building nuclear weapons and game theory analyses of Cold War outcomes.⁹ Computing had become virtually synonymous with a bureaucratic, administered society in which people were subsumed as mere components, in what Lewis Mumford termed the “megamachine.” Against this concept came the first hackers and subversive tinkerers, activists, and artists, with Ted Nelson (who coined the term “hypertext”) asserting, “You can and must understand computers *now*,” “countercomputers” for the counterculture, the Homebrew Computer

Club, the Apple I and II, and so on.¹⁰ The drama never stops, and Fortune's wheel keeps turning, casting down and raising up and demanding new technical statements and counterstatements.

Getting a significant new technology that is instilled with cultural values and political goals to "work" is an act of assembly, of mobilizing different groups, ideas, forces, and stakeholders together. There needs to be a flexibility to the idea, enough that you can pull heterogeneous and sometimes even opposed powers into an alliance behind it. A technology too clearly and narrowly defined may not be able to develop all the alliances it needs. For the Sri Lankan irrigation project, it meant creating a complicated alliance of ethnic and religious chauvinism, paternalistic philanthropy, opposition to the old British colonial order (by an elite whose power derived from the restructuring of society under the British), and so on. A similar multiplex set of alliances could be seen in the free/libre open source software (FOSS) movement, with businesses, individual charismatic activists, developers, and political radicals of many stripes and very diverse agendas trying to gather under the same banner. The epic semantic fork between the models of open source and free software in 1998 captures one of the moments when the ambiguities became unsustainable and had to be reformulated. "Movement," writes Christopher Kelty, "is an awkward word; not all participants would define their participation this way. . . . [They] are neither corporations nor organizations nor consortia (for there are no organizations to consort); they are neither national, sub-national, nor international; they are not 'collectives' because no membership is required or assumed. . . . They are not an 'informal' organization, because there is no formal equivalent to mimic or annul. Nor are they quite a crowd, for a crowd can attract participants who have no idea what the goal of the crowd is."¹¹ This complex mesh, sharing practices and debating ideology, is a design constituency, gathering around the technology and trying to marshal support for different and sometimes conflicting visions to push the project into the world.

This process of gathering and marshaling is strengthened by some founding ambiguities. These let the designers cast a wide net and make it easier to argue that this technological project speaks for *you*, too. Some of these ambiguities are invoked of necessity. The story that a design constituency builds to draw in stakeholders from different domains to support a new technology must draw on what Victor Turner terms "root paradigms,"

the deep organizing principles of a culture and an epoch that provide a rationale and a motive for action. Root paradigms aren't exact and precise, and they are never simply true or false. Whether they be submission to the free market, the sanctity of human life, the vital and cleansing power of war, or the unquestionable role of the dynastic king, root paradigms are dynamic, messy, and enormously powerful concepts built on internal oppositions. They draw their energy and vitality from their unsettled condition of irreconcilable struggle within which new technologies, political initiatives, and movements can be placed and contextualized. At major turning points in the development of the Internet and spam, struggles between constituencies were played out that drew on far older root paradigms such as absolute freedom of speech, communal self-defense and self-organization, the technological autonomy of the capable individual, the inevitability of destructive anarchy without governance, and the centrality of commerce to society. The presence of these paradigms gives technological deployments the thrilling, and often later inexplicable, attraction of social movements (because that is, in fact, what they are). They draw their strength from roots sunk deep into the earth, where the bones of prior orders and the ruins of previous civilizations underlie the present.

These foundational ambiguities in a technology's design are a crucial resource for the impact constituencies and others to exploit. Sally Moore describes how a reworking of the arrangements introduced by a technology is made possible, by "exploiting the indeterminacies of the situation, or by generating such indeterminacies . . . areas of inconsistency, contradiction, conflict, ambiguity, or open areas that are normatively indeterminate."¹² The indeterminate space is the place for trade-offs and concessions, ways to get many diverse parties working together and pointed in the general direction envisioned by the design constituency. It is also leaves apertures and affordances in the plan for the manipulation, escapes, and exploitation of others, from innovations and improvements to exploits and deliberate sabotage—and thus for things like spam.

This complex indeterminacy obtained at every stage of the Internet's development. As will be discussed later in this book, there was deep uncertainty and widely varying understandings as to what this thing was to be and how it should be used by people and by hardware and software. This uncertainty was an enormous boon for innovators and inventors, for the strange frontiers of network culture, and for both hackers and criminals,

whose somewhat blurry relationship and ambiguous legal status recurs in this history. Spam survived and prospered by operating in the edge cases around these big ideas, in the friction between technical facts and the root paradigms that are expressed in them where powerful concepts like trust, anonymity, liberty, and community online were reinvented, modified, and sometimes discarded. In following spam, we will explore how these ideas evolved and, above all, how human attention online, and the strategies for capturing it, changed over time.

THE THREE EPOCHS OF SPAM

Appropriately for a technological drama, the history of spam has three distinct acts, which are reflected in this book's three sections. The first, from the early 1970s to 1995, begins with conversations among the architects of the earliest computer networks, who were trying to work out acceptable rules, mores, and enforcement tools for online communication. It closes with the privatization of the Internet and the end of the ban on commercial activity, the arrival of the Web, and the explosion of spam that followed the Green Card Lottery message on Usenet in May 1994. It is a quarter-century of polylogue concerning the fate and the purpose of this astonishing thing the online population was fashioning and sharing ("polylogue" being a term from an early computer network for this new form of asynchronous and many-voiced conversation on screens). It includes a remarkable cast of postnational anarchists, baronial system administrators, visionary protocol designers, community-building "process queens," technolibertarian engineers, and a distributed mob of angry antispam activists. It is an era of friction between concepts of communal utility, free speech, and self-governance, all of which were shaped in a negative way by spam. "Spam" here is still used in its precommercial meaning of undesirable text, whether repetitive, excessive, or interfering. The imminent metamorphosis of these ideas as the values and vision of the network changed in the mid-1990s was partially signaled and partially led by changes in spam's significance and means of production.

The next phase lasts about eight years, from 1995 to 2003, or from the privatization of the network through the collapse of the dot-com boom and the passage of the CAN-SPAM Act in the United States. It is about money and the balance between law and collective social action. Those

years are filled with the diversification of spam into a huge range of methods and markets, following and sometimes driving innovations on the Internet and the Web, from search engine manipulation and stock market "pump-and-dump" schemes to fake password requests and "Nigerian prince" fraud campaigns. During this time, a strange class of magnates and hustlers is born, arbitraging the speed of new technological developments against the gradual pace of projects to regulate them. Their nemeses start here as well, with antispam projects ranging from message-filtering programs to laws and coordinated campaigns of surveillance, research, and harassment. This period is fraught with uncertainty about the role of nations and territorial boundaries online, the ambiguous rights and responsibilities of "users," and the relationship between what algorithms can process and what humans can read.

The most recent phase, from 2003 to the present day, turns on these questions of algorithms and human attention. A constellation of events is dramatically changing the economics of the spam business: the enforcement of laws, the widespread adoption of powerful spam filters, and the creation of user-produced content tools. To keep the business profitable, those spammers who survive the transition will develop systems of automation and distributed computing that span the globe and lead to military applications—building nothing less than a criminal infrastructure. In turn, antispammers will rely on sophisticated algorithms and big data to minimize the labor of catching and blocking spam messages. As spam prefigured and provoked crises in community and governance on the Internet, it now shows us an imminent crisis of attention—in the most abject and extreme form, as always. After four decades of interrupting conversations, grabbing clicks, demanding replies, and muddling search results, spam has much to teach us about the technologies that capture our attention, now and to come.

SPAM AND THE INVENTION OF ONLINE COMMUNITY

Life will be happier for the on-line individual because the people with whom one interacts most strongly will be selected more by commonality of interests and goals than by accidents of proximity.

—J. C. R. Licklider and Robert Taylor, 1968

Those who buy into the myth that Cyberspace is a real place also believe that this illusory locale houses a community, with a set of laws, rules, and ethics all its own. Unfortunately, the perceived behavior codes of Cyberspace are often in conflict with the laws of more substantive lands like, for instance, the United States of America.

—Lawrence Canter and Martha Siegel (creators of the green card lottery spam), 1995

GALAPAGOS

To understand the history and the meaning of spamming in depth, we need to understand the history of computer networks, the people on them, and the cultures they created. In many ways, the most remarkable thing about the word “spam” is its transitivity and portability. It is used to talk about completely different kinds of activity, not just on different websites or applications but on completely different *networks*. Forms of “spamming” existed on networks like Usenet and The WELL, quite distinct from the Internet, as well as on email and the web, and web-based systems from blog comments and wikis to Twitter. What do we mean, then, by a network of computers—the prerequisite for spam? It is something contingent and historically complex, something that could have

developed in very different ways. There was not one network, but many. Spam, in all its meanings, is entwined with this polymorphic history.¹

Initially, computer networks were specific to types of machines, institutions, and projects. The Internet, when it came, was the network of these networks, and early forms of spam retained some local character from the different kinds of systems on which they developed. In the beginning, the programmers would create an operating system specifically for a single computer, purpose-built for a customer's goals. Likewise, the engineers and architects built each network for its specific purpose, with an enormous diversity of approaches, and it is important to remember how many and how strange were the systems made so computers could talk together.

For a start, there were networks for businesses, such as the international packet-switching network (using the same technology underlying the Internet) for managing airline reservations in the late 1960s and the General Electric Information Services, part of GE's construction of their own continent-wide network for internal use. There were military defense networks, such as the Semi-Automatic Ground Environment or SAGE, fully operational in 1963, which could display all of U.S. airspace in real time so that the Air Defense Command could spot potential enemy planes and coordinate a response, using lightguns to "click" on the screen. It was a milestone of technological planetary visualization running for crewcut specialists in Mutually Assured Destruction, with an ashtray built into every console. Yet by the early 1970s, there were also hippie networks, such as Community Memory in Berkeley, which was a couple of teletype terminals—boxes with keyboards where a scroll of paper is the "screen"—in a record store and a public library for posting comments and questions and reading replies relayed from a refurbished banking computer hustled for free from a warehouse. Counter-computing for the counterculture:

```
> FIND PHOTOGRAPHY
1 ITEMS FOUND
> PRINT
#1: MELLOW DUDE SEEKS FOLKS INTO NON-EXPLOITABLE PHOTOGRAPHY/
MODELING/BOTH . . . OM SHANTI
```

And so on: where to find good bagels and a good bassist, plus rants, freak-outs, somber conspiracy theorizing, Burroughs parodies, and much quoting of rock lyrics, a textual genre mash difficult to describe precisely but

instantly recognizable to anyone who has spent time in online chat spaces and message boards.²

There were hobby networks once the price of PCs and modems had dropped enough to be affordable for a somewhat wider audience. Bulletin Board Systems or BBSes, set up with a phone line and disk drive, took local calls one at a time to upload and download files from a disk. These little isolated systems were akin to the farmer's telephone networks before the consolidation of the Bell monopoly, when phones interconnected a small town, transmitting over spare barbed wire and insulators made from the sawn-off necks of Coca-Cola bottles.³ FidoNet was developed to let BBSes call each other and pass files and messages edgewise, from one board to the next, hooking up area codes, regions, the nation, and the world. Then came software that built Fido out further so that BBS users could post messages to common discussion groups shared among many BBSes, and the boards multiplied into the thousands and tens of thousands through the late 1980s and early 1990s.⁴

There was a network devoted to passing messages back and forth between IBM computers on university campuses, a research network for physicists, and a proprietary network protocol specific to machines made by the Digital Equipment Corporation (DEC), called DECNET (on which yet another group of physicists built yet another scientific collaboration network). There was an extremely meticulous and demanding network protocol called X.25 developed by the big telephonic standards bodies in the image of Bell's network—carefully run, end to end, with painstaking error correction—that underlay ATMs. X.25 was also used by some national networks such as Transpac in France, where it was the basis for the "French Internet" that was Minitel—millions of phone terminals with keyboards that could be used to look up phone numbers and buy airplane tickets and trade erotic chat messages (*messageries roses*) and coordinate a national student strike (as happened in 1986).⁵ There were enormous struggles for adoption and market share between competing standards.⁶

As mentioned earlier, there was also The WELL (for "Whole Earth 'Lectronic Link"), which ran on an old DEC computer in Sausalito, California—an early social network hosting an ongoing billion-word conversation among the Deadheads, hippies, and early personal computer adopters of the Bay Area. (The WELL, SAGE, DECNET, BBS: geeks and the military are both very fond of acronyms, for which I ask the reader's

indulgence for now.) There were games on some of these early networked computers that you could play with other people, games with names like “MUD1” and “TinyHELL” and “Scepter of Goth” and “FurryMUCK”: new environments and settings for communication. There was a network that sent packets of data by radio around Hawaii because the phone lines were unreliable.⁷

With a few experimental exceptions, these networks could not talk to each other, and the users of one could not send messages or trade files with the users of another. It was an ocean scattered with Galapagian islands, only rarely communicating, with native forms evolving at their own speed and in their own direction, “most beautiful and most wonderful.”

It was an ideal situation for a scholar of digital culture looking for convergent shapes and genealogies, but a nightmare for an engineer seeking efficiency and interoperability. This difficulty was exemplified by Room 3D-200 in the Pentagon in 1966: the office of the Advanced Research Projects Agency (ARPA). It was Robert Taylor's office; he was an experimental psychologist turned engineer who had recently left NASA for ARPA, and the suite next to his office was occupied by three bulky terminals.⁸ Each gave him access to a separate remote computer mainframe: the Compatible Time-Sharing System (CTSS) at MIT, Project GENIE at University of California–Berkeley, and the computer at the System Development Corporation in California (which had taken part in the construction of the huge SAGE system described earlier). Users of the three networks could not talk across them or share resources between the mainframes. This setup was expensive and obviously redundant; it prevented the groups on the separate university systems from working together, and Taylor had strong feelings about collaboration. “As soon as the timesharing system became usable [at a university], these people began to know one another, share a lot of information, and ask of one another, ‘How do I use this? Where do I find that?’ It was really phenomenal to see this computer become a medium that stimulated the formation of a human community.”⁹ That was the effect of just one machine at one university switching to time-sharing from a batch processing system. A *batch processing* computer did tasks one at a time in order and, as computer scientist John Naughton put it, you only knew the other people using the computer as names in

the queue taking up processing time.¹⁰ Imagine, then, what hooking all the different time-sharing networks together might accomplish—the “‘community’ use of computers,” in Taylor’s words, assembling “a ‘critical mass’ of talent by allowing geographically separated people to work effectively in interaction with a system.”¹¹

A network of networks, for reasons that combined utility, efficiency, and budget with a concept of “human community”: this was the vision for a new project, christened ARPANET, whose genesis and demise bracket this epoch of spam. The first recorded instance of spam behavior occurred on that CTSS network at MIT, and Taylor would have received it at his terminal in the Pentagon. The second protospam was sent on ARPANET itself. Because spam will appear, in all its forms, in relation to the community, each calling the other into being, we must understand what we mean by “community” on these networks.

THE SUPERCOMMUNITY AND THE REACTIVE PUBLIC

Taylor worked with J. C. R. Licklider, a Johnny Appleseed of computing who had been part of SAGE and ARPA and many other influential projects. Licklider was deeply convinced of the transformative power of the computer, writing visionary documents about “man–computer symbiosis” and addressing memos within ARPA to “Members and Affiliates of the Intergalactic Computer Network.”¹² Licklider and Taylor coauthored the 1968 landmark paper “The Computer as a Communication Device,” in which they envisioned, blooming on the network of networks, nothing less than the community of communities, making “available to all the members of all the communities the programs and data resources of the entire super community.”¹³ The supercommunity was like the supercomputer: the power of many minds, like many processors, running in parallel and efficiently distributing the load of thinking and working.

These two elements of computing infrastructure and social order were closely, rhetorically conjoined. “What we wanted to preserve,” wrote the computer scientist Dennis Ritchie about losing access to an early time-sharing system at Bell Labs, “was not just a good environment in which to do programming, but a system around which a fellowship could form”—nothing less than “communal computing.”¹⁴ The system at MIT that Taylor was connected to from the Pentagon, CTSS, was a direct

ancestor of an important system called Multics. Multics had a command called “who” that would tell you who else was logged in while you were. Knowing this information meant that you could contact someone who was also logged in with an electronic message or a phone call. It was not simply a computing system, but the starting point of online society. “The who command,” writes the software engineer Tom Van Vleck, whom we will encounter again at the first appearance of spam, “contains the tacit assumption that the users of the Multics installation are all reasonable colleagues, with some shared set of values.”¹⁵ Or, as administrators Cliff Figallo and John Coate said of watching The WELL’s devoted users face a social crisis: “We looked at each other and said, ‘They’re calling it a community. Wow.’”¹⁶

“Community” and “spam” are both difficult things to talk clearly about: outstanding examples of words as places rather than fixed objects, that is, zones where we can meet and negotiate about meaning. These words act as open space for the movements of great powers and agendas, as well as small roving groups of actors. “Community” enables conversations about its meaning. For early sociologists such as Ferdinand Tönnies and Émile Durkheim, community (along with the similarly spacious “society”) makes room for describing the condition of people together after the advent of industrial modernity—indeed, for drawing opposing conclusions about that condition. For Jean Lave and Etienne Wenger, “communities of practice” are an area for theorizing learning and, later, knowledge management. For the Chicago School of sociology—and Marshall McLuhan, and those in his aphoristic wake—community, among other things, frames the conversation around theories of media, such as the visionary “Great Community” whose possibility Dewey discerns in the artful adoption of “the physical machinery of transmission and circulation.”¹⁷

Two qualities unite these disparate uses of “community.” First, deep uncertainties about properties and edges: is community about location and face-to-face proximity, or does it consist of affective bonds that can be established by a text message as they are by an embrace? Does it encompass huge swathes of human experience, or is it at best a way to outline a formal arrangement of shared interests? Where is the lower bound—that is, when does a group of atomized individuals, a scattered and manifold accumulation of people and groups, transform into a community? Where is the upper bound—when does a sufficiently large or sufficiently self-

reflective community become a “society,” a “public,” a citizenry, or another communal apotheosis? (And when does a community become a crowd, a mob?) The second quality that binds all these diverse applications of “community” lies in how very nearly impossible it is to use the word negatively, with its many connotations of affection, solidarity, interdependence, mutual aid, consensus, and so on. As Lori Kendall succinctly says, it “carries significant emotional baggage.” Raymond Williams summarizes the baggage as its “warmly persuasive” tone—“it seems never to be used unfavourably.”¹⁸

Williams also notes that community seems “never to be given any positive opposing or distinguishing term,” though there are many negative oppositions, with new ones being added with each transformation of the word. A whole family of negatives developed when community appeared in its online guise. “Community” was presented as the integument of the “virtual village” produced by “webs of personal relationships in cyberspace,” in the words of Howard Rheingold, writing in the 1990s at the very dawn of the web.¹⁹ The atmosphere of free expression online, Rheingold went on, emphasizes the “fragility of communities and their susceptibility to disruption.”²⁰ So susceptible and fragile were the communities, in fact, that “community management” for online groups is a paying occupation with its own evolving best practices and theories today, with a cluster of related occupations such as moderator, community advocate, community evangelist, and social network facilitator. This latest, and in some ways strangest, application of the community concept draws on its history and “warmly persuasive” prestige to manage user behavior and activity on behalf of a given site’s objectives, which can mean keeping things on topic, maintaining a civil tone, or strengthening the “brand community” for the sake of marketing—online community, these days, being more often than not a business proposition. (In the 1998 revision to his landmark 1992 hands-on essay “Cyberspace Innkeeping: Building Online Community,” John Coate, the astonishingly patient community manager on The WELL, captured the change in the word’s use and value from the perspective of the old order: “assigning the mantle of ‘community’ to one’s enterprise before the fact as a marketing hook just serves to cheapen the term.”)²¹ The disruptions and points of fragility and vulnerability that a community manager works against capture the specific complexities of the idea of community as expressed over infrastructure

and code, as issues such as class struggle, anomie, and urban tumult offered points of departure for previous conversations. These are phenomena such as flame wars (ferocious and rapidly escalating arguments), trolling and griefing (strategic provocation and harassment for maximum chaos), sockpuppetry (a person using multiple pseudonymous accounts to create the illusion of support or bully others into submission), and, of course, spam.

Whether meaning bulk, junk, screeds, annoyance, or offense in content or quantity, “spam” is very nearly the perfect obverse of “community,” a negative term in both colloquial and specialized technical use that remains expansive and vague, covering a vast spectrum of technical and social practices with varying motives, incentives, actors, and targets. Both words have a productive blurriness that makes them into platforms for development and delineation—for individuals or collectives, markets or nonmarket values, appropriate and just ways to live. Whereas “community” stands in for our capacity to join one another, share our efforts, sympathize, and so on, “spam” acts as an ever-growing monument to the most mundane human failings: gullibility, technical incompetence, lust and the sad anxieties of male potency, vanity and greed for the pettiest stakes—the ruin of the commons for the benefit of the few. We go to community to discuss how people are generous, empathetic, and gregarious—and to spam to discuss how they are suckers, criminals, exploiters, and fools.

As the negative version of the concept of community on the early networks, spam was a significant force in that history as a limit test and provocation. It was a form of failure that helped to define the meaning of success, and it magnified the contradictions that lay within early online communities. It germinated in its many different forms wherever the attention of a group was gathered, whether as a discussion board, a Usenet group, an email thread, or later and more diffuse areas of collective attention such as the results aggregated by Google’s PageRank algorithm. With such diverse expressions and agendas carried in one capacious sack, the virtual community demands conversation, debate, and clarification, concerning both the new order produced by its operation and the old order it interferes with or obsolesces. So does spam, interfering with the interference and exposing contradictions within it. In Alexander Galloway’s phrase, the rise of the mediating network and its communities obliges us to find new “logic of organization”—because if we do not, the shear between our

old models and the new forms will become steadily greater and harder to bear.²² This shear can be easily seen in most of the domains shaped by information scarcity or secrecy, from journalism, publishing, and international diplomacy to the selective privacy of everyday life that Helen Nissenbaum terms “contextual integrity,” in which our friends, family, and professional domains operate in distinct contextual partitions and conversations.²³ Spam presents us with a vital and current—if negative—case of this new logic of organization in action, and it redefines our understanding of “community” online: how it works, and the paradoxes of that work.

The cardinal problem within the virtual community, the problem that spam exploits and aggravates, is the tension between infrastructure and expression, or capacities and desires. One manifestation of this tension—specific to an unusual group, and distinct from the more generic “community,” but a readily intelligible example—is what Christopher Kelty terms a “recursive public.” This is a public “vitaly concerned with the material and practical maintenance and modification of the technical, legal, practical, and conceptual means of its own existence as a public,” whose existence “is only possible through discursive and technical reference to the means of creating this public.”²⁴ What makes this example somewhat unusual is that Kelty is describing the culture of open source programmers: people for whom methods of talking and collaborating are something they can easily modify and transform and for whom such transformation is, in fact, a major part of discourse. They operate, first and foremost, from a position of reflexive self-awareness of the means and purposes through and for which they work. By contrast, many of the examples of spam’s provocation show us groups of people who have recursion thrust upon them. Akin to Dewey’s model of the “public,” which is called “into existence having a common interest,” with its existence consisting primarily in the ability to “locate and identify” itself, to cohere and mass attention, votes, and money against a perceived negative consequence²⁵—spam provides us with *reactive publics*. Obligated, suddenly, to be aware of the means of their own existence and to create deliberate mechanisms that blur between technical, social, political, and legal, these reactive publics must manage themselves and their infrastructure. On the way, they must ask and answer major questions: in whose name? By whose standards? By what methods?

Yes, you may have a “community,” with all the emotional baggage that term entails in its dense interlace of shared interest and solidarity, but your

community is also a particular arrangement of hardware and software. Your community needs electricity. It is rack-mounted servers, Apache, and forum software, perhaps funded by advertising revenue, volunteers, or corporate largess. (In the case of The WELL, for instance, it was that temperamental DEC computer and six modems in a leaking, poorly insulated office by the sea, a “community” that was always crashing or threatening to overheat.) Your community may be someone else’s property and subject to someone else’s laws. Perhaps, like GeoCities—or Imeem, Lively, AOL Hometown, OiNK, and so on, in the necrology of dead user-generated community platforms—your community will one day disappear with little or no warning, user-generated content and all. Until it evaporates like a mirage due to a change in business plan, how is your community to police and maintain itself, and how are the rules to be decided? Internet governance is the space of the *really different* (to take Lee A. Bygrave and Jon Bing’s term and emphasis). Community on the network is “an artifact that took shape as competing groups struggled in a new technological arena,” where the properties of the network dramatically change what is transacted on it.²⁶

These network properties themselves can change as well, at different scales and populations of machines and users. Spam’s appearance often demands responses on behalf of “us,” where “us” can be anything from “a few hundred people on the network we run ourselves,” to a vague polity of users on systems hosting millions of people around the world, to “Internet-using citizens of the United States.” These different scales create different possibilities for organization, complaint, redress, and the persuasive invocation of “community.” (Looking at the history suggests a physical comparison: we can draw distinctions between the quantum scale, the atomic scale, and the galactic scale, because they function under very different types of laws—the elegant simplicity of Newtonian physics breaks down at the edge of the atomic and subatomic, where the strangeness of quantum mechanics takes over, and is subsumed at the upper bound by the still-greater elegance of the cosmic scale, where we can set aside things like chemistry and electromagnetism and work from gravity and mass alone.) The uneasy balance between the group and the means of their existence as a group obtains at every scale we will see through the history of these diverse networks, but this balance and its modification take very

different forms in small professional organizations, massive public systems, and within and across the borders of countries.

Spammers crudely articulate this swaying balance between infrastructural arrangements and the concept of a community by exploiting it relentlessly. They work in the space where we are obliged to reflect on our technologies because they both underlie and diverge from our understanding and use of them. This tension is spam’s native environment. It is what distinguishes it from other forms of computer crime and why it plays such a role in the explication of communities virtual and actual: spammers take the infrastructure of the “good things” and push them to extremes. Spamming is the hypertrophied form of the very technologies and practices that enable the virtual communities that loathe and fight it. This nature is why it is so hard to define, so hard to stop, and so valuable to our understanding of networked digital media and the gatherings they support. It is this fact about spam that makes it *really different*. This difference is apparent at spam’s very beginnings, at the dawn of electronic mail.

ROYALISTS, ANARCHISTS, PARLIAMENTARIANS, TECHNOLIBERTARIANS

Here is the size of the world: one color (usually amber or green) and ninety-five printable characters—numbers, the English alphabet in upper- and lowercase, punctuation, and a space—available twenty-two lines at a time. As we say more, what we have just said drops off the screen. In some very early systems, when it leaves the screen it is gone for good, like a medieval sailor going over the cataract at the edge of the Earth. Everything is scarce: memory, screen space, and transmission bandwidth, which can be measured in characters. It can be hard for a contemporary person to understand just how tight the constraints of networked computing once were, but these constraints are important to understand if the genesis of spam on early networks is to make sense.

Consider the seemingly simple problem of editing text. In the summer of 1976, computer scientist Bill Joy wrote a text editor called “vi,” named for being the “visual mode” of another editor called “ex,” which allowed you to navigate around in a file and alter the text with key commands. This was hugely useful, because if you were working remotely over a modem, the screen would respond so slowly you couldn’t simply click

Spamming
is a
meta-
game.

around as we do now, cutting and pasting and adding words. Doing so would be an utterly frustrating exercise and an invitation to mistakes. It was easier to issue commands (“d5w”—for “delete five words”) and wait to see the results, keeping some degree of precision in the absence of immediate feedback. “The editor was optimized,” Joy recalled, “so that you could edit and feel productive when it was painting [updating the screen to reflect your changes] slower than you could think.”²⁷ (He also recalled that the same summer saw the arrival of the hardware for their terminals that allowed them to type in lowercase. “It was really exciting to finally use lowercase.” A *physical chip* was needed so you didn’t have to work solely in capital letters.) Except for those with special access to dedicated lines and exceptionally powerful machines, every character counted. The closest someone in the current developed world can come to this experience is trying to browse the Internet over a satellite phone connection, and even that is faster than what Bill Joy was working with.

Even with these enormous limitations, however, networked computing was already prone to the powerful experience of suspension of disbelief and what Sherry Turkle captured as the “crucible of contradictory experience.” It is the deep bifocal uncertainty of simultaneously being with dear friends, having a conversation, and being on a hardware and software stack transacted over a keyboard and a screen. With a key command or a few lines of code, another person can suddenly turn this infrastructure against you, and your screen fills, slowly, infuriatingly, with SPAM SPAM SPAM SPAM SPAM SPAM SPAM SPAM SPAM.

About that word: Spam, or SPAMTM, was first a food, whose associations with British wartime austerity made it a joke in a *Monty Python’s Flying Circus* sketch. Because it’s a joke whose humor relies on repetition, and because geeks love *Monty Python*, it became a rather tedious running gag in the early culture of networked computers. By the transitive property of being annoying, “spam” then became a word for other kinds of tedious, repetitious, irritating behavior, whether produced by a person or a malfunctioning program.²⁸ “In those days,” begins one of the many similar folk etymologies of slang on early chat systems, “. . . a lot of people who didn’t have a clue what to do to create conversation would just type in their favorite song lyrics, or in the case of people at tech schools like [Rensselaer Polytechnic Institute], recite entire *Monty Python* routines verbatim. A particular favorite was the ‘spam, spam, spam, spammity spam’

one because people could just type it once and just use the up-arrow key to repeat it. Hence, ‘spamming’ was flooding a chat room with that sort of clutter.”²⁹ In the bandwidth-constrained, text-only space, as you followed exchanges line by line on a monochrome monitor, this was a powerful tool for annoying people. You could push all the rest of the conversation up off the screen, cutting off the other users and dominating that painfully slow connection. (There exist a number of false etymologies, usually based on “backronyms,” coming up with words for which the term could have been an acronym, like “Shit Posing As Mail” or, in a delightful instance of Internet cleverness, the Esperanto phrase “SenPete Alsendita Mesâgo,” “a message sent without request.” Would that the network that unifies other networks were such a haven for the language that unifies other languages, but there’s no evidence for it.)

The word “spam” served to identify a way of thinking and doing online that was lazy, indiscriminate, and a waste of the time and attention of others. Collaborative games with far more complex implied and consensual rules, such as MUDs and MOOs (explained next), are where the mechanical gag of duplicating a line over and over came into its own as a social technology. MUD and MOO, these slightly embarrassing acronyms, need to be explained: a Multi-User Dungeon (MUD) is a text-based adventure game that could support many people at once. These very low-bandwidth virtual realities usually took place in a shared conceptual environment based on fantasy novels and role-playing games (hence the “dungeon,” as in *Dungeons & Dragons*). You read descriptions of things, places, and characters and typed in commands to engage with these things and talk to others in the game. You could grab gold coins, throw fireballs, get eaten by monsters, and do a lot of real-time textual hanging out with other players in the fantasy world. One thing you could not do is make deeper changes to the world, such as creating new rooms or artifacts, which is where MOOs come in.

The recursive acronym MOO stands for MUD Object-Oriented; an object-oriented programming language in this case enables users to author new things in the world and even change the operation of the world itself. (An “object-oriented” language makes it easy to swap modular components around without doing a lot of time-consuming low-level programming, letting you connect different pieces together rather than making things from scratch.) MOOs could run the same genre of environments

James
Turkle

as common MUDs, of course, with elves and talking skulls, but the greater possibilities for collaboration meant they tended to embrace larger and more complex social activities, such as distance learning and world building.³⁰ MUDs hosted a great deal of annoying, basic “spam” in the sense of dumb *Monty Python* emulation, but MOOs, with their explicit play between the game and the interaction between the users of the game, were a microcosm of the larger event of spam played out on a tiny stage.

→ An exemplary MOO for this capsule study of spam in (and as) a game is the famous LambdaMOO, a shared world that’s proved remarkably productive of academic analysis.³¹ A madly proliferating collaborative space, its ambience is nicely, briefly captured by Steven Shaviro: “You took a swim in the pool, grabbed a snack in the kitchen, read some books in the library, and fell through a mirror into a dingy old tavern. You entered an alien spacecraft, and fiddled around with the controls. . . . Close to twenty people are packed into this one space. . . . This one jerk keeps whispering dumb pick-up lines and sexual insinuations into your ear. Someone else dunks you under the water, just for fun.”³² All of this is taking place as scrolling lines of text. The torque of inside/outside the game—the discrepancy between the bodily experience of sitting still at your computer and typing, and the textual expression of a social fantasy of limitless resources in endless communicating chambers—is particularly severe here. Spamming takes advantage of the torque, the discrepancy, by creating objects and programs that can blow a hole through the impression of shared textual space (“You pick up the ashtray. / the_fury says”:) by using features of the apparatus which makes it possible (“SPAM! SPAM! SPAM! SPAM! SPAM! SPAM! SPAM! SPAM! SPAM! . . .”), like film trapped in the projector’s gate burning up from the heat of the lamp, as the screen fills with vacant white light (“. . . SPAM! SPAM! SPAM! SPAM! SPAM! SPAM! SPAM! SPAM! SPAM! . . .”).

→ Yet spamming means more, in the MOO and elsewhere, than just a prank, like an object coded to spam you when you touch it: it is at once an exploit in the system, a specialized form of speech, and a way of acting online and being with others. It acts as a provocation to social definition and line drawing—to self-reflexivity and communal utterance. It forces the question: what, precisely, are we doing here that spam is *not*, such that we need to restrain and punish it? As with search engines, which will develop

increasingly sophisticated models of utility and relevance partially in response to spam’s gaming of their systems at points of conceptual weakness, spamming demands higher-order debate from the social spaces in which it operates. In the case of MOOs, you cannot simply write a line of code to eject anyone who says “spam” more than once in a row from the server, because “spamming” could take the form of all kinds of statements and activities, some automated and others not. (The actions of everyone in a room in a MOO are visible to everyone else in that room as a line of text, so a spammer could write a simple program that inputs “kyle_m walks into the sliding glass door and falls down,” over and over, faster than anyone else can get a word in.) Before you make serious interventions into the rules governing a consensual space, you must be precise about what you are trying to stop, and you have to work with the users of the space to determine what intervention reflects your collective goals.

→ As Julian Dibbell describes, LambdaMOO developed a fourfold political structure around problems of misbehavior in general and spam in particular.³³ A rough breakdown of these positions closely approximates the four types of self-definition in the larger social history of spam and antis spam over decades, the topic of much of the rest of this chapter: royalists, anarchists, technolibertarians, and parliamentarians. (This typology, like all typologies, is a simplification and misses the nuances of some positions; it is still surprising, however, how many of the developments in the social response to spam in many situations clearly fit one of these four categories.) Royalists want the responsibility of dealing with spammers and other bad actors, as well as the means of enforcement and punishment, to remain in the hands of the “wizards,” the systems administrators and others whose access to the system grants them special powers over things like accounts, databases, servers, and the deepest layer of code. Anarchists want minimal interference from the “outside” in any form; problems within the game can be handled by the in-game community. “Technolibertarians,” Dibbell’s coinage in this context, hold that the “timely deployment of defensive software tools” will eliminate the need for wizardly intervention, collective action, or community governance. Governance itself is the goal of the parliamentarians, who want to regulate wizardly powers, community standards, and “mannerly behavior” through the familiar apparatus of votes, ballots, and governing bodies. There are variations on these forms—such

as the mocking term “process queens” on The WELL for those devoted to the endless communal hashing-out of issues in a constant process of therapeutic peacemaking³⁴—but those four will do for now.

Spam, writes Elizabeth Hess in her guide to life in LambdaMOO, “refers to generating so much text that its sheer quantity is offensive regardless of its content. Spam can be more than just offensive—it can be disabling for another user who has a very slow communications link to the MOO.”³⁵ Note that this definition does not necessarily mean automated, much less commercial, speech. “Spam” could be someone pouring out their heart in a public forum as well as automatic text generation. It is simply too much, variably and personally defined. Take the problem of “Minnie,” a LambdaMOO user whose “long, semicoherent screeds,” ““useful stuff incredibly encrusted in verbiage and weirdness”³⁶—which were also aggressively political about the arbitration and structure of LambdaMOO—were not automatically generated and posted but were nonetheless offensive by quantity. The petition to “toad Minnie [that is, forcibly and permanently remove her from the game]”³⁷ focused on “a long history of vindictiveness, paranoia, slander, harassment, lying, and cheating; but especially her compulsive spam.”³⁸ In other words, her character should be erased and her account closed for being too annoying and antisocial and for writing too badly and too much. Given that “spam” in this situation can include such exceptions and edge cases, how is the group to deal with it generally?

Both the royalist and anarchist solutions to spam were fairly simple: either the wizards should intervene out of *noblesse oblige*, censoring or eliminating players as appropriate, or the general LambdaMOO community should take some form of agreed-upon private action, possibly as vigilantes. The parliamentary solution took the form of petitions like “toad Minnie” mentioned previously, submitted to the complex arrangement of mediators, wizards, ballots, and voting that constituted “Lambdemocracy.” Finally, the technolibertarian solution was based on implementing tools like the “@gag” command, with which you could block out the activities (that is, the text of statements and the announcement of actions) of another user, silencing them for you and you alone. As Dibbell describes the technolibertarian position: “The presence of assholes on the system was a technical inevitability, like noise on a phone line, and best dealt with not through repressive social disciplinary mechanisms but through the timely deployment of defensive software tools. Some asshole blasting

violent, graphic language at you? Don’t whine to the authorities about it—hit the @gag command and said asshole’s statements will be blocked from your screen (and only yours). It’s simple, it’s effective, and it censors no one.”³⁹ (They will not be entirely invisible to you, though: other people, people you have not @gagged, will be talking about the malefactor’s activities, and you will see their conversation.) For many, solutions of this type—whether @gag or systemwide limits to the length of utterances—felt profoundly insufficient, even wrong. They marked “a final transfer of power from the community as a whole to the technology that was meant to serve it, and a naive denial of ‘the necessarily social and collective nature of human life,’” as Dibbell summarizes the opposing position in LambdaMOO.⁴⁰ Spam’s multifaceted character brings out a multifaceted response, a struggle to contextualize, define, and understand what is wrong about it and how it should be handled.

This effect, this demand, is massively amplified outside the tiny terrarium of a platform like LambdaMOO, on the temporal, financial, and social scale of the Internet and the networks that prefigured it. Spam operates in the indistinct areas between what a system explicitly offers and what it implicitly affords, between what it is understood to be and what it functionally permits us to do. In the four cases chronicled in this chapter, spam repeatedly provokes the question it raised in LambdaMOO. What are we going to do about it . . . and who are “we”?

THE WIZARDS

Being a wizard—as many systems administrators and hackers outside the world of games dubbed themselves—offers many pleasures, not least among them the promise of a direct correlation between knowledge and power, and the satisfaction of a pure meritocracy. If you can best another wizard, if you can fulfill your magical responsibilities, it’s because you studied harder, because you know more, because you went to the trouble of finding the secrets. You spent long nights over the tomes and grimoires learning the esoteric languages, patiently sat at the feet of more powerful wizards, trekked to remote sanctuaries, and cultivated your inborn talent. While lesser souls were drinking in the tavern, you worked deep into the night in what George Chapman, writing about the wizards of another era, called “the court of skill,”⁴¹ a domain lit by the constellations swinging

around Polaris and the glow from the monochrome monitor of your computer terminal.

Wizards are all about capability, and it is from capability that their authority derives. Their relationships with more traditionally vetted powers are often troubled. The kings of Tolkien's Middle Earth don't really know what to do with these bearded strangers who show up from the wilderness with their strange agendas and interests and would likely avoid them were it not for their undeniable powers. Undeniable: "Anyone who can do the work is part of the club. Nothing else matters," wrote Neal Stephenson describing "the ancient hacker-versus-suit [that is, wizard-versus-manager] drama."⁴² Gandalf does not crush Saruman because he's better at interoffice politics or writing grant applications; he is the greater mage. Jedi knights, another geek-beloved group kept at arm's length by the society they regularly save, have no patience for the interpersonal niceties of power (that's what the "protocol droids" are for). The only way to join their blanket-wearing ranks is to make your own lightsaber and spend a great deal of time doing unpleasant things on remote planets until you can use the Force. Either your lightsaber works or it doesn't, your spell throws a fireball or fizzles, your program runs or fails. We can talk all night, but your code is either going to compile or it ain't. The Order of Wizards in Middle Earth, the Jedi Council, the Linux kernel programmers: the group operates on "rough consensus and running code," an alliance based on knowing how.

There are many reasons why this perspective has such persistence. It is obviously satisfying to a group of very smart people who feel regularly misunderstood and disrespected by the nitwits who are inexplicably in a position to give them orders: they keep the whole operation afloat, but no one makes the wizard into a king—back to the lonely tower in the forest. (In his novel *Anathem*, Stephenson envisions an extreme form of this hierarchy, in which the IT professionals, technologists, and engineers are effectively a society to themselves, split off both from the monastic scientist-humanists and the distracted and confused populace at large.)⁴³ It has a refreshingly democratic quality, at least in theory. "The free software community rejects the 'priesthood of technology,' which keeps the general public in ignorance of how technology works; we encourage students of any age and situation to read the source code and learn as much as they want to know."⁴⁴ If you want to the join the elite, you just need to work

and learn, and the tools to do so will be freely provided. In fact, this last point is one of the great splits between wizardly hackers and the actual sorcerers of history. The latter are zealous hoarders of knowledge, creators of secret languages and allegorical codes and other esoterica. The former do things like circulate multigenerational photocopies of the restricted text of John Lions's magisterial *Commentary on UNIX 6th Edition*, a document with the complete source code of the Unix operating system, to get the material out of the closed world of Bell Labs.⁴⁵ (This behavior may also explain the often-noted attraction between certain areas of programming and the more extreme forms of libertarianism and Objectivism: they offer a fantasy of the pure meritocracy applied to the rest of the world, with the enormous relief of denying fate—your failure is your fault, your success the product and proof of your worthiness, intelligence, and hard work, and absolutely nothing else.)

IN THE CLEAN ROOM: TRUST AND PROTOCOLS
ELECTRONIC MAIL IS NO DIFFERENT THAN OTHER MEDIA; EACH GENERATES IT'S [sic] OWN SET OF CONVENTIONS AND RULES OF SOCIAL BEHAVIOR. THE ISSUE YOU'RE ARGUING FALLS INTO THIS AREA - IT REQUIRES THE ADOPTION OF SOME GENERALLY ACCEPTED CONVENTIONS AND SOCIAL RULES. THAT'S ALL YOU SHOULD BE PUSHING FOR - NOT THE ADOPTION OF SOME NEW MECHANISM FOR THE MACHINE. YES??

—Ed von Gehren, to MSGGROUP list, April 18, 1977

Just as it easy to forget how constrained computing used to be, it is easy to forget how small the community of the initiates once was. When ARPANET, the inter-network launched to connect all those mainframes together, could be diagrammed on one sheet of paper, each machine on the network had a copy of a single text file. This file, "hosts," mapped names to addresses and available functions so that you could see who had what you were looking for and connect to them to get it:

HOST: 128.89.0.45: CHARLEMAGNE.BBN.COM:
SYMBOLICS-3670: LISPM: TCP/FTP, TCP/TELNET, TCP/SMTP, UDP/TIME, UDP/
TFTP, TCP/FINGER, TCP/ SUPDUP, TCP/TIME, UDP/FINGER:

HOST: 128.95.1.45: KRAKATOA.CS.WASHINGTON.EDU:
MICROVAX-II: ULTRIX: TCP/TELNET, TCP/FTP, TCP/SMTP:

HOST: 128.103.1.45: CAINE.HARVARD.EDU: XEROX-
8010: INTERLISP: TCP/TELNET,TCP/FTP:⁴⁶

and so on. To make changes to this directory, you emailed a request to the Stanford Research Institute, which kept the canonical copy; administrators were expected to periodically check their hosts file against the master and to update it if there were any differences.

It was in this environment that Jon Postel wrote the 706th “Request for Comments” document “On the Junk Mail Problem,” in November 1975. Postel was a wizard if ever there was one, a largely self-taught programmer of brilliance with an enormous beard who was once refused entrance to an Air Force plane until he put on shoes rather than the sandals he wore year-round.⁴⁷ Postel was the authority in managing the system of domain names and numbers, which made resources on the network findable, and the editor of the Requests for Comment, or RFCs—circulating documents of suggestions, ideas, proposals, and rules in the community of network architects—from 1969 until his death in 1998. These points are worthy of emphasis because they have much to do with how spam eventually came into being. The predecessor networks to the Internet, and many of the basic elements of the network itself, emerged from contexts profoundly alien to the market and the compromises of democratic governance: these systems were built at the confluence of military contracting—effectively, a radically technocratic command economy—and academic noncommercial collegiality. The meeting of the Iron Triangle (the U.S. Department of Defense, the U.S. Congress, and the defense contractors) and the Ivory Tower and its nascent hacker ethos produced a unique environment. That moment of Postel’s lack of shoes is emblematic: an autodidactic hacker who got mediocre grades until he found the world of computers and plunged in, driven by enthusiasm and intellectual challenge, wearing his sandals to meet representatives of the “closed world” (to borrow Paul Edwards’s phrase) of the military, which had no shareholders or customers to please, needing only to deliver superior avionics technology. These two very different parts of a Venn diagram meet at the computer on the plane that Postel was helping to maintain. Or we could take the history of the RFCs, the preferred form of publication in the discussions on networking, whose informality—an invitation to discussion, not an authoritative *diktat*—was at the core of the computer networking project (as Johnny Ryan plausibly argues, they are part of the Internet’s

heritage of “perpetual beta,” in which projects are working drafts, the starting point for collaboration, rather than a closed and definitive product).⁴⁸ The first RFC was typed in a bathroom, so as not to disturb friends sleeping in the house; it’s hard to get less formal than that.⁴⁹ RFC 3 reads: “There is a tendency to view a written statement as ipso facto authoritative, and we hope to promote the exchange and discussion of considerably less than authoritative ideas.”⁵⁰ Anyone who has something worthwhile to contribute can get involved—that first RFC was written not by some mandarin of scientific expertise but by a graduate student. Postel was never appointed, never elected; he was simply, in the words of Ira Magaziner, the Clinton administration’s Internet policy advisor, “the person they trust.”⁵¹

Trust is the key word. The people contributing to the evolution of the early network all had either security clearances or the accumulated public reputation that accompanies any academic career, and they drew on the deep but distinct cultures of cooperation that evolved within both academia and the military. These cultures are deeply devoted to techniques of internal interoperation—the academics with their systems of citation, shared disciplinary discourse, coauthorship, and “boundary objects” for research collaboration; the military with its elaborate practices of instilled etiquette and hierarchy—and there is a kind of poetic symmetry in their shared project of getting different computer networks to interoperate. From this background, Postel wrote RFC 706, an engineering document discussing a speculative “junk mail” problem and recommended blocking the malfunctioning host if you were receiving “undesired” material—“misbehaving or . . . simply annoying”—until they fixed their problem. You almost certainly knew the person in charge of the malfunctioning host. You had probably met them face to face; you could just call them on a telephone and ask them to take a look at their machine and get it working properly. Problem solved. (As Abbate describes, ARPANET “fixed” a problem with an overload of network traffic early on by all the participants simply agreeing to throttle the amount of data they sent.⁵²) In another RFC circulated shortly after, Postel crystallized the culture of trust and collaboration with a famous recommendation for building protocols to make their robustness and interoperability paramount: “In general, an implementation should be conservative in its sending behavior, and liberal in its receiving behavior.”⁵³ That is, be careful to make sure your host sends

well-formed material but accepts all incoming data it can interpret—because the other hosts on the network are very likely producing something of value.

The great microchip fabrication assembly plants that put the silicon in Silicon Valley are built around the production of a strange environment—unique on earth—called the “clean room.” The room’s cleanliness is defined by the number of particles in the air larger than a micron, a micron being about a hundredth of the width of a human hair. A surgical operating theater has perhaps 20,000 of these particles in a square foot; a clean room has *one*, or none. The air is completely changed every six seconds as nozzles or fans in the ceiling blast purified air down through the grated floors. Objects from the outside world are wiped down with lintless alcohol-soaked cloth; humans are gowned and swaddled to keep them from contaminating the space. The institutional domain of these early networking experiments, the gathering of wizards, was a social clean room where they could experiment and build in a wide-open fashion because the only people on the network were colleagues—and often friends—who knew what they were doing.

Paul Edwards has described Cold War computing culture in terms of a “closed world discourse” built around a fundamental metaphor of *containment*—not simply containing the expansionism of the Soviet Union, but building systems such as SAGE, containing airspace in sensor matrices providing information for a closed loop of feedback-driven, cybernetic strategy, simulation, and game theory. This mesh of language, ideology, and hardware offered a way of managing the huge uncertainties and anxieties of Cold War geopolitics. SAGE, which never worked all that well (a closed world constantly leaking), “was an archetypal closed-world space: enclosed and insulated, containing a world represented abstractly on a screen, rendered manageable, coherent, and rational through digital calculation and control . . . a dream, a myth, a metaphor for total defense, a technology of closed-world discourse.”⁵⁴ At the deepest roots, computer networking comes from Cold War concerns—Paul Baran, the engineer who developed the fundamentals of packet-switching networks, had begun with the problem of developing a communications system that could continue to operate after a nuclear attack, so the United States would have second-strike capability—but ARPANET and the projects and groups it hooked together were about international interoperability, what we can term an

“open network discourse,” with the fundamental metaphor being *trust*, for users and hosts alike.⁵⁵ If, as Edwards states, the essential Cold War computational vision was that of uncertain and unpredictable forces, from the USSR to the proliferating strategic options of the future, enclosed in a circle of American power, data collection, and information processing, ARPANET’s intrinsic image is the network graph of nodes and vertices strung over hastily sketched geographical space, with each node tagged with its particular identity. I say “hastily sketched” because the geography, when it appears at all, is the merest outline, the edge of a landmass—what is significant is the breadth of the nodes: a diverse family of machines, projects, and countries sharing a common protocol. “Membership is not closed,” says RFC 3, the manifestation of this idea as a discourse. “Notes may be produced at any site by anybody and included in this series . . . we hope to promote the exchange and discussion of considerably less than authoritative ideas.”⁵⁶ If the exemplary moment of closed-world computing was the SAGE system, an exemplary moment for open network computing was a hookup in June 1973, when ARPANET was connected by a satellite link to a seismic installation in Norway, and from there by landline to University College London, and from thence to researchers all across the United Kingdom. Make the networks work together, so the people can work together. (With reference to a more recent work by Edwards, we can include this as an instance of “infrastructural globalism,” as we can, in a darker and more temporary register, the planet-scale botnets that come later in spam’s history.)⁵⁷

All of this development was taking place, in other words, in a bubble of trust and shared understanding, with people vetted by the systems of academic and military advancement and review to make sure they were all “on the same page,” on the same master diagram of the network, and sharing a sense of etiquette and appropriate behavior, both on the network and among themselves. After thirty years of rhetoric of the Internet as everywhere nonlocal; disembodied, virtual and cyberspatial, it can be difficult to remember how local, relatively speaking, early networked computing was. It was not the electronic frontier but a fairly small town, populated almost exclusively with very smart townspeople. They had a small-town paper, *ARPANET News* (also available, of course, on the network), whose first issue came out in the spring of 1973. It carried notices of local events (“Theme: Information: The Industry of the 70s?”), touchingly personal

notes on meetings (“the atmosphere was purposeful, prosperous, confident”), and “RESOURCE NEWS,” amounting to a classified ad section, offering computing capacity and open projects (“Owners of large data bases who would like to store them on the DATACOMPUTER and use its data management facilities should contact . . .”).⁵⁸ They were neighbors, in a sense, as well as colleagues, and their collective experience—their experience of collectivity, sharing inclinations and ideas over the well-worn keys of their ASR-33 Teletype keyboards—informed the way they developed protocols and practices. Some months after the first issue of *ARPANET News*, in September 1973, computer scientist Leonard Kleinrock used his ARPANET connection in Los Angeles to get back the electric razor he’d left at a conference in Brighton. He knew his friend Larry Roberts would probably be online (logged in at a terminal in Brighton to a mainframe in Cambridge) and could retrieve it and hand it off to someone going to Los Angeles. He reached across the transcontinental, trans-Atlantic network as though leaning over a fence, shouting across the street.⁵⁹

When many of the core concepts and protocols for electronic mail were forged in the online discussion called MSGGROUP (or MessageGroup or Msg-Group), a conversation conducted over ARPANET, they were built in this social clean room. Steve Walker, starting the discussion “to see if a dialogue can develop over the net,” captured exactly this convivial atmosphere: “to develop a sense of what is mandatory, what is nice and what is not desirable in message services.”⁶⁰ Even if this discussion produced too much material for the taste of a few, they could cope: “mail is easily deleted,” wrote Dave Crocker to the group a few messages later, “and so ‘junk’ mail is not really a serious problem.”⁶¹ The actual protocols and the communal mores and norms were being worked out side by side, often in the same document; the rules of conversation and the code for message handling were mutually co-constitutive—design and values, in a loop.

For example, there was the problem of message headers. If we are to have electronic mail, how much information should be in the “envelope” of the message—the part on top, before the body text? There were many different programs for writing, sending, and displaying messages, and they handled messages differently based on their header data. Everyone involved in the discussion was entirely capable of writing his or her own mail

systems from scratch to reflect their personal preferences and beliefs. How are messages to be dated? If your mail reader gets a message with the date formatted in a way it doesn’t recognize, it may not display it in chronological order, or at all. Messages might be displayed in mangled or difficult-to-read formats as your system tried to cope with a bunch of weird header data from someone else. Should people’s names be associated with their computer mailbox address, or should names be portable across the network? What about messages with multiple recipients? These practical issues of standardization led into a still-thornier territory of desires and constraints, expressed in design: if these messages were to be like letters posted in the mail, then they should have a short header, like the text on an envelope—who sent it and to whom, from and to addresses, a date, perhaps a little handling data. If they were to be more like electronic communications, they could carry much more data of value, with a message bearing the route of its own transmission, a picture of the network useful to its technicians and architects, and material about the sender to help you frame the conversation and know how to best reply (if you know what programs someone has available, you can give a better answer to a technical question). Every message could be a kind of encyclopedia about its milieu. Verbose or lean?

Though the word “spam” is nowhere mentioned in their archives (the *Monty Python* troupe had done the skit only a few years before, and there wasn’t much of an online populace yet to produce the jargon of popular culture there), they were already wrestling with one of the dimensions of spam. In an environment where attention and bandwidth were scarce, what was the acceptable degree of complexity that people could be allowed to put on the network? Who gets to define what counts as noise, as a waste of resources? Proposals ranged from the simple and minimal, through “redistributed-by” and “special-handling” and “character-count” header elements, all the way to a joke by Bob Chansler that stacks 957 characters of header material (including “Weather: Light rain, fog,” “Reason: Did Godzilla need a reason?” and “Machines: M&Ms available but almond machine is empty”) on top of a one-sentence message.⁶² This struggle was carried out over the MSGGROUP exchanges, in the design of programs, and in the RFCs. RFC 724, “Proposed Official Standard for the Format of ARPA Network Messages,” reveals the stunning intricacy behind such a seemingly trivial matter as message headers—and Jon Postel’s blistering,

point-by-point reply on the MSGGROUP list shows the interlacing of technical design issues and questions of social and political consequence, values, and desires, particularly his reply to section D of the first part of the RFC, "ADOPTION OF THE STANDARD":

The officialness of standards is always a question at every level of at every level of [sic] protocol. To my knowledge no arpanet protocol at any level has been stamped as official by ARPA. The question of official protocols brings up the question of who are the officials anyway? Why should this collection of computer research organizations take orders from anybody? It is clear that it is in everyones [sic] interest to work together and cooperate to evolve the best system we can.⁶³

We can work together; it's in no one's interest to get a bunch of brass and bureaucrats who don't understand the issues involved to start validating every step. "To make a big point of officialness about one step may make it very hard to take the next step," Postel continued. This is a system emerging not from the market's incentives or from the state's command, though both forms of impetus funded and informed it, but through what Yochai Benkler calls "commons-based peer production," with a truly exceptional group of peers sharing ideas, circulating material, and collaborating on improvements.⁶⁴ This origin is why such a fantastically esoteric dispute, feuding over header field data, is of real consequence to us. It is an exhibit of the performative ontology, in Andrew Pickering's term, that shaped the production of email and social computing generally.⁶⁵ To put it crudely, a group of intelligent peers who trusted each other built systems and standards in which smart, trusted elements operate on the same level. Anyone, machine or human, who can generate properly formatted messages (packets, datagrams, commands, RFCs) can contribute. Bad parts of contributions can be discussed and corrected. Be conservative in what you send, but liberal in what you receive.

An *ontology* is an understanding of the world, a sense of how it is arranged and of the state of things. Blanket generalizations about "human nature" are ontological statements. So are library classification schemes, which arrange sets and subsets in the order of knowledge—*this* is a part of *that* and therefore should be managed in a way that reflects their relationship.⁶⁶ To be able to distinguish that a given thing is real and another is imaginary, fake, potential, or virtual is to speak in an ontological mode.

Pickering means something quite complex and nuanced by "performative ontology," with specific reference to his work on British cybernetics in the 1950s and 1960s, but there is one aspect of the idea that has bearing on the discussion here: there are objects, systems, machines, and practices that simultaneously express ontological assertions and show how they could be applied in practice. They make a specific sense out of the world by the way they function and how we function in relation to them. They don't derive from axiomatic claims about the nature of existence, necessarily, but they are, as a practical matter, statements about the way things are, and they stake their functionality on these statements. They "work" as ideas, as well as working as things. The network of networks being built by the people on ARPANET and other computer networks, the eventual framers of the dominant Internet protocols, was an eminently practical system that was also an argument of a kind—for the open-ended capacity for conversation and interoperation between people and between computers and other hardware. We can evolve the standards among ourselves, and the things we produce with those standards will be open to unforeseen participants and uses.

Those unforeseen uses, the immanent social complexity in the system, were already appearing. There were events such as Leonard Kleinrock getting his razor back, legends of a few drug deals done over the portion of the network in Northern California, and much unauthorized conversation about science fiction. And then there was the Vietnam War and the antiwar movement. Prior even to the MSGGROUP, among the wizards at MIT in 1971 there was a case of someone exploiting system privileges, in a way that offers certain precedents to spam, to speak out against the war. MIT was the hub of the CTSS mentioned earlier—the Compatible Time-Sharing System for remote computer access, a separate network from ARPANET. Multiple users on distant terminals—about a thousand in all, both at MIT and other institutions, among them Robert Taylor at the Pentagon with his three-terminal suite—could access a mainframe computer and use it to run programs. Due to the work of Tom Van Vleck and Noel Morris, two MIT programmers, they could also use a form of messaging, a system for forwarding files to particular users, that predated email.⁶⁷ Entering "MAIL F1 F2 M1416 2962" (where "F1" and "F2" represent parts of a filename and M1416 and 2926 are specific

identifiers—a “problem number” identifying a group and a number identifying a particular programmer) would send a message to Van Vleck, and “MAIL F1 F2 M1416 *” would send a message to everyone on a given project team (in this case, the CTSS programming project itself). For structural reasons, those in the CTSS programming team had a unique privilege: they could type “MAIL F1 F2 * *” and send a message to everyone using the CTSS system at all locations.

“I was mighty displeased one day, probably about 1971,” writes Van Vleck, “to discover that one of my team [a sysadmin named Peter Bos] had abused his privilege to send a long antiwar message to every user of CTSS that began THERE IS NO WAY TO PEACE. PEACE IS THE WAY.” Van Vleck “pointed out to [Bos] that this was inappropriate and possibly unwelcome, and he said, ‘but this is **important!**’” “There is no way to peace” is a quote from A. J. Muste, the Christian pacifist and dedicated anti-Vietnam War activist; 1971, of course, is a period of protests over university-military engagement, two years after the formation of the Union of Concerned Scientists at MIT. Bos used his privilege as a systems administrator to turn this theoretically telephonic one-to-one or one-to-many medium into a broadcast system, one-to-all—and to turn this group of people using a mainframe into the possibility of a politically engaged community of the like-minded. Van Vleck and Morris had created an elegant and prophetic hack for the addressing of files in a set of time-sharing computer accounts, but they had also created an audience heavily weighted toward exactly the group—engineers on defense contracts—that a morally passionate antiwar programmer would want to reach and convince.

This story should be more complex: a new means of communication, a high-minded endeavor, a chilling effect. But the administrator’s position over the system, with mastery of the code and the knowledge and the access privileges to change it, was still that of the informal control of the system, creating and banning users and altering the capacities and structure of the network. Of course, these sovereigns are in turn subjected to the authority of the universities, corporations, and governments that employ them—often an uneasy balance of power. As there is a network of networks, so there is a hierarchy of hierarchies in the earliest online gatherings, a problem expressed most succinctly in response to the next protospam message.

INTERRUPTING THE POLYLOGUE

I have never seen any ARPA statement on proper or improper use of the network; I have always just used the “reasonable person” principle. I assume that the military types within ARPA would probably like to restrict access to the network as tightly as they could, and that the academic types would rather that there be free access.

—Brian Reid, to MSGGROUP list, May 3, 1978

What rules actually applied to a statement on ARPANET? We have seen the dispute over how much header data was relevant on a system where every character counted. But everyday life is filled with complex and contextually specific kinds of speech, from gossip to advertising and from political debate to intimate confidences. If the register of ARPANET messages was initially somewhat formal—a conversation centered on how to improve the very tools of conversation—it didn’t stay that way. There were antiwar messages, like the one by Bos—though not broadcast so widely and indiscriminately. There were various life-changing event announcements: “I get tons of uninteresting mail, and system announcements about babies born, etc.,” wrote Richard Stallman (then addressable as RMS at the MIT-AI computer)—who would become arguably the most important person in the creation of the open source software movement.⁶⁸ When Don Woods wanted to get the source code for Will Crowther’s computer game Colossal Cave Adventure so that he could improve it, he emailed “crowther” at every host computer on the network, as though he was calling every “Crowther, W.” in the phone book. (Woods eventually found Crowther at Xerox’s research center in Palo Alto, got the source, and built it out into the text fantasy Adventure, the first of the great narrative-exploration computer games.)⁶⁹ Everyone loved to argue. Fast friendships formed among users who had never met face to face—it was an ongoing open-ended “polylogue” in which there was no telling how a topic might evolve, in an atmosphere of informal trust largely among equals, “a select group of people (high school kids regardless!)” carrying on in a strange mix of a high-level seminar, a dinner party, and a correspondence circle.⁷⁰

For some, this was already too much chit-chat, too many unimportant messages to evaluate and delete—and there were more worrisome issues of speech as well. In 1977, a bogus robotics company in New Jersey, Quasar Industries, announced the latest “Domestic Android,” a robot that could do various household tasks and “equipped with a full personality

[can] speak and interact in any human situation.” This claim was of interest to some of world’s foremost authorities on artificial intelligence, who happened to be on ARPANET.⁷¹ It was transparently a twentieth-century Mechanical Turk, and several participants in MSGGROUP began to collaborate on debunking this press conference hoax—“A reporter from *Business Week* magazine is going to Quasar tomorrow morning . . . I want him to take with him a person who would be able to expose [sic] the thing for what it is.”⁷² But was it the place of these scientists and engineers on a publicly funded utility to be sleuthing around and using potentially defamatory speech? “We are using US Government facilities to possibly put in a poor light the activities of an ‘honest’ (and we must assume this) industrial corporation,” wrote Einar Stefferud and Dave Farber, often voices of calm reason on the MSGGROUP list. “This could backlash on all of us including ARPA.”⁷³ This statement spawned the full range of responses, from thoughtful agreement to anger at the perceived demand for self-censorship, in a debate that captured the spectrum of ARPANET’s self-reflection immediately prior to the first indiscriminately broadcast commercial message on a computer network: the first instance of what would become spam.

That first protospam message was sent to addresses on ARPANET on May 1, 1978, by a marketer named Gary Thuerk and an engineer named Carl Gartley, and it provoked a conversation whose implications continue to resonate—a family dispute among the Olympians that starts to explain why we are at war on the plains of Troy today.⁷⁴ The list of 593 addresses for this advertising message included: ENGELBART@SRI-KL, Douglas Engelbart, co-inventor of the computer mouse and key figure in human-computer interaction; POSTEL@USC-ISIB, Jon Postel; FEINLER@SRI-KL, Elizabeth “Jake” Feinler, who ran the organizational Network Information Center (NIC) and, with an executive decision, created the domain name structure of .com, .org, and the rest; and others. (Not all the 593 received it; the addresses, typed in by hand, spilled over into the body text of the message.) The message came on behalf of the DEC, which had been founded by two engineers from Lincoln Laboratory who took the ideas and technologies for interactive computing from the SAGE project and built the iconic Programmed Data Processor, or PDP, series of machines—time-sharing computers beloved by early hackers (the first graphical video game, *Spacewar!*, was created on a PDP-1 by MIT stu-

dents). DEC had a strong business presence and established customers on the East Coast of the United States but had much less presence on the Pacific side, and it was Thuerk’s idea to take the printed directory of all ARPANET addresses, pick out the ones belonging to West Coast users, and let them know that DEC was having an open house. The message was an ad for the new computers being released by the Digital Equipment Corporation: “DIGITAL WILL BE GIVING A PRODUCT PRESENTATION OF THE NEWEST MEMBERS OF THE DECSYSTEM-20 FAMILY . . . WE INVITE YOU TO COME SEE THE 2020 AND HEAR ABOUT THE DECSYSTEM-20 FAMILY AT THE TWO PRODUCT PRESENTATIONS WE WILL BE GIVING IN CALIFORNIA THIS MONTH.” The DECSYSTEM-20 series were the first computers to ship with “FULL ARPANET SUPPORT”; clearly this feature would be significant to the users of ARPANET. They were exactly the people who would want to know.

This message exposed the rift within the concept of “community” on the network. It is the split between community as communication for the sake of shared interests, that is, the community that in its most facile form exists as a market or a target of products, an institutional structure with its sociological roots in the *Gesellschaft*, and the community of “relationships and values,” of *Gemeinschaft* (with all the baggage those two categories in turn bring with them).⁷⁵ The former articulation of community, a “family” of users to mirror the DECSYSTEM-20 FAMILY of machines, had its defender in the reply to the DECSYSTEM advertising message from Major Raymond Czahor: “THIS WAS A FLAGRANT VIOLATION OF THE USE OF ARPANET AS THE NETWORK IS TO BE USED FOR OFFICIAL U.S. GOVERNMENT BUSINESS ONLY.” It was a contractual and industrial arrangement, based on the complementarity of work. ARPANET was not to be used for outside advertising because its attention, bandwidth, and hardware were the property of the institutions that created it for their communication and shared interests.

This argument was not entirely true, of course. There were the personal announcements, the running conversation on science fiction that became the SF-Lovers mailing list, the games: “Who hasn’t used net mail for personal communication? Who hasn’t spent time playing some new game over the net? Be honest,” wrote Debbie Deutsch of BBN in response to the Quasar imbroglio and the suggestion that everyone speak from their

official positions as a matter of course.⁷⁶ The liberty to write personal correspondence, discuss Arthur C. Clarke novels, and stay up all night playing Adventure hinged on keeping these activities quiet and emphasizing the official mandate. If the DEC ad was inappropriate, why was solving word puzzles in a text adventure a suitable activity? (The SF-Lovers mailing list had in fact been shut down for consuming too much bandwidth; Roger Duffey, the moderator, convinced the ARPA managers, not untruthfully, that it was providing useful practical cases for dealing with large discussion lists.)⁷⁷

A more nuanced position, with the possibility of shared values as well as interests, came from within the user base in Elizabeth Feinler's May 7 message, following Czahor's official statement. She started framing the discussion in her opening disclaimer: "The comments are my own. They do not represent any official message from DCA [Defense Communications Agency] or the NIC." If the network were in fact strictly for government business, everyone involved would simply write from their official position, but there are two networks, and she—a critical administrator for the official network of machines and standards overseen by the Department of Defense—was speaking as a person in the unofficial network, the social graph of the people using the machines. "The official message sent out," Feinler wrote, "asked us ('us' being network users) to address the issue ourselves. I personally think this is reasonable and think we should lend our support or otherwise be saddled with controls that will be a nuisance to everyone involved." The "official message," which Feinler had distributed on Czahor's behalf, is distinct from the group, "ourselves," the "us ('us' being network users)" to which she also belonged. Her import was clear: let's come to an agreement and handle this ourselves so that we can keep our side of the network relatively free of "controls that will be a nuisance." Did the users really want to invite outside authorities in? Feinler's was a parliamentary position, generating an internal rule structure to mediate between "us" and what she called "the powers-that-be"—to govern ourselves in a compromise with our larger context and prevent further incursions into our space.

This position's character as a compromise was amplified by the response from no less a figure than Richard Stallman, writing without having seen the message yet (still at MIT, he was on an East Coast host and therefore saw only the argument about it on MSGGROUP): "It has just been sug-

gested that we impose someone's standards on us because otherwise he MIGHT do so. . . . I doubt that anyone can successfully force a site from outside to impose censorship, if the people there don't fundamentally agree with the desirability of it."⁷⁸ Stallman makes the most basic form of the anarchist argument—"anarchist" as Dibbell means it: not a stand for advertising, spam, or a laissez-faire attitude as such, but for self-regulated standards and values that emerge from the network and are enforced there by the "network users" rather than being imported, imposed, or in dialog with the network's context. This is anarchism in the Kropotkinist mode, in which the "customary law"—our standards, the laws that develop among "the members of the tribe or community"—keep "cordial relations" operating smoothly and functioning best without outside intervention of any kind.⁷⁹ Stallman followed up the next day, though, revising his argument with tongue in cheek: "Well, Geoff forwarded me a copy of the DEC message, and I eat my words. I sure would have minded it! Nobody should be allowed to send a message with a header that long, no matter what it is about."⁸⁰

None of these replies quite answered the question raised by John McCarthy, the computer scientist (then at Stanford) who coined the term "artificial intelligence": "The DEC message about the 2020 demonstration was a nuisance. . . . Nevertheless, the announcement was appropriate, and, while the audience was somewhat random, it is probably no more so than the mailing list that brought me a paper copy of the same announcement. Query: leaving questions peculiar to ARPANET aside, how should advertising be handled in electronic mail systems?"⁸¹ Rich Zellich kicked back the idea in circulation at the time that mail users could specify "items of interest" and then would receive "community bulletin board type items" broadcast to all hosts—a kind of keyword-based message filtering far before that approach became a common spam strategy.⁸²

"Saying that electronic junk mail is a no-no on the ARPAnet doesn't answer the question," wrote Mark Crispin from the same lab as McCarthy. "I shudder to think about it, but I can envision junk mail being sent to people who implement Dialnet [an experimental protocol for computer systems to connect to each other over ordinary telephone lines, sidestepping ARPANET], and no way it could be prevented or stopped. I guess the ultimate solution is the command in your mail reading subsystem which deletes an unwanted message,"⁸³ which raises the question of "what

ought to be included in the ‘self’ of self-regulation”—solely the body of individual users, who should take charge of deleting messages they don’t want? The protocol developers, who should create a keyword filter in anticipation of the arrival of the marketers and carpetbaggers? Or the ISPs, interested private companies, and national governments, who will build these networks?⁸⁴ Who will speak for the polylogue?

Spammers, reliable as rain finding holes in a leaky roof, entered these socially uncertain and definitionally problematic spaces created in the “clean” environment free of commercial speech and its pressures. When the available attention to capture exploded in size, we can see the questions raised here, still unanswered, opening into far broader issues. Spammers began to appear and to become what we now recognize, by operating in the corners created by regulatory arguments where liberty, trust in users, and domains of authority transect unprecedentedly powerful reproduction and transmission technologies.

The antispammers gathered to meet them there.

THE CHARIVARI

COMPLEX PRIMITIVES: THE USENET COMMUNITY, SPAM, AND NEWBIES

People who are buying computers, especially personal computers, just aren’t going to take a long time to learn something. They are going to insist on using it awfully quick.

—J. C. R. Licklider, “Some Reflections on Early History”

At the opposite end of the spectrum from the wizards are the newcomers—the newbies, n00bs, greenhorn beginners—with whom every culture of skilled professionals, every craft culture, is forced to find methods of assimilating, indoctrinating, and adjusting. Ted Nelson, when developing the specifications for Xanadu, the original “hypertext” system, presented the “ten-minute rule”: “Any system which cannot be well taught to a layman in *ten minutes*, by a tutor in the presence of a responding setup, is too complicated,”⁸⁵ which is a convenient rule of thumb for learning an interface—but how long to learn the social rules, the mores and norms, the ways of acting and working appropriate to that environment? Nelson did not have to concern himself with this issue because the complete Xanadu system would have baked all of Nelson’s particular social rules

about things like quoting, attribution, creativity, intellectual property, and modes of speech into the architecture of the system itself. You wouldn’t have to worry much about learning how to behave because there would be very few ways in which one could possibly behave incorrectly in his tightly designed network; the system knew for you. The computer networks that developed out of ARPANET and related projects in universities had no such preestablished social harmonies; they were built in the trustworthy clean room as experiments and platforms for further invention, and they left a lot of vacant space for the development of social rules and criteria for good and bad action. (The struggle over headers marks one of the uncertain zones where code specification ended and social adjudication began.) They left a lot of latitude open to figure out what these systems were suited to—what they were *for*. That open country of adoption and adaptation went double for Usenet.

Usenet was the ARPANET of outsiders. In 1979, as the conversation on MSGGROUP turned to starting a new list, METHICS, that was devoted to working out the code of ethics appropriate to electronic mail, three graduate students began to create the “poor man’s ARPANET” for those who wanted to be online but weren’t at schools that could land a Department of Defense contract or afford to buy the (very expensive) equipment to join the official network. University computer science departments mostly had massive machines running the Unix operating system, and the students jury-rigged some existing hardware and utilities into a network that would find files on one machine and copy them to another over telephone lines using improvised modems. When you logged into your account on the machine in your department, you saw the new files that the computer had copied from the other machines on the network. You could write and post a file—a message—to circulate to them in turn. That new file, saved on one computer, would be copied to another that it connected to, and from there to all the computers connected with it, until everyone on the network had a copy waiting to be read. You could write a follow-up message, echoing the text of the original, or send a private message to the sender, creating threads of conversation. The students expected that their system would perhaps encompass a hundred computers at most and receive a few new files a day about Unix computing. It would be a grove for the conversation of the Unix wizards—but within four years of the students distributing a version of the Usenet code (on tapes, by hand) to other enthusiasts in the summer of 1980, there were

a thousand computers on the network. Intending to start a specialist's colloquium, they had accidentally launched a society.

Part of the original vision of Usenet was that it would be limited by the infrastructural constraint of local calling zones. The computers would have to be connected to others close enough that they wouldn't have to pay long distance rates, keeping the membership limited. (The first Usenet connection was established between Duke University and the neighboring University of North Carolina.) A loophole was found: if you made the computer-to-computer calls that circulated files into a normal, and vaguely unspecified, item on a departmental telephone budget, you could underwrite a potentially global network without anyone ever noticing. More remains to be written about the role of graduate student poverty and parsimony in shaping the hacker ethos, which obliges you to repurpose scavenged equipment, invent workarounds, and maximize limited resources and how this ethos shaped the networks built with those resources. The open-ended, conversational character of ARPANET, exemplified by the RFCs, was even more emphatic on Usenet, where early users built their own modems (earning access with what we could call "solder equity") and invented bureaucratic cover for the machine-to-machine exchanges—and worried about excessive, unnecessary data. Rather than local clusters, where the shared interest was implicit in Unix and proximity, Usenet rapidly turned into a global mechanism for message propagation, and people on Usenet in an Australian university didn't have much use for a message from New Jersey about someone selling a dinette set—a message that famously made its way around the world, propagated from machine to machine, a subject of hilarity and anger.⁸⁶ As more computers were added to the network, choosing conversations—that is, having subscriptions, or "newsgroups," so that you could sort out the messages you wanted to receive—became increasingly significant. Here we can already see some of the distant outlines of spam as we know it, which was to be invented on Usenet about a decade from the moment a baffled and furious user at a terminal in Melbourne read about some furniture for sale 10,000 miles away.

The anger sprang from the imbalance Usenet created: it cost nothing for someone to post a message at their local machine, from whence it would be circulated to Usenet, but it cost other users something to receive it, in money, in disk space, in opportunity cost, and in attention. From the

perspective of, say, Piet Beertema and Teus Hagen at the Center for Mathematics and Computer Science in Amsterdam—the people who actually had to answer for the consequences if anyone noticed those departmental telephone bills—it cost the equivalent of six U.S. dollars a minute to pull the new Usenet articles off a machine in New Hampshire.⁸⁷ Their sheer volume could take ages to arrive over a 300 baud modem, and then what were you to do with the messages? There was only so much room for storage, so the administrator was obliged to delete messages (or dump them to an archival tape, the only reason we have access to most of these conversations now), meaning that as the volume grew, you might miss all the new material if you didn't log in for more than a day or two. It would be gone to make way for yet newer material, and you could well end up trying to catch up on a conversation whose incitement you'd missed, so competition for time on the terminals became still fiercer. What were all these messages eating up the resources?

Steve Den Beste wrote in 1982: "I thought [Usenet] was supposed to represent electronic mail and bulletins among a group of professionals with a common interest, thus representing fast communications about important technical topics. Instead it appears to be mutating into electronic graffiti. . . . [I]t is costing us better than \$200 a month for 300-baud long distance to copy lists of people's favorite movies, and recipes for goulash, and arguments about metaphysics and so on. Is this really appropriate to this type of system?" The polylogue on ARPANET had included science fiction talk, ethics, and debates about the Quasar robot, but always under the shadow of the official remit of the Department of Defense, and shaped by the personalities of the professionals who were constructing it. Usenet had no such restrictions (what will graduate students *not* talk about?). "Trivia questions about Superman and Star Trek, and how to use Stravinsky's RITE OF SPRING to retaliate against disco loving neighbors, and why cooking with animal fat will kill you young," Den Beste summarized, going on to advocate that people with such nonprofessional chitchat take it to the burgeoning network of BBSes, which were "run and maintained by private individuals, so any subject is open game." On Usenet, though, where the bills are paid by universities and corporations, "one would think that a little bit of professionalism would be appropriate."⁸⁸ What does professionalism mean on this new medium? And what if, rather than being merely unprofessional, the

people on Usenet who weren't engaged in behavior appropriate for a university setting were actually inventing a new kind of discourse and a new form of sociality?

Bryan Pfaffenberger has already chronicled the extraordinary struggle between different kinds of actors over what Usenet was to be and where its values lay.⁸⁹ The internal friction of “users of the network” versus “the powers-that-be” who owned the machinery that we saw on ARPANET was here amplified dramatically into an out-and-out war for control, complete with threats, sabotage, and a scorched-earth future for the network if compromise could not be achieved. You could create a new newsgroup on your computer—a new flow of topic-specific messages, identified with a period-separated hierarchical name such as “net.chess,” for discussing your favorite endgame problems—but that did not mean that any of the other system administrators were obliged to carry it (that is, to copy messages in that newsgroup automatically from your computer to theirs). A person in charge of one of the major sites, from which many others copied their news, could effectively censor a newsgroup for everyone who depended on that site, if he or she desired. To the existing wizardly self-descriptions was added the moniker of “baron,” for the powerful administrators whom the conversation had to please if it was going to be distributed, and many of the serfs were not happy with this arrangement. The baron among barons—although he always behaved with pragmatism, humility, and thoughtfulness, he wielded enormous social and technical capital—was Eugene Spafford, who maintained the canonical list of accepted Usenet newsgroups.

Did the Usenet system need to comport itself relative to its semi-official status, supported by the phone budgets and disk space of university CS departments, or did it owe a higher loyalty as a nascent, global, decentralized communications system to the unconstrained free speech and liberty of thought that it made possible? The self-anointed “democrats,” fighting quite bitterly with the “feudal” system, certainly thought the latter: “We hold these Truths to be self-evident, that all Humans are created equal, that they are endowed by their creator with certain unalienable Rights, that among these are Unhindered Communications, Unregulated Exchange of Ideas, and Freedom of Speech, that to secure these rights the Usenet is instituted on networks of the world,” as Dave Hayes, in full Jeffersonian mode, wrote in his manifesto on the liberties that this new system was ethically bound to provide.⁹⁰

Pfaffenberger sums up the position of the defenders of the most total model of free speech as permitting any speech except that which actively interferes with Usenet's ability to function—that is, that which would restrict the speech of others. Hayes articulates this precisely, showing us the social complexities of the environment in which spam was to flourish by listing his breakdown of what is and is not “net abuse”:

Examples of net abuse:

- Posting articles that directly crash the news server that is to inject the post into the news stream.
- Posting articles that contain control messages designed to crash news servers.
- Directly hacking into a news server to disable it.

Examples of things that are NOT net abuse:

- Volumnous [sic] posting
- SPAM
- Excessive crossposting
- Off topic posting
- Flaming or arguing⁹¹

“SPAM,” at this point, was something quite socially specific while still encompassing a whole field of behavior. In fact, everything on the list of “NOT net abuse” except flaming could qualify as “spam” in this period's understanding of the word—posting lots and lots of text (“volumnous”), duplicated across lots of different newsgroups (“crossposting”), which weren't necessarily relevant to the post (“off topic”). Spamming was taking up more than your fair share of that expensive and precious data transmission every night as departments paid to pull in megabytes of data over their modems and consuming the scarce disk space with duplicate text so sysadmins would need to delete the whole batch of messages sooner. Your desire to tell a joke or sound an alarm or spread a chain letter across the largest possible audience would lead you to post the same material across many different newsgroups (“but this is **important!**”). The frustration felt by readers, following the excitement and anticipation of the poll every morning as the new stuff came in, as they noticed the same message again and again taking up room across different newsgroups, was what meant that you had engaged in spamming. (At this point, the offense of spam was distinct from “commercial self-promotion,” which had a separate entry on the list of violations of Usenet civility.)

been intermittent Usenet chain letters, electronic versions of postal messages propagated by credulous users, but this was something new: a massive simultaneous broadcast across many discussions by an individual directly, in search of money. He posted in waves, sometimes separated by a few days: the 17th, the 23rd, the 24th, and up to the 30th. "Poor College Student needs Your Help!!:-(" he began, outlining his difficulties before he got to the pitch: "I want to ask a favor of every one out here on the net. If each of you would just send me a one dollar bill, I will be able to finish college and go on with my life. . . . If you would like to help a poor boy out, please send \$1 (you can of course send more if you want!!:-)" to "Jay-Jay's College Fund," a PO box in Nebraska.⁹⁵ The note closed with a prescient request: "PS. Please don't flame me for posting this to so many newsgroups"—a request that reflects either great gall or naïveté.

The crucial detail on Noha's message was the suffix of the email address under which he operated: JJ@cup.portal.com. Portal.com, the Portal Information Network, was one of the first private companies to offer Internet and Usenet access to customers as a subscription business rather than something distributed to students or employees, breaking a key element of the tacit social agreement. (A gradual shift toward moving Usenet news around over Internet connections rather than university computers on telephone lines was one of the factors eroding the control of the major sites and their baronial sysadmins.) Noha's action was in all respects disturbingly connected to the extra-network context of postal systems, currency, and business. Did the sysadmins of Portal owe their loyalty to the rough consensus of "a bottom-up democracy" and the culture of Usenet, or to the business that employed them—itsself beholden to investors and customers? Even by the standards of the most vociferous defenders of free speech, Noha's post was tough to defend as a worthy expression.

The parliamentary reaction to Noha faced some of the same questions of governance and community raised on ARPANET but in a far less academic and trustworthy environment. Who wants to bring in the territorial government? Is there a way we can regulate ourselves? And who will be in charge of those decisions and their enforcement, after so much noise and so many megabytes spent fighting over the role of central authorities versus communal flame attacks? ("Actually, more to the point, does anyone want the FCC or the U.S. Mail snooping around Usenet trying to figure out how to use his postings in court and incidently [sic]

whether they shouldn't be exercising more visible [sic] control over such a visible underground communications system as Usenet?")⁹⁶ To again use Dibbell's coinage, there was a "technolibertarian" wing that advocated setting aside all this messy social stuff in favor of the "timely deployment of defensive software tools"—you didn't need the Department of Justice or some kind of Usenet star chamber if you had well-developed "killfile" technology to keep you from seeing the messages you didn't want. Many advocated making things so unpleasant for the administrators of Portal.com that they would take the appropriate sovereign action—which, wilting under all the flames, they did, but in an unprecedented manner: "We have received a number of inquiries about JJ. . . . If you view these questions as the burning issues of our time, you might wish to call JJ yourself. You can reach him as: Rob Noha (aka JJ) 402/488-2586."⁹⁷ If you want a well-regulated Internet, do it yourselves.

SHAMING AND FLAMING: ANTISPAM, VIGILANTISM, AND THE CHARIVARI

The Portal.com sysadmins' delegation of responsibility was a prophetic act, particularly in what it provoked. The antispam social enforcement that began in earnest with Portal's posting seems like a vigilante movement in many respects: self-organized by volunteers, at times acting in defiance of the law, with the explicit goal of punishing bad actors about whom "there was nothing [the authorities] could do" (to quote Portal's official statement regarding their communication with law enforcement).⁹⁸ "Vigilante" is a bad analogical fit in one respect, however, because the enforcers never moved to outright violence. Their methods were prankish, noisy, mocking: collect calls at all hours, "black faxes," ordering pizzas for collect-on-delivery payment, sending postage-due mailings and masses of furious, profane, and abusive email, illegal computer exploits, and harassment of parents, coworkers, and friends of the malefactor. Alleged spammers were surrounded by a constant wasp swarm of threats, trolling, name-calling, and other abuse—almost the mirror image of their violation of the social mores with technically enabled rudeness. Such a response to spam is much closer to the symbolic form of vigilantism called the *charivari*.⁹⁹

"A married couple who had not had a pregnancy after a certain period of time," writes Natalie Zemon Davis in *The Return of Martin Guerre*, "was a perfect target for a charivari. . . . The young men who fenced and boxed

with Martin must have darkened their faces, put on women's clothes, and assembled in front of the Guerre house, beating on wine vats, ringing bells, and rattling swords."¹⁰⁰ The charivari was turned against anything the community found unnatural, including marriages between the young and old, widows remarrying during the mourning period, adulteries, and excessive spousal abuse. "With kettles, fire shovels, and tongs," goes a description of a Dutch variant, "the mob hurries towards the culprit's house, before whose door soon resounds a music whose echoes a lifetime does not shake off."¹⁰¹ "[She] was disturbed by a hubbub in the distance," writes Thomas Hardy, describing a Dorset variation on the charivari. "The numerous lights round the two effigies threw them up into lurid distinctness; it was impossible to mistake the pair for other than the intended victims. . . . [T]he rude music . . . [and] roars of sarcastic laughter went off in ripples, and the trampling died out like the rustle of a spent wind."¹⁰² The "rude music" of banging pots and pans and yelling voices—"discordant voices" is the contemporary meaning of "charivari" in legal parlance—and the march around the house, the sarcastic laughter, the intensely public humiliation and harassment: so the charivari worked in the present case. "Rob Noha / 8511 Sunbeam Lane / Lincoln, NE 68505 / (402) 488-2586 / Phone books are such wonderful things," wrote a user two days after Portal posted Noha's name and number. "Can someone in Lincoln drive by and get the license numbers at his address?" Just as suddenly, the pack disperses, "like the rustle of a spent wind": the charivari is reactive, offering no constructive plan beyond humiliating and shaming the offender, and dies away as quickly as it flares up.¹⁰³ (Faced with a more confident antagonist, with the audacious shamelessness of chutzpah, the charivari quickly exhausts its repertoire—as shall be described.)

The charivari form will recur in many different places and different modes, many intimately intertwined with spam, and a bit more deserves to be said about it here at one of the first appearances of the form to frame its history and clearly distinguish it from vigilantism. What is this form, precisely? What I am calling the charivari is a distinct network-mediated social structure, a mode of collective surveillance and punishment for the violation of norms and mores. It evolves from a distinct folkway of early network culture, one to which numerous names have been attached by the recent critical literature—above all the idea of "Internet vigilantes" or "viral vigilantism," which nicely bookend (in 1996 and 2011)

the extent of the analysis. David R. Johnson's "Due Process and Cyber-jurisdiction" provides the 1996 take, looking at the evolving process of dispute resolution online with its uneasy balance between the sysadmins, who can enforce terms of service, and users, who can migrate to other access providers. "For example, when spamming (sending multiple, intrusive, and off-point messages to newsgroups) became a problem in the Internet, the offended users took direct, vigilante action—flooding the offending party's mailbox with hate mail."¹⁰⁴ Johnson is framing that action in the context of the more effective technical control exerted by sysadmins, such as the ability to cancel accounts and block messages from particular addresses. The wave of flames, the inbox full of messages, is a transitional stage of "summary justice (or self-help vigilante revenge)"¹⁰⁵ that will become less significant than sysadmin methods under the aegis of a developing due process.

Meanwhile, in 2011, as argued by Matthew Fraser, the enforcement of social order by large groups of distributed network users had made a shift from harassing those who acted badly on the network to harassing those who acted badly in life, with mobs gathering by "viral" distribution of videos and reports to shame perpetrators of minor problematic acts—"viral vigilantes."¹⁰⁶ These are, obviously, quite different categories of action, migrating from on-network tools (flaming) to attack on-network individuals (spammers and the like), swamping them with mail, to a mix of on- and off-network tools (news stories and the wide distribution of personal information, telephone calls, pranks) to shame in-world individuals for a variety of in-world offenses. (As explained in the following section, the project of antispam actually encompasses both approaches from a very early moment.) Though as a concept it seems like a natural and intuitive fit, vigilantism is a rather misleading point of comparison, and the charivari concept offers a more nuanced set of comparisons for understanding what's happening in many antispam projects as well as other cases of collective social punishment on the Internet.

Although the idea of "vigilantism" is technically quite diverse, virtually all applications of the term and the idea are connected with violence, and not simply in the sense of hate speech or damage to reputational capital, but in that of people being hanged, shot, beaten, or, at best, run out of a district with the surety of death if they return. Whether we turn to "frontier justice" and lynch mobs, the Klan in the American South, the

Colonial-era “Regulators,” the “silent courts” of the Holy Vehm held in the forests of the German Middle Ages, Mormon Avenging Angels, or peasant self-defense bodies like the Big Swords Society of the Qing Dynasty, the particular extralegal nature of the vigilante is that of breaking the state monopoly on violence and basing their authority on the threat of force with the promise of furtherance of justice (situationally defined, obviously; by no reasonable standard could we find the Klan just, but as far as enforcing barbaric community norms goes, they fit the model). Vigilantism has a complex relationship with aristocratic vendettas, peasant revolts, and the mythic power of redemptive and retaliatory violence. It is not only that the rich historical, political, and connotative baggage of the vigilante makes it a bad fit for the present case. It is that a far better fit exists.¹⁰⁷

The “charivari” described previously is an archaic mode—what a lawyer, M. Dupont, described in an 1832 pamphlet as “conjugal charivari,” the archaic folkway for maintaining norms that largely concerns itself with marital misbehavior, whether it takes place in the town of Corneille in the 1830s; Artigat in the sixteenth century; the “butcher’s serenade” in London; skimming, wooseting, or kettling in rural England; or shivaree and white-capping in the United States and Canada.¹⁰⁸ This action is distinct from *political* charivari, the publicizing of an abuse that sidesteps the legal and governmental process of grievance in favor of a public and viciously satirical and angry display. What we are discussing here is a kind of complex political performance that is built out of mocking laughter, insults, masking and anonymity, and the mingling between active crowds and passive audiences. It is a performance that is at every turn tangled up with the question of who is allowed to participate in political discourse and the extent and role of the law and its representatives. This model does not sound unfamiliar, at this point—for Amy Wiese Forbes, in her analysis of the charivari, it is “broadly the popular politics of satire in public space.”¹⁰⁹ Flaming and shaming, from 1988 to 2011, are not extrapolitical vigilante moves but the assertion of a different kind of politics, in which the network’s population at large participates directly through jokes, pranks, verbal abuse, public shame, and privacy-violating crowdsourced surveillance, rather than through the mediation of sysadmins, legislators, or police officers.

A few more remarks are needed on the structure of the charivari before we return to 1988 and Usenet gathering to yell at Noha. The charivari,

both on- and offline, from the July Monarchy to antispam vitriol and 4chan’s lulz-driven crusades in the present day, draws much of its efficacy from renegotiating the boundaries between public and private life. Both the conjugal and political charivari make a public racket around a private home, drawing attention and pressing upon the private citizen the crushing awareness that *everybody knows*—while spreading the word to those who don’t know yet. From Noha, and Canter and Siegel (whom you will meet in the next section), and past the turn of the millennium—as you will see in the case of Rodona Garst—the antispam charivari locates the private in the public and puts as much light on it as possible. Inevitably, there is the disclosure of personal phone numbers and home addresses that have been tracked down. Both charivaris are connected with a form of humor—the hilarity and laughter of mockery and lulz—that helps to push the boundaries of acceptable behavior and to lead to a convenient blurring of active crowd and passive audience. On the Paris streets, you could be participating by lighting an effigy afire or by laughing along with everyone else; online, you can join into what looks, in one light, like an attack, simply because you want to participate in the joking—the puns and nicknames and pranks and memes. There is a crucial dimension of pleasure to the antispam charivari that is not trivial. Finally, the charivari, while sometimes delightful and always transgressive (whether involving dogs dressed in ecclesiastical purple driven through the Paris streets, or antispammers circulating and mocking stolen photographs of the spammer Garst) is not ultimately constructive. It may riot, but it does not build beyond periodically establishing areas of public freedom. It is a party, in the sense of catcalls, costumes, and purposeful vulgarity, rather than the sense of a vanguard or political party. And when the fun runs out so does the charivari, without any formal systems left in place for managing the next problem—which brings us back to May 1988.

Activity around JJ/Noha declined over the next few weeks into the boring and confusing aftermath of copycat and counterfeit attempts at replicating the appeal, the whole affair driven off-screen as it went down the discussion thread and further into the past. There had been a brief flurry of activity, charivari glee and skill sharing regarding Noha—many of the messages announcing action, including those forgeries that purported to come from Noha and used a child’s don’t-do-this reverse psychology to attract more abuse, included their own instructions: “maybe i

should put him in my L.sys file with a dummy name, set the time field to Any0300-0400, and queue up some work" (that is, a method to automate calling Noha's number over and over in the early morning hours)—but things simmered down.¹¹⁰ Usenet returned to trading anecdotes, sharing knowledge, joking, and bickering, the moment of self-reflexive panic slipping into memory. Six years later, as spam began in earnest—in name, in shape, and in response—someone would caution against extreme technical responses, counseling calm in the face of its provocation with the reminder that "we survived Rob Noha."¹¹¹ What they faced in 1994, though, was not a mere pseudonymous scammer but a couple of smart, highly public carpetbaggers intent on founding a new order in which they stood to make a great deal of money.

FOR FREE INFORMATION VIA EMAIL

THE YEAR SEPTEMBER NEVER ENDED: FRAMING SPAM'S ADVENT

It was almost exactly six years after the Jay-Jay message and sixteen after the DEC advertisement on ARPANET, on May 11, 1994, that the reminder was posted on Usenet: "we survived Rob Noha." It was implicitly promising that we will also survive this: the first real spam, a commercial, automated, and indiscriminate business proposition, the first message identified as "spamming" contemporaneous with its use—the law firm Canter & Siegel's "Green Card Lottery- Final One?" This was the place where "spam," the word, made its migration from the diverse suite of meanings it had earlier to the meaning it holds now. The old meaning of "spam," a term encompassing the violation of salience—that whatever you were posting, be it duplicated, way too long, saturated with quotes, contextually inappropriate, had broken the implicature of network conversation that held that you should be in some way relevant—simply hopped to the grandest and most ubiquitous and egregious violation of salience yet. Not simply off-topic relative to a newsgroup, it reflected a deeper culture clash—a misunderstanding of the whole point of the network. Noha, in retrospect, became the point at which something should have been done.

There were other, less significant precedents: the "COWABUNGA" attack (a nonsensical, relentless posting across many newsgroups); "Global Alert For All: Jesus is Coming Soon," a classic "but this is **important!**" violation of university admin privileges; the furious autoposting of "Serdar

Argic," who inserted a variable, baffling diatribe about "the Armenian genocide against Turks" into any newsgroup discussion featuring the word "Turkey," whether nation or poultry; and the "MAKE.MONEY.FAST" chain letter. What connected Noha's message and Canter & Siegel's was a thread of money, distinguishing it from the weird verbiage, rants, and piles of duplicate text that had previously been "spam."

The network itself had changed profoundly in the intervening six years—changes in scale, in values, in the meaning of "the network" itself. ARPANET, begun in 1969, had been decommissioned in 1990, the end of the formally academic lineage of networked computing. (The academic research and military wings of the network had parted ways in 1983, when the latter split off into MILNET.¹¹²) The National Science Foundation (NSF) had created a high-speed backbone system, running the Internet protocol suite, that linked regional networks together, launched in 1988 as NSFNET: a prodigiously growing venue for adoption of the Internet for supercomputers and individual PCs alike. Traffic on the backbone doubled every seven months, and many of the new users weren't computer scientists or programmers. The demographics of what was now becoming the dominant Internet were changing, with NSFNET and the proliferation of personal computers outside office parks and academic labs accelerating a shift in the kind of people spending time online, exemplified by Usenet's negotiations and by a little network called The WELL.

The crises of control within Usenet discussed earlier had blossomed into a full-blown social and technical transition. The problem of who got to decide what was bad speech, spam, and egregious self-promotion led to a project that simply sidestepped the barons and the Backbone Cabal in two directions. First, a new news hierarchy was built that started from people's personal computers and avoided the canonical lists of "acceptable newsgroups"—and which spread like wildfire, thanks, among other things, to its inclusion of groups such as .sex, .drugs, and .gourmand. This new hierarchy combined with the move from the initial model of Usenet, in which big computers dial into other big computers and a few major universities are pipelines to many others (called UUCP, for UNIX-to-UNIX Copy Protocol), to a system that could use the Internet instead and thus didn't need to please the sensibilities of a handful of sysadmins (called NNTP, for the Network News Transfer Protocol). The bottleneck of the barons was now looking more like the Maginot Line, outflanked

by the opening of new spaces of movement as the Usenet user base grew in great leaps, but the complex social problems to which netiquette was a provisional answer continued, and worsened—another chapter in what Pfaffenberger terms “a long process in which contesting groups attempt to mold and shape the technology to suit their ends.”¹¹³

In the Bay Area, The WELL, which germinated out of some loaned software and Stewart Brand’s astonishing social clout and interpersonal skills, had been running strong for years. Unlike earlier networks in which the emergence of social behavior and discussions not specific to computer science had been accidental and problematic, The WELL’s reason for being was open conversation among its population of hippies, hackers, futurists, Deadheads, and genial oddballs. It was a system whose ethos sprang not from scientific research collaboration and the formalization of resource sharing between universities but from the “Community Imperative” of communes—“the need to build and maintain relationships between people and to preserve the structure that supported those relationships.”¹¹⁴ Though The WELL remained a small affair, relatively, a business with subscribers numbered in the thousands and a corner bodega’s cash flow (especially striking when compared to America Online, which began the same year and soon had millions of subscribers), it attracted a huge amount of journalistic attention and became one of the major models for bringing a diverse population of newbies into the system. Fred Turner perfectly captures both the ambience and the impact of The WELL with the concept of the “network forum,” which fuses the “boundary objects” and the “trading zones” of science and technology studies—the ways people can retain the allegiance and useful particularity of their original discipline and community while developing new means of collaboration with others: “Ultimately, the forums themselves often become prototypes of the shared understandings around which they are built.”¹¹⁵ The forums were a classic instance of what Gregory Bateson, one of Brand’s mentors, called a “metalogue”—a discussion that is also an example of what’s being discussed: in this case, how to share knowledge and have a good time online together.

Although it provided one of the great instances of the value of what would be called “social” in the online services business—users helping and entertaining each other—The WELL also operated under an unusual regime of “community management” closer to ARPANET than life on the open web. To use The WELL, you were logged under a consistent

name that others could get to know, in a primarily local network where many of the participants in the Bay Area eventually met face to face, with the constant oversight of moderators deeply committed to using conversation, cajoling, and personal interaction to work out the social kinks. (The sometimes seemingly endless and occasionally exasperating debates over decision-making were known as “the thrash.”¹¹⁶) It was a group with such powerful social integument that they offer one of the very few instances of *positive spamming*. Notorious, devoted, flame-warring WELL member Tom Mandel started the discussion topic “An Expedition into Nana’s Cunt,” a loathsome and extended attack on his ex-girlfriend (who was also on The WELL). As the argument about whether to freeze or delete the topic dragged on, other users began bombarding the topic with enormous slabs of text, duplicated protests, nonsense phrases—spam—to dilute Mandel’s hateful weirdness in a torrent of lexical noise, rendering it unusable as a venue for his emotional breakdown.¹¹⁷

These evolving, struggling networked communities were all living under the looming shadow of a change to the Internet’s noncommercial status. While for-profit computer networks existed and thrived, from Portal and The WELL to CompuServe and the leviathan that was America Online (AOL, which is now, decades later, reduced to building an empire of content spam, as discussed in the final chapter), they operated largely on their own islands. The Internet remained noncommercial and was still mostly funded out of institutional subscriptions and government contracts. If you wanted to move data across the NSFNET backbone, you couldn’t be making money from it by selling access, and therefore the NSF, not the individual service provider, decided the terms and acceptable behavior for the network’s users. There had always been commerce on the local networks, from the BBSes and The Well to CompuServe and others, for people to sell electronics and other goods—recall the infamous New Jersey dinette set—in the community’s oversight. As in a medieval town, there was a marketplace in which certain forms of commerce and exchange could happen, and outside those precincts social life was governed by other orders, covenants, and agreements. (Ripping people off happened, essentially in public, and could really be done only once—a method of restricting bad actors that continues, bizarrely, in the workaday world of professional spammers and credit card thieves.) But starting in 1993, the NSF was slowly rewriting the rules by letting money-making

Internet Service Providers (ISPs) run their own networks and the gateway machines that connected them. The question of when and how all these people and their attention and activity was to be monetized grew with the avalanche of early adopters—which brings us to the September that never ended.

Because Usenet was initially based almost exclusively on university campuses—the kind of places that had big Unix machines sitting around—every September a wave of freshmen and new grad students were added to university rolls and started hanging out in the computer lab, and these newbies had to be educated in the rules, netiquette, and norms of Usenet. In March 1994, AOL enabled what it called the “Usenet feature.” Its massive subscriber base, which had been functioning inside the enclosed space of their proprietary network, were abruptly turned loose onto Usenet. America Online gave no indication that Usenet was anything other than another one of their properties to which their terms of service and user expectations applied. These new users weren’t in any way bound by the old dispensation of sysadmins and the common ground of university affiliation and computer savvy. The grand process of Internetworking—the bridging of all the different domains and their different protocols and populations into the Internet—sometimes resembled nothing less than the abrupt introduction of species from different ecosystems into the same space, like ships discharging bilge and ballast water from one ocean into another and bringing families of organisms, which had been developing into their own intricate coevolutionary niches, into startling proximity. From the perspective of long-term Usenet denizens, who had been patiently hammering out rules of behavior and public order and liberty for more than a decade, it was the beginning of a steady invasion from the vast galaxy of newbies to what was then still a relatively stable little planet on which even the constant conflicts were part of a shared lexicon of debate and a longstanding set of social tensions. It was the beginning of a constant state of siege, an “eternal September” soon memorialized by, among others, the “alt.aol-sucks” newsgroup. Wendy Grossman summarizes the typical experience of two antipodal oceans meeting: “AOLers would post hello messages, old-timers would follow up with vituperative diatribes about reading the FAQ without telling them how to get it, and other old-timers would pile in and take up more bandwidth and create worse useless noise than the AOLers’ messages did in the first place.”¹¹⁸

Two imminent events, yet to come at the moment of the green card lottery, need to be mentioned so that the whole charged environment is assembled around the birth of spam as we now know it. The conclusive and total commercialization of the Internet’s infrastructure and the broad adoption of the web both served to open the network up to a new population that was far larger than any it had known before. The first event took place on New Year’s Day of 1995. The ban on commercial activity on NSFNET was rescinded, with the Internet ceasing to be the property of the U.S. government as it had been since the first message was sent from Palo Alto to UCLA in 1969. The second was more gradual. Bear in mind that all of the discussions, arguments, and dramas thus far were taking place in the largely all-text and often intimidatingly technical environments of Usenet, Internet hosts, BBSes, and so on. Tim Berners-Lee, at his workstation at the world’s largest particle physics research lab in the early 1990s, was working on tools for displaying pages on the Internet that could be marked up with pictures and typesetting and clickable links to other pages. It didn’t get much attention at first, but by 1993 the Marc Andreessen-led Mosaic web browser had been built and Berners-Lee had founded the World Wide Web Consortium (W3C). Networked computing was about to become far easier to use for many more people, a vast influx entirely free of preexisting intellectual commitments to the ethos of computational resource sharing, research, noncommercial use, and radically free speech.

This was the distribution of forces in May 1994: the movement away from computer science professionals to the general population, the end of the noncommercial order and the consequent shift in power from sysadmins to lawyers and entrepreneurs as social arbiters, the clash between different sets of established values of use and discourse on different networks suddenly conjoined, and the broad awareness of networked computing in the population of the developed world already expressing itself as growth rapid and enormous enough to create a wholly different kind of space. A phase transition was underway, and in this poised and expectant moment, people logged into their Usenet accounts on the morning of April 12, 1994.

THIS VULNERABLE MEDIUM: THE GREEN CARD LOTTERY

It is important to understand that the Cyberspace community is not a community at all.

—Lawrence Canter and Martha Siegel, *How to Make a Fortune on the Information Superhighway*

In the early 1990s, in response to the lack of diversity in nationalities granted green cards, U.S. immigration policy added a lottery. To enter, you merely needed to send a postcard to the right address, but there was a lot of money to be made for the less scrupulous lawyers in the immigration business by presenting themselves as necessary middlemen who could help with the “paperwork” of registering for the lottery. Laurence Canter and Martha Siegel, a married pair of immigration lawyers in Arizona, were well poised to take advantage of the opportunity offered by the lottery. They needed an advertising platform that was “pretty much the domain of techies and people in academia . . . [who] happened to be foreign born” and therefore interested in U.S. jobs and green cards, and Canter “had been a longtime user of, what we’ll call the precursor to the Internet, the online services such as CompuServe.”¹¹⁹

Their preparations to take advantage of this new possible audience showed both an awareness of what they were doing and a naïveté about the charivari they were soon to unleash. They had tried “a smaller posting [on Usenet] prior to the one that made all the news”—in fact, a couple of them—and had experienced the wizardly repercussions of an angry service provider, so they spoke to their ISP, Internet Direct, about the demands they were about to place on the system. “Our concern initially was that their servers would not be able to handle it because we knew there was going to be huge amounts of traffic generated—both from people’s interests and people flaming. And they were really eager to tell us that their servers could handle it, no problem.” A programmer in Phoenix wrote a very basic program (a script) for them that would take a given message and post it to every newsgroup they wanted—in this case, very nearly all the newsgroups on Usenet. “I remember executing this script,” Canter said in an interview. “I think it was towards the evening when we were doing it—and just watching it run through its cycle. . . . It took maybe an hour or two to post to all of the existing newsgroups at the time, and when it was done, I remember just kind of wondering what was going to happen next.”¹²⁰

On April 12, 1994, users of roughly 6,000 active newsgroups logged on to find a 34-line message titled “Green Card Lottery- Final One?” from “nike@indirect.com (Laurence Canter).” “Green Card Lottery 1994 May Be The Last One! / THE DEADLINE HAS BEEN ANNOUNCED,” it began, going on to briefly explain the lottery, the ineligible countries, and

the “STRICT JUNE DEADLINE. THE TIME TO START IS NOW!!” It ended with all of their contact information, including mailing address and telephone and fax numbers—a detail as telling as Noha’s “.com” domain address. Rob Noha, who knew he was trying to pull a small charity scam, used an assumed name and a PO box. Canter and Siegel’s inclusion of their contact information made clear that what they were doing on Usenet was legitimate, even normal. It was marketing: of course they wanted potential clients to be able to reach them. (In this transition, we can see the turn that Charles Stivale discerned in early spamming practices on Usenet, the “escalating mores” that go from “playful” to “ambiguous” to “pernicious,” as the pranks and conversational domination move into a different zone with far more problematic intentions and consequences.)¹²¹

It also suggests that for all their sophistication, they had vastly underestimated the scale of their provocation. For a few hours, there was a precious confusion—a relic of the last moment before spam, and advertising generally, became omnipresent online—as people tried to parse the announcement as a meaningful newsgroup post (“We get LOTS of stuff over rec.aviation from Europeans and other non-US nationals looking for ways to train and/or work in aviation in the US”).¹²² Then the discussion turned to confirmation (“I gave Canter & Siegel a call. Believe it or not, they actually did post this and apparently are proud of it”) and retaliation.¹²³ The issue was not simply commercial speech and irrelevant content. It was that these offenses were being perpetrated to an extent that actually rattled the infrastructural foundations of Usenet and then defended in tones of outspoken flag-draped righteousness quite distinct from the clueless shame or slinking pseudonymity common to prior infractions. Canter and Siegel’s script had generated a unique copy of their message for each newsgroup, rather than “cross-posting,” which marks the message as a duplicate so that someone who’s seen it in one newsgroup can mark it to be left out of others that are to be polled. Usenet as a whole still operated within fairly tight limits of bandwidth, memory, and cost. Two individuals in Arizona had just enormously overconsumed the pool of common resources.

On newsgroups such as news.admin.policy, where much of the ad hoc governance and response of Usenet was worked out, the four political tendencies of anarchists, monarchists, parliamentarians, and technolibertarians

came up as before, but some got much less of a hearing. "People always seem to choose this solution since they are prepared to put up with the costs involved," a user wrote in response to the default technolibertarian filtering suggestion, the @gag-ignore-delete-killfile approach. "I for one am not. I don't appreciate getting _the same_ message in every single group I subscribe to. Kill files [intercepting and deleting the messages you don't want] are for pacifists."¹²⁴ The parliamentarian approach circled around form letters to the Board of Professional Responsibility in the state of Tennessee, with which Canter and Siegel were affiliated despite being based in Arizona. These letters all had to tread an awkward line, however: "While technically not illegal, this is a violation of the usage guidelines for the network that is offensive, unethical and should be censured."¹²⁵ The ultimate nature of the Canter & Siegel pitch, an unnecessary application for a fee, was unethical, but they had not broken any laws with their mass Usenet posting, and the numerous codes of conduct and netiquette FAQ files maintained online in the wizardly/anarchist mode did not add up to a Hippocratic Oath outside the network. The parliamentarians could not bring immediate results by calling on the law and were almost immediately drowned out by the banging pots and overheating fax machines of the charivari—aiming, as before, at making life a misery for both the offenders and the wizards at their service provider.

"Let's bomb 'em with huge, useless GIF files, each of us sending them several, so as to overwhelm their mailbox and hopefully get these assholes' account canceled by their sysadmins," wrote a user on alt.cyberpunk, about a day after the green card announcement (a very early instance of the distributed denial of service attack—a technique for overloading servers that plays a major role later in this history).¹²⁶ By that point the Canter & Siegel account on Internet Direct was already overwhelmed. The ISP's service to all its users slowed to a crawl and often went down entirely as the mail server crashed repeatedly under the traffic of complaints, hate mail, flames, and indeed, large files sent to swamp the system. Canter later estimated that "there were 25,000 to 50,000 emails that never got to us" cached on a hard drive as Internet Direct canceled their service and tried to do damage control.¹²⁷ The sysadmins were also receiving a very high volume of flames; their email addresses were often listed along Canter and Siegel's in posts for those wishing to make complaints.

Within twenty-four hours their account was closed and any email sent at that point would not do any good beyond further hampering Internet Direct.¹²⁸ "How about taking some tape and about three pages of black construction paper" began a user after this news, giving instructions for burning out a fax machine.¹²⁹ Reports of phone calls to Canter & Siegel's office were numerous, including those of the "Phantom Phone Beeper," a phone phreak's automated project that called the law office forty times a night to fill the voicemail account with noise.¹³⁰ The collaborative research activity taking place on lists including news.admin.policy and alt.culture. Internet assembled a list of email addresses that might belong to Canter, one of which appeared to be for his personal computer. "Is this *their own* private system? . . . Someone please post crack their root and do a kill -9 1"—that is, crash the machine in such a way that no record is left of the state of the crash to help in the recovery, no body for the autopsy.¹³¹

Their phones, fax line, and computer connections were repeatedly taken out of service, and they were denounced in hundreds of thousands of words, but Canter and Siegel had the one thing truly difficult for a charivari to overcome (as opposed to a vigilante group, with its access to force). They were shameless, possessed of an apparently limitless *chutzpah*. They came back strong, claiming thousands of positive responses and \$100,000 in new business for their firm and presenting themselves as icons of free speech on Usenet and the Internet generally, with a total imperviousness to animosity and humiliation.¹³² They had "spammed" the entirety of Usenet, as the term was now inaugurated in its new meaning, but they were not vaporized by righteous thunderbolts from the vast and furious community or taken away in handcuffs with their assets frozen. They were giving interviews to the *New York Times* while Usenet's wizards and old hands grumbled on the news.admin.policy newsgroup and made prank calls to their office. "Freedom of speech has become a cause for us. I continue to be personally appalled at the disrespect for freedom of speech by this handful of individuals who would take over the net if they could," as Siegel put it, expressing their basic message from which they seldom strayed.¹³³ It ran as follows: the Internet was embedded in the territory of the United States of America. There were no restrictions on activity on the network of any real (legal) content. This medium, built largely with public funds, was governed by cliques of weird, ferocious nerds only too

happy to dictate when and how outsiders could speak, but they had no power beyond their internal consensus.

This interaction was the crystallization of the other cultural transitions already at work in the end of the noncommercial dispensation, and the arrival of users from outside academia and technological subcultures—people without the shared tacit and explicit understandings that made the whole affair work as well as it did. Two lawyers, not programmers or engineers, turned directly to the context in which the network existed, the context of advertising and business and markets, and above all, government and its laws, and asserted that context against any claims to internal legitimacy that the social structures of existing network users could make. “Cyberspace needs you,” they argued to their audience of online advertising magnates *manqué* (with infinite gall, from the perspective of Usenet’s long-term users). “Like the Old West with which analogies are often drawn, Cyberspace is going to take some taming before it is a completely fit place for people like you and me to spend time.”¹³⁴

As Chris Werry has described in a penetrating study of their spin-off book, *How to Make a Fortune on the Information Superhighway*, Canter and Siegel make a fundamentally Lockean argument (specifically, from the notorious sections on property in the *Second Treatise*), not only for their actions but on behalf of all those who would like to follow in their tracks.¹³⁵ The land, the territory, happens to be occupied by “Internet natives”—a very deliberate choice of words, framed in a larger discourse of Wild West “pioneers.” However, it belongs to those who can work it profitably. For Locke, the native peoples who were present when the settlers, colonists, and missionaries arrived had no contract structure and no concepts of private property compatible with those of the newcomers and were not engaged in the development of the land and its resources and therefore had no meaningful rights to it. In much the same way, the “natives” of the network, with their strange reputational, volunteerist gift economy, driven neither by state nor by market but by forms of Benkler’s “commons-based peer production,” had no grounds to be owners of anything. Their eccentric codes of conduct were not merely irrelevant but illegal—Canter and Siegel list much of what constituted netiquette at the point of their campaign, arguing that such a collection of restrictions and caveats, recast as rules for speech in daily life, would be overwhelmingly draconian and unconstitutional.

Canter and Siegel built the defense of their actions, and arguments for future advertisers, around two simultaneous and contradictory assertions, in which we see again the *Gemeinschaft-to-Gesellschaft* turn. Their book engages in an “almost hysterical” (in Werry’s accurate adjective) argument that there was no “community” on the network, no legitimated source of shared values, “rules, regulations and codes of behavior.” There is nothing but a rather horrific vision of “individuals and inert messages,” an atomized cyberspace built as though under the aegis of Margaret Thatcher’s “There is no such thing as society.”¹³⁶ At the same moment, they see an enormously lively gathering of “users,” “consumers,” and “readers” waiting to be exploited—that is, to be refashioned as audiences. They are walking a strange line in which the people using the network are simultaneously without authority over its resources and their development, and yet the people and their attention *are* the resource, that is, the matter to be profitably developed. The confusion of metaphors in this cheap business book is profoundly revealing: there is no community, no people with whom you must negotiate, in this vacant space, and yet the space is made of people and their time and attention, ready to be captured. As Werry documents, within a few years much of the discourse of online marketing was now about “fostering community” around products (spammers had already moved on, as we will see).

David Joselit’s *Feedback*—a study of television and video as political phenomena in the 1960s and 1970s—offers a parallel for understanding the layers of what was being done here. Following the vagaries of the use of video technology for political activism, Joselit captures the ambiguity of a “community” being formed around a media platform such as video, with its complex interplay of production and spectatorship: “video and video activism not only deliver audiences . . . but delivers particular audiences by fostering the self-conscious if also market-driven identification as communities or constituencies.”¹³⁷ Video has the capacity to create new, active spectatorships, fashioning self-aware gatherings capable of action, such as radical feminists or coherent ethnic groups, in the act of taping and seeing an identity formed which one can join. As the corollary to this capability, though, video has the ability to create markets for narrowcasting and niche marketing. The power of video to incite and organize is just that: the power to incite and organize, whether toward projects of political action or purchases and brand awareness. People working together on

networked computers was hugely productive of “community,” in both of Joselit’s senses of the term, and Canter and Siegel saw the latter meaning: gatherings waiting to be tilted, just slightly, to turn into market segments. Peter Bos had seen not just a time-sharing system for coordinating teams and resources but an audience of engineers complicit with the Vietnam War. Thuerk had seen not just a military network for official scientists but the exact demographic for his products. Noha knew Usenet was not just a network for asynchronous, international, noncommercial communication but a huge pool of potentially sympathetic suckers. Canter and Siegel saw readily automated, nearly free, and totally unregulated access to a global market.

The Internet is not video or television, though, and something quite different than a sense of community as a self-reflexive gathering was in danger of being lost. What was under threat was the informational manifestation of that communal sensibility, however problematically formed: the network as a human filtering system for information—as a source of salience. Wendy Grossman, who experienced the moment of the green card lottery firsthand, described the system of Usenet as “Structured so that users have maximum control over what material they choose to look at.”¹³⁸ Howard Rheingold, in a column written soon after the spam (and published on *The WELL*, no less) elaborated on this idea in practice:

The network is valuable because it helps us filter information. A raw flow of unrelated information is no good if you have to sift through a thousand irrelevant items to find the one you need. Computers can organize information, even the kind that accumulates through informal discussions. Newsgroups enable people all over the world to have conversations about topics of mutual interest, and to search those conversations for valuable information . . . the vast but organized conversation makes it possible for you to read only the newsgroups devoted to the topics that interest you.¹³⁹

The etymological transition of the word “spam” was not trivial but spoke to the deep problem and fear that Canter and Siegel had provoked. Although there was friction around commercial activity, people had been selling furniture and Grateful Dead tapes on the network and getting clients for massage or for programming since it had begun to move into the civilian sphere. The difference here was that Canter and Siegel had broken the rule of salience, the rule all spammers always break. It’s not

that they brought commercial grasping into some utopia of loving-kindness and cybernetic anarchism. It’s that they violated the principle of staying on topic and ignored the importance of salience and the skills entailed in knowing how to get what you need. Commercial advertising took the title of “spam” from the bad behavior of flawed inhabitants of the network because it was the *same thing*: material irrelevant to the conversation, violating the implicature out of which meaning was made and wasting attention. From this point—from the question of how to increase the value of the conversation being built out of the data—spring search engines, search engine spam, and the problem of “junk results”; social networks and data filtered by significant relationships, and the crises of social spam; and email spamming, whose slow-brewing disaster begins in chapter 2.

To bring their story to an end, there were penalties related to Canter and Siegel’s project in the longer term: Canter was disbarred in 1997 by the Board in Tennessee, partially as result of the green card lottery campaign, and Cybersell failed because their infamy online made Internet service providers increasingly dubious about dealing with them. “Bit-by-bit, yes, we were terminated by pretty much everybody,” Canter later said.¹⁴⁰ (The magazine *Wired* refused to carry any advertising for their book.)¹⁴¹ But at the time, the effect on Usenet was devastating. Canter and Siegel forced the hand of the network, and it did not have much to put up aside from telecommunications attacks, social intimidation, and plaintive appeals for good behavior: “NO COMMERCIAL ADVERTISING, if you please. Imagine what this vulnerable medium would look like if hundreds of thousands of merchants like you put up their free ads like yours.”¹⁴² “This vulnerable medium” is an interesting phrase, at once an overt plea for responsibility presented from a position of weakness and a more covert assertion of the need to maintain the status quo in favor of the people who already run it. It recalls the very real and cogent concern for the networked commons but also the all-too-common threat language of groups in power who would like to stay that way—the rhetoric of a vulnerable democracy in a dangerous world used by the Bush administration in its erosion of civil liberties, for example. Problematic statements, complex to make and complex to defend, flaked off of the charivari enforcement model as it fell apart. Something more coherent to fight spam

was clearly needed, whether that was to take the form of a social tool, a legal decision, a technical fix—or all three. Already the ads for a fat-loss cream from a PO box in Miami had arrived, and the strategies for using email as well as Usenet for advertising were taking shape. *How to Make a Fortune* was selling, and the disputes around context and community were turning into a very different conversation about money and law. There was no time to lose.

2 MAKE MONEY FAST: 1995–2003

INTRODUCTION: THE FIRST TEN MOVES

The theory of the opening is one of the most fascinating aspects of chess. The options are initially so limited, and the areas of focus still few. From the first move, the complexities proliferate with an enormous multiplication of the space of possible future moves, and long term strategies open like fans as both sides mobilize and threats appear. Within the first ten moves the game is often decided, and the remaining twenty or thirty moves are just the gradual confirmation of the truth. To manage this complexity, chess players rely on a cognitive approach called “chunking,” as popularized by Douglas Hofstadter via the work of Adriaan de Groot: “There is a higher-level description of the board than the straightforward ‘white pawn on K5, black rook on Q6’ type of description, and the master somehow produces such a mental image of the board.”¹ They think in terms of blocks of pieces and moves, associated sets of actions without having to sort through all the possible choices (most of which are useless or counterproductive). They have engaged in some “implicit pruning” of the tree of choices.

So far, we have been able to follow spam’s precedents roughly chronologically, move by move, across a diverse family of networks: CTSS, ARPANET, Usenet. Now the board comes entirely alive as a dense matrix of overlapping and interacting actors and forces—the infrastructure of network protocols, hardware and standards, legislation and political frameworks, companies small and huge, financial events, activist groups, hackers, lawyers, demography—with feedback loops, arms races, struggle over resources, and reinventions all going into making spam. Here, we need to begin chunking as chess players do, gathering the common threads and

converse that's worth thinking about. If "spamming" at the most general level is a verb for wasting other people's time online, can we imagine a contrary verb? That is, can we build media platforms that respect our attention and the finite span of our lives expended at the screen? How would all the things transacted on a computer screen look if they took our time—this existential resource of waking, living hours in a fragile body—as seriously as they could? A careful arrangement of meaningful information relative to our unique interests, needs, and context. A graceful interjection at the right time, a screen that does not demand a look but waits for a glance, words that are considerate that we humans and not our filters will be reading them. It could be anonymous or rude and obnoxious, produced by machines and algorithms or by humans or crowds of humans, but it reflects respect for the attention of its recipient. It might work something like a book—indeed, like this book, I hope, which is still, which does not distract, which waits for you to refer to it, and which you can now close.

NOTES

INTRODUCTION

1. Hawkesworth, *An Account of the Voyages Undertaken, 277–278*.
2. Sophos Ltd., "Pitcairn Islands Relays Most Spam Per Person, Reveals Sophos."
3. Paasonen, "Irregular Fantasies, Anomalous Uses," 170.
4. Analyses of attention in our current technological system are themselves in a state of proliferation. For further consideration of this topic, at greater length than we can do here, see Hayles, "Hyper and Deep Attention," 187–199. There is extensive commentary on Hayles's concepts, and the addition of the idea of "hypersolicitation"—that is, the increasing sophistication of demands for attention—in Stiegler, "Taking Care of Youth and the Generations," 72–83. See also Terranova, "The Bios of Attention," and Kwinter, "New Babylons." The framework for thinking about the role of "style" in an information-rich culture can be found in Lanham, *The Economics of Attention*. Finally, there is the classic: Simon, "Designing Organizations for an Information-Rich World."
5. Pfaffenberger, "Technological Dramas," 282–312.
6. Wohl, *The Spectacle of Flight* and *A Passion for Wings*. See also Lindqvist, *A History of Bombing*.
7. Le Corbusier, *Aircraft*.
8. Scott, *Seeing Like a State*.
9. The phrase "government machine" is taken from Jon Agar's *The Government Machine: A Revolutionary History of the Computer*. Agar makes the striking point that the historical development of computation in governance was partially a process of the capture of powerful metaphors. If a government is a machine, or includes many mechanical elements, then it demands efficient mechanization—the province of the "expert movements" who seize institutional power with technological change.

10. For this transition, see—among others—Aker, *Calculating a Natural World*; Turner, *From Counterculture to Cyberculture*; and Markoff, *What the Dormouse Said*.
11. Kelty, *Two Bits*, 113.
12. Moore, "Epilogue," 234–235.

I READY FOR NEXT MESSAGE

1. What follows here is necessarily only a brief overview of a fascinating chapter in the history of the twentieth century. A few exemplary studies that informed this short contextual section include: Abbate, *Inventing the Internet*; Hafner and Lyon, *Where Wizards Stay Up Late*; Ceruzzi, *A History of Modern Computing*; Ryan, *A History of the Internet and the Digital Future*; Markoff, *What the Dormouse Said*; Kelty, *Two Bits*; Levy, *Hackers: Heroes of the Computer Revolution*; and the fascinating analysis of ARPANET and the substance of archives in Gitelman, *Always Already New*, 97–121.

2. Levy, *Hackers*, 147. See also Szpakowski, "Community Memory."
3. Wu, *The Master Switch*, 45–47.
4. Scott, "Episode 4."
5. Feenberg, *Alternative Modernity*, 144–166.
6. Kelty, *Two Bits*, 166–177.
7. Abbate, *Inventing the Internet*, 115.
8. Hafner and Lyon, *Where Wizards Stay Up Late*, 12.
9. Taylor, interview by Aspray, 34.
10. Naughton, *A Brief History of the Future*, 75.
11. Abbate, *Inventing the Internet*, 46.
12. For more on Licklider's remarkable career, see Waldrop, *The Dream Machine*.
13. Licklider and Taylor, "The Computer as a Communication Device," 32.
14. Ritchie, "The Evolution of the Unix Time-sharing System," 1577–1593.
15. Van Vleck, "The Who Command."
16. Hafner, *The Well*, 42.
17. Dewey, *The Public and Its Problems*, 184.
18. Kendall, "Community and the Internet," 309–325, 309. Williams, *Keywords*, 76. For an overview of the complex and contradictory ideas around "community,"

especially as it enters the virtual, see Cavanagh, *Sociology in the Age of the Internet*, 102–119.

19. Rheingold, *The Virtual Community*, 5.
20. Rheingold, *The Virtual Community*, 64.
21. Coate, "Cyberspace Innkeeping."
22. Galloway, "Position Paper."
23. Nissenbaum, "Privacy as Contextual Integrity," 119–158.
24. Kelty, *Two Bits*, 3, 30.
25. Dewey, *The Public and Its Problems*, 126, 141.
26. Bygrave and Bing, *Internet Governance*, 50. Pfaffenberger, "If I Want It, It's Okay," 384.
27. Joy, interview by Kim, "The Joy of Unix."
28. Jussi Parikka and Tony Sampson have written a delightful analysis of the sketch itself, pointing out that its humor, and indeed much of the *Monty Python* troupe's humor, is built around a communications breakdown, in this case the limit test of one of Shannon's channels—finding the point where noise on the line overwhelms any particular signal ("On Anomalous Objects of Digital Culture: An Introduction").
29. Parry, "Re: 'Totally Spam? It's Lubricated.'"
30. To make an extremely rough contemporary analogy, MUDs are like World of Warcraft, in which many players can work simultaneously but the game's world and play are largely in the hands of the administrators, and MOOs are like Second Life, in which players can construct spaces and objects within the game that other players can explore and use. The roughness of this analogy lies in the lack of programming liberty afforded to users of Second Life compared to those of MOOs, who could in many circumstances get under the hood of the world in interesting, experimental, and sometimes destructive ways.
31. See, for instance, Turkle, *Life on the Screen*; Molloy, "Public Literature: Narratives and Narrative Structures in Lambda MOO"; Dibbell, "A Rape in Cyberspace" and *My Tiny Life*.
32. Shaviro, *Doom Patrols*, 136.
33. Dibbell, "A Rape in Cyberspace." See also Dibbell, *My Tiny Life*, 19.
34. Hafner, *The Well*, 53.
35. Hess, *Yib's Guide to MOOing*, 29.

36. Dibbell, *My Tiny Life*, 100.
37. Under her alias "Sunny": Hess, *Yib's Guide to MOOing*, 321.
38. Dibbell, *My Tiny Life*, 280.
39. Dibbell, *My Tiny Life*, 19.
40. Dibbell, *My Tiny Life*, 97.
41. Chapman, *The Works of George Chapman*, 4.
42. Stephenson. "Mother Earth Mother Board," 95–161.
43. Stephenson, *Anathem*.
44. Stallman, "Why Schools Should Exclusively Use Free Software."
45. Lions, *Commentary on UNIX 6th Edition*.
46. Department of Defense, "DoD Internet Host Table."
47. Spatt, "Postel, Jon," 450. See also BBC News (no byline), "'God of the Internet' Is Dead."
48. Ryan, *A History of the Internet*, 33.
49. Crocker, "How the Internet Got Its Rules."
50. Crocker, RFC 3: "Documentation Conventions."
51. BBC News, "'God of the Internet' Is Dead."
52. Abbate, *Inventing the Internet*, 70.
53. Postel, RFC 706: "On the Junk Mail Problem."
54. Edwards, *The Closed World*, 111.
55. On Baran and early packet-switching theory, see Abbate, *Inventing the Internet*, 10–21.
56. Crocker, RFC 3: "Documentation Conventions."
57. Edwards, *A Vast Machine*, 25.
58. North and Iseli, *ARPANET News*, 5, 7, 16.
59. Kleinrock, interview by Petrie, "Len Kleinrock on the Origins of the Internet."
60. Walker, "MSGGROUP# 002 Message Group Status."
61. Crocker, "MSGGROUP# 004 Use of a Teleconferencing system, in place of Net Mail."

62. Chansler, "Re: Close, but No Cigar," as quoted in Brian Reid, "MSGGROUP# 506 Message headers: a note from the grass roots."
63. Postel, "MSGGROUP# 561 Comments on RFC 724."
64. Benkler, "Sharing Nicely," 273–358.
65. Pickering, *The Cybernetic Brain*, 17–22.
66. Bowker and Star, *Sorting Things Out*, 1999.
67. Van Vleck, "The History of Electronic Mail." The documentary filmmaker and essayist Errol Morris conducted several fascinating interviews with Van Vleck and others connected with the history of time sharing and email ("Did My Brother Invent E-Mail With Tom Van Vleck?," <http://opinionator.blogs.nytimes.com/2011/06/19/did-my-brother-invent-e-mail-with-tom-van-vleck-part-one/>).
68. Stallman, "MSGGROUP# 697 Some Thoughts about Advertising."
69. Hafner and Lyon, *Where Wizards Stay Up Late*, 207. Oddly, Crowther had been the subject of an earlier search on ARPANET, leading to a discussion of whether to have some sort of user-portable address—see Martin, "MSGGROUP# 546 ABSENTEE ADDRESSEES." A superb analysis of the genesis and meaning of Adventure can be found in Jerz, "Somewhere Nearby Is Colossal Cave."
70. "Polylogue" was coined by Austin Henderson, in "MSGGROUP# 522 Re: CONTENTS OF SUBJECT FIELDS"; "a select group of people" as described by Mark Crispin, "MSGGROUP# 696 in reply to Jake's message about advertising."
71. The description of the Quasar robot is quoted by Philip Carlton in a message forwarded to the MSGGROUP list: Nelson, "MSGGROUP# 569 Does it know about mail, too?"
72. Reid, "MSGGROUP# 614 Fake Robot: A Call for Help."
73. Stefferud and Farber, "MSGGROUP# 675 The Quasar Discussion."
74. As forwarded to the MSGGROUP list: Goodfellow, "MSGGROUP# 699 [THUERK at DEC-MARLBORO: ADRIAN@SRI-KL]." See also Templeton, "Reaction to the DEC Spam of 1978."
75. Kendall, "Community and the Internet," 310.
76. Deutsch, "MSGGROUP# 684 Re: The Quasar Discussion."
77. Hauben, "The Evolution of Usenet News." Note that the name of the SF-Loyers list is misspelled in this document as "Duffy," which confuses him with the architect Roger Duffy; Duffey's work on digests and the SAVE-LARGE-LISTS project is a very interesting early case of moderating large volumes of email communication.

78. Stallman, "MSGGROUP# 697 Some Thoughts about Advertising."
79. Kropotkin, "Law and Authority: An Anarchist Essay," 202.
80. Stallman, "MSGGROUP# 698 DEC Message [VERY TASTY!]."
81. McCarthy, "MSGGROUP# 692 Reaction."
82. Zellich, "MSGGROUP# 693 INOVATIONS IN ENGINEERING PUBLICATION."
83. Crispin, "MSGGROUP# 696 in reply to Jake's message about advertising."
84. Price and Verhulst, *Self-Regulation and the Internet*, 14.
85. Nelson, *Dream Machines*.
86. Pfaffenberger, "If I Want It, It's Okay," 367.
87. Hauben and Hauben, "On the Early Days of Usenet."
88. Den Beste, "Trivia on the Net."
89. Pfaffenberger, "If I Want It, It's Okay," passim.
90. Hayes, "An Alternative Primer on Net Abuse, Free Speech, and Usenet."
91. Hayes, "An Alternative Primer on Net Abuse, Free Speech, and Usenet"; note also the brief argument that "antispam zealotry" is leading to ISPs delivering inferior service.
92. Woodbury, as cited in Pfaffenberger, "If I Want It, It's Okay," 380.
93. Furr, "Re: ARMM: ARMM: >>>>Ad Infinitum."
94. Wiener, "Nebraska letter."
95. "JJ"/Rob Noha, "HELP ME!!AA."
96. Webber, "FCC? U.S.Mail.? (Re: JJ's Revenge—Part II)."
97. Customer Service at Portal Communications, "JJ's Posting."
98. Customer Service at Portal Communications, "A Note From Portal Regarding the 'JJ' Incident."
99. I am indebted to Mario Biagioli for first suggesting this parallel.
100. Davis, *The Return of Martin Guerre*, 21.
101. Palmer, "Discordant Music," 5–62.
102. Hardy, *The Mayor of Casterbridge*, 366, 369.
103. For an interesting parallel case in violating privacy and collectively producing public shame online, see Liu, "Human Flesh Search Engine."

104. Johnson, "Due Process and Cyberjurisdiction," 334.
105. Johnson, "Due Process and Cyberjurisdiction," 332.
106. Fraser, "Viral Vigilantes."
107. This is obviously only a very brief summary of a fascinating subject. For a much fuller historical understanding, particularly of the central role of violence, see Rosenbaum and Sederberg, eds., *Vigilante Politics*; French, *The Virtues of Vengeance*; and Abrahams, *Vigilant Citizens*.
108. As cited in Forbes, *The Satiric Decade*, 207. For English instances of the charivari, see Thompson, "Rough Music: Le Charivari Anglais," 285–312, and "Rough Music Reconsidered," 3–26. For North American instances, see Palmer, "Discordant Music," 5–62.
109. Forbes, *The Satiric Decade*, 177.
110. Haugh II, "Re: HELP ME!!!"
111. Kleinpaste, "Re: C&S Have Declared War on the Net. How to Defend the Net?"
112. Abbate, *Inventing the Internet*, 185.
113. Pfaffenberger, "If I Want It, It's Okay," 384.
114. Cliff Figallo, as quoted in Hafner, *The Well*, 55.
115. Turner, *From Counterculture to Cyberculture*, 73.
116. Rheingold, "What the WELL's Rise and Fall Tell Us about Online Community."
117. Hafner, *The Well*, 114–118.
118. Grossman, *Net Wars*, 33.
119. Canter, interview by Feist, "The Father of Modern Spam Speaks."
120. Canter, as quoted in Moran, "The Day the Net Changed Forever."
121. Stivale, "Spam: Heteroglossia and Harassment in Cyberspace," 133–144.
122. Scurr, "Re: Green Card Lottery- Final One?"
123. Larson, "Re: Green Card Lottery- Final One?"
124. Nicholson, "Re: Green Card Lottery- Final One?"
125. Gillett, "bozo lawyers."
126. Cantillo, "Re: Green Card Lottery- Final One?"
127. Canter, interview by Feist, "The Father of Modern Spam Speaks."

128. Friedman, "Re: Green Card Lottery- Final One?"
129. Kilna, "Re: Green Card Lottery- Final One?"
130. Lewis, "Sneering at a Virtual Lynch Mob."
131. Ackerman, "Re: Green Card Lottery- Final One?"
132. Flynn, "'Spamming' on the Internet."
133. Flynn, "'Spamming' on the Internet."
134. Canter and Siegel, *How to Make a Fortune on the Information Superhighway*, 187.
135. Werry, "Imagined Electronic Community."
136. Canter and Siegel, *How to Make a Fortune on the Information Superhighway*, 12,
188. Thatcher's famous quote can be found in Thatcher, interview by Douglas Keay, "Aids, Education and the Year 2000!"
137. Joselit, *Feedback: Television against Democracy*, 105.
138. Grossman, *Net Wars*, 19.
139. Rheingold, "The Tragedy of the Electronic Commons."
140. Canter, interview by Feist, "The Father of Modern Spam Speaks."
141. Grossman, *Net Wars*, 25.
142. Lloyd, "Re: Green Card Lottery- Final One?"

2 MAKE MONEY FAST

1. Hofstadter, *Gödel, Escher, Bach*, 286.
2. Latour, "Can We Get Our Materialism Back, Please?," 138-142.
3. McWilliams, *Spam Kings*.
4. "This term is derived from a skit performed on the British television show *Monty Python's Flying Circus*, in which the word 'spam' is repeated to the point of absurdity in a restaurant menu." *CompuServe v. Cyber Promotions, Inc.*
5. As discussed on NANAE: Leader, "Re: I'M OUT!," in news.admin.net-abuse.email. See also Kanaley, "Sanford Wallace, the Spam King, Abdicates and Apologizes Online."
6. Fuller and Goffey, "Toward an Evil Media Studies," 152.
7. Fuller and Goffey, "Toward an Evil Media Studies," 152.
8. Boyle, "Spam Hits the House of Representatives."

9. Lewis, "Protest Halts E-Mail 'Spam.'"
10. Lane, *Obscene Profits*, 154-155.
11. Lane, *Obscene Profits*, 158.
12. Wolcott, "You Call It Spam, They Call it a Living."
13. Bruncker, "In the Trenches of the 'Spam Wars.'"
14. Wolcott, "You Call It Spam, They Call it a Living."
15. McWilliams, *Spam Kings*, passim. See also Moser, "Return of the 'Kosher Nazi.'"
16. Fitzgerald, "AOL Gives Up Treasure Hunt."
17. Scoblionkov, "Senate Embraces Spam Bill."
18. Angwin, *Stealing MySpace*, 23.
19. On Jason Heckel: Oman, "Washington Supreme Court Upholds State Antispamming Law," 931-937. On Davis Hawke: McWilliams, *Spam Kings*, 89. On Email America: The Virtual Magistrate (news release), "Virtual Magistrate Issues Its First Decision," 343-345.
20. "Who Is Premier Services," premeir-marketing.htm, beyond-enemy-lines archive, n.d.
21. Lialina, "A Vernacular Web 2," 58-69.
22. Deekoo, "editorial note" in "Lets Get Brutal!," <http://deekoo.net/peeves/spam/spammers/premiere/brutal.htm>.
23. Hilderbrand, *Inherent Vice*, 66-71.
24. "Rodona-and-DA.txt," beyond-enemy-lines archive, September 7, 1999.
25. "Aspen-and-Shannon.txt," beyond-enemy-lines archive, March 31, 2000.
26. "Rodona-and-Andy.txt," beyond-enemy-lines archive, September 7, 1999.
27. "Aspen-and-Shannon.txt," beyond-enemy-lines archive, May 22, 2000.
28. "Aspen-and-Shannon.txt," beyond-enemy-lines archive, March 31, 2000.
29. "Rodona-Server-and-Ken.txt," beyond-enemy-lines archive, September 14, 1999, and September 20, 1999.
30. "Rodona-Server-and-Ken.txt," beyond-enemy-lines archive, September 20, 1999.
31. McWilliams, *Spam Kings*, 222.
32. "mk590," "AOL for free?" in alt.2600, January 28, 1996.