A short history of the Russian digital shadow libraries

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"What I see as a consequence of the free educational book distribution: in decades generations of people everywhere in the World will grow with the access to the best explained scientific texts of all times. […]The quality and accessibility of education to poors will drastically grow too. Frankly, I'm seeing this as the only way to naturally improve mankind: by breeding people with all the information given to them at any time." – Anonymous admin of Aleph, explaining the reason d'étre of the site

Abstract

RuNet, the Russian segment of the internet is now the home of the most comprehensive scientific pirate libraries on the net. These sites offer free access to hundreds of thousands of books and millions of journal articles. In this contribution we try to understand the factors that led to the development of these sites, and the sociocultural and legal conditions that enable them to operate under hostile legal and political conditions. Through the reconstruction of the micro-histories of peer produced online text collections that played a central role in the history of RuNet, we are able to link the formal and informal support for these sites to the specific conditions developed under the Soviet and post Soviet times.

(pirate) libraries on the net

The digitization and collection of texts was one of the very first activities enabled by computers. Project Gutenberg, the first in line of digital libraries was established as early as 1971. By the early nineties, a number of online electronic text archives emerged, all hoping to finally realize the dream that was chased by humans every since the first library: the collection of everything (Battles, 2004), the Memex (Bush, 1945), the Mundaneum (Rieusset-Lemarié, 1997), the Library of Babel (Borges, 1998). It did not take long to realize that the dream was still beyond reach: the information storage and retrieval technology might have been ready, but copyright law, for the foreseeable future was not. Copyright protection and enforcement slowly became one of the most crucial issues around digital technologies.

And as that happened, the texts, which were archived without authorization were purged from the budding digital collections. Those that survived complete deletion were moved into the dark, locked down sections of digital libraries that sometimes still lurk behind the law-abiding public façades. Hopes for a universal digital library can be built was lost in just a few short years as those who tried it (such as Google or Hathitrust) got bogged down in endless court battles.

There are unauthorized texts collections circulating on channels less susceptible to enforcement, such as DVDs, torrents, or IRC channels. But the technical conditions of these distribution channels do not enable the development of a library. Two of the most essential attributes of any proper library: the catalogue and the community are hard to provide on such channels. The catalog doesn't just organize the knowledge stored in the collection; it is not just a tool of searching and browsing. It is a critical component in the organization of the community of "librarians" who preserve and nourish the collection. The catalog is what distinguishes an unstructured heap of computer files from a well-maintained library, but it is the same catalog, which makes shadow libraries, unauthorized texts collections an easy target of law enforcement. Those few digital online libraries that dare to provide unauthorized access to texts in an organized manner, such as textz.org, a*.org, monoskop or Gigapedia/ library.nu, all had their bad experiences with law enforcement and rights holder dismay.

Of these pirate libraries, Gigapedia—later called Library.nu—was the largest at the turn of the 2010's. At its peak, it was several orders of magnitudes bigger than its peers, offering access to nearly a million English language documents. It was not just size that made Gigapedia unique. Unlike most sites, it moved beyond its initial specialization in scientific texts to incorporate a wide range of academic disciplines. Compared to its peers, it also had a highly developed central metadata database, which contained bibliographic details on the collection and also, significantly, on gaps in the collection, which underpinned a process of actively solicited contributions from users. With the ubiquitous scanner/copiers, the production of book scans was as easy as copying them, thus the collection grew rapidly.

Gigapedia's massive catalog made the site popular, which in turn made it a target. In early 2012, a group of 17 publishers was granted an injunction against the site (now called Library.nu; and against iFile.it—the hosting site that stored most of Library.nu's content). Unlike the record and movie companies, which had collaborated on dozens of lawsuits over the past decade, the Library.nu injunction and lawsuit were the first coordinated publisher actions against a major file-sharing site, and the first to involve major university publishers in particular. Under the injunction, the Library.nu adminstrators closed the site. The collection disappeared and the community around it dispersed. (Liang, 2012)

Gigapedia's collection was integrated into Aleph's predominantly Russian language collection before the shutdown, making Aleph the natural successor of Gigapedia/library.nu.

Libraries in the RuNet

The search soon zeroed in on a number of sites with strong hints to their Russian origins. Sites like Aleph, [sc], [fi], [os] are open, completely free to use, and each offers access to a catalog comparable to the late Gigapedia's.

The similarity of these seemingly distinct services is no coincidence. These sites constitute a tightly knit network, in which Aleph occupies the central position. Aleph, as its name suggests, is the source library, it aims to seed of all scientific digital libraries on the net. Its mission is simple and straightforward. It collects free-floating scientific texts and other collections from the Internet and consolidates them (both content and metadata) into a single, open database. Though ordinary users can search the catalog and retrieve the texts, its main focus is the distribution of the catalog and the collection to anyone who wants to build services upon them. Aleph has regularly updated links that point to its own, neatly packed source code, its database dump, and to the terabytes worth of collection. It is a knowledge infrastructure that can be freely accessed, used and built upon by anyone. This radical openness enables a number of other pirate libraries to offer Aleph's catalogue along with books coming from other sources. By mirroring Aleph they take over tasks that the administrators of Aleph are unprepared or unwilling to do. Handling much of the actual download traffic they relieve Aleph from the unavoidable investment in servers and bandwidth, which, in turn puts less pressure on Aleph to engage in commercial activities to finance its operation. While Aleph stays in the background, the network of mirrors compete for attention, users and advertising revenue as their design, business model, technical sophistication is fine-tuned to the profile of their intended target audience.

This strategy of creating an open infrastructure serves Aleph well. It ensures the widespread distribution of books while it minimizes (legal) exposure. By relinquishing control, Aleph also ensures its own long-term survival, as it is copied again and again. In fact, openness is the core element in the philosophy of Aleph, which was summed up by one of its administrators as to:

> *"- collect valuable science/technology/math/medical/humanities academic literature. That is, collect humanity's valuable knowledge in digital form. Avoid junky books. Ignore "bestsellers".*
>
> *- build a community of people who share knowledge, improve quality of books, find good and valuable books, and correct errors.*
>
> *- share the files freely, spreading the knowledge altruistically, not trying to make money, not charging money for knowledge. Here people paid money for many books that they considered valuable and then shared here on [Aleph], for free. […]*
>
> *This is the true spirit of the [Aleph] project."*

Reading, publishing, censorship and libraries in Soviet-Russia

"[T]he library of the Big Lubyanka was unique. In all probability it had been assembled out of confiscated private libraries. The bibliophiles who had collected those books had already rendered up their souls to God. But the main thing was that while State Security had been busy censoring and emasculating all the libraries of the nation for decades, it forgot to dig in its own bosom. Here, in its very den, one could read Zamyatin, Pilnyak, Panteleimon Romanov, and any volume at all of the complete works of Merezhkovsky. (Some people wisecracked that they allowed us to read forbidden books because they already regarded us as dead. But I myself think that the Lubyanka librarians hadn't the faintest concept of what they were giving us—they were simply lazy and ignorant.)"

(Solzhenitsyn, 1974)

In order to properly understand the factors that shaped Russian pirate librarians' and their wider environments' attitudes towards bottom-up, collaborative, copyright infringing open source digital librarianship, we need to go back nearly a century and take a close look at the specific social and political conditions of the Soviet times that shaped the contemporary Russian intelligentsia's attitudes towards knowledge.

The communist ideal of a reading nation

Russian culture always had a reverence for the printed word, and the Soviet state, with its Leninist program of mass education further stressed the idea of the educated, reading public. As Stelmach (1993) put it:

Reading almost transplanted religion as a sacred activity: in the secularized socialist state, where the churches were closed, the free press stifled and schools and universities politicized, literature became the unique source of moral truth for the population. Writers were considered teachers and prophets.

The Soviet Union was a reading culture: in the last days of the USSR, a quarter of the adult population were considered active readers, and almost everyone else categorized as an occasional reader. Book prices were low, alternative forms of entertainment were scarce, and people were poor, making reading one of the most attractive leisure activities.

The communist approach towards intellectual property protection reflected the idea of the reading nation. The Soviet Union inherited a lax and isolationist copyright system from the tsarist Russia. Neither the tsarist Russian state nor the Soviet state adhered to international copyright treaties, nor did they enter into bilateral treaties. Tsarist Russia's refusal to grant protection to foreign authors and translations had primarily an economic rationale. The Soviet regime added a strong ideological claim: granting exclusive ownership to authors was against the interests of the reading public, and "the cultural development of the masses," and only served the private interests of authors and heirs.

"If copyright had an economic function, that was only as a right of remuneration for his contribution to the extension of the socialist art heritage. If copyright had a social role, this was not to protect the author

from the economically stronger exploiter, but was one of the instruments to get the author involved in the great communist educational project." (Elst, 2005, p 658)

The Soviet copyright system, even in its post-revolutionary phase, maintained two persistent features that served as important instruments of knowledge dissemination. First, the statutorily granted *"freedom of translation"* meant that translation was treated as an exception to copyright, which did not require rights holder authorization. This measure dismantled a significant barrier to access in a multicultural and multilingual empire. By the same token, the denial of protection to foreign authors and rights holders eased the imports of foreign texts (after, of course the appropriate censorship review). Due to these instruments:

"[s]oon after its founding, the Soviet Union became as well the world's leading literary pirate, not only publishing in translation the creations of its own citizens but also publishing large numbers of copies of the works of Western authors both in translation and in the original language." (Newcity, 1980, p 6.)

Looking simply at the aggregate numbers of published books, the USSR had an impressive publishing industry on a scale appropriate to a reading nation. Between 1946 and 1970 more than 1 billion copies of over 26 thousand different work were published, all by foreign authors (Newcity, 1978). In 1976 alone, more than 1.7 billion copies of 84,304 books were printed. (Friedberg, Watanabe, & Nakamoto, 1984, fn 4.)

Of course these impressive numbers reflected neither a healthy public sphere, nor a well-functioning print ecology. The book-based public sphere was both heavily censored and plagued by the peculiar economic conditions of the Soviet, and later the post-Soviet era.

Censorship

The totalitarian Soviet state had many instruments to control the circulation of literary and scientific works.[1] Some texts never entered official circulation in the first hand: *"A particularly harsh prepublication censorship [affected] foreign literature, primarily in the humanities and socioeconomic disciplines. Books on politics, international relations, sociology, philosophy, cybernetics, semiotics, linguistics, and so on were hardly ever published."* (Stelmakh, 2001, p 145.)

Many 'problematic' texts were only put into severely limited circulation. Books were released in small print runs; as in-house publications, or they were only circulated among the trustworthy few. As the resolution of the Central Committee of the Communist Party of June 4, 1959, stated: *"Writings by bourgeois authors in the fields of philosophy, history, economics, diplomacy, and law […] are to be published in limited quantities after the excision from them of passages of no scholarly or practical*

[1] We share Helen Freshwater's (2003) approach that censorship is a more complex phenomenon than the state just blocking the circulation of certain texts. Censorship manifested itself in more than one ways and its dominant modus operandi, institutions, extent, focus, reach, effectiveness showed extreme variations over time. This short chapter however cannot go into the intricate details of the incredibly rich history of censorship in the Soviet Union. Instead, through much simplification we try to demonstrate that censorship did not only affect literary works, but extended deep into scholarly publishing, including natural science disciplines.

interest. They are to be supplied with extensive introductions and detailed annotations." (quoted in Friedberg et al., 1984)

Truncation and mutilation of texts was also frequent. Literary works and texts from humanities and social sciences were obvious subjects of censorship, but natural sciences and technical fields did not escape:

"In our film studios we received an American technical journal, something like Cinema, Radio and Television. I saw it on the chief engineer's desk and noticed that it had been reprinted in Moscow. Everything undesirable, including advertisements, had been removed, and only those technical articles with which the engineer could be trusted were retained. Everything else, even whole pages, was missing. This was done by a photo copying process, but the finished product appeared to be printed." (Dewhirst & Farrell, 1973, p. 127)

Mass cultural genres were also subject to censorship and control. Women's fiction, melodrama, comics, detective stories, and science fiction were completely missing or heavily underrepresented in the mass market. Instead, "a small group of officially approved authors […] were published in massive editions every year, [and] blocked readers' access to other literature. […]Soviet literature did not fit the formula of mass culture and was simply bad literature, but it was issued in huge print-runs." (Stelmakh, 2001, p. 150)

Libraries were also important instruments of censorship. When not destroyed altogether, censored works ended up in the *spetskhrans,* limited access special collections established in libraries to contain censored works. Besides obvious candidates such as anti-Soviet works and western 'bourgeois' publications, many scientific works from the fields of biology, nuclear physics, psychology, sociology, cybernetics, and genetics ended up in these closed collections (Ryzhak, 2005). Access to the *spetskhrans* was limited to those with special permits issued by their employers. *"Only university educated readers were enrolled and only those holding positions of at least junior scientific workers were allowed to read the publications kept by the spetskhran"* (Ryzhak, 2005). In the last years of the USSR, the *spetskhran* of the Russian State Library—the largest of them with more than 1 million items in the collection—had 43 seats for its roughly 4500 authorized readers. Yearly circulation was around 200,000 items, a figure that included *"the history and literature of other countries, international relations, science of law, technical sciences and others."* (Ryzhak, 2005)

Librarians thus played a central role in the censorship machinery. They did more than guard the contents of limited-access collections and purge the freely accessible stocks according to the latest Party directives. As the intermediaries between the readers and the closed stacks, their task was to carefully guide readers' interests:

"In the 1970s, among the staff members of the service department of the Lenin State Library of the U.S.S.R., there were specially appointed persons-"politcontrollers"-who, apart from their regular professional functions, had to perform additional control over the literature lent from the general stocks (not from the restricted access collections), thus exercising censorship over the percolation of avant-garde

aesthetics to the reader, the aesthetics that introduced new ways of thinking and a new outlook on life and social behavior." (Stelmakh, 2001)

Librarians also used library cards and lending histories to collect and report information on readers and suspicious reading habits.

Soviet economic dysfunction also severely limited access to printed works. Acute and chronic shortages of even censor-approved texts were common, both on the market and in libraries. When the USSR joined its first first international copyright treaty in its history in 1973 (the UNESCO-backed Universal Copyright Convention), which granted protection to foreign authors and denied "freedom of translation," the access problems only got worse. Soviet concern that granting protection to foreign authors would result in significant royalty payments to western rightsholders proved valid. By 1976, the yearly USSR trade deficit in publishing reached a million rubles (~5.5 million current USD) (Levin, 1983, p. 157). This imbalance not only affected the number of publications that were imported into the cash-poor country, but also raised the price of translated works to the double that of Russian-authored books (Levin, 1983, p. 158).

The literary and scientific underground in Soviet times

Various practices and informal institutions evolved to address the problems of access. Book black markets flourished: "In the 1970s and 1980s the black market was an active part of society. Buying books directly from other people was how 35 percent of Soviet adults acquired books for their own homes, and 68 percent of families living in major cities bought books only on the black market." (Stelmakh, 2001, p 146). Book copying and hoarding was practiced to supplement the shortages:

"People hoarded books: complete works of Pushkin, Tolstoy or Chekhov. You could not buy such things. So you had the idea that it is very important to hoard books. High-quality literary fiction, high quality science textbooks and monographs, even biographies of famous people (writers, scientists, composers, etc.) were difficult to buy. You could not, as far as I remember, just go to a bookstore and buy complete works of Chekhov. It was published once and sold out and that's it. Dostoyevsky used to be prohibited in the USSR, so that was even rarer. Lots of writers were prohibited, like Nabokov. Eventually Dostoyevsky was printed in the USSR, but in very small numbers.

And also there were scientists who wanted scientific books and also could not get them. Mathematics books, physics - only very few books were published every year, you can't compare this with the market in the U.S. Russian translations of classical monographs in mathematics were difficult to find.

So, in the USSR, everyone who had a good education shared the idea that hoarding books is very, very important, and did just that. If someone had free access to a Xerox machine, they were Xeroxing everything in sight. A friend of mine had entire room full of Xeroxed books."[2]

From the 1960s onwards, the ever-growing Samizdat networks tried to counterbalance the effects of censorship and provide access to both censored classics and information on the current state of Soviet

[2] Anonymous source #1

society. Reaching a readership of around 200,000, these networks operated in a networked, bottom-up manner. Each node in the chain of distribution copied the texts it received, and distributed the copies. The nodes also carried information backwards, towards the authors of the samizdat publications.

In the immediate post-Soviet political turmoil and economic calamity, access to print culture did not get any easier. Censorship officially ended, but so too did much of the funding for the state-funded publishing sector. Mass unemployment, falling wages, and the resulting loss of discretionary income did not facilitate the shift toward market-based publishing models. The funding of libraries also dwindled, limiting new acquisitions (Elst, 2005, p. 299-300). Economic constraints took the place of political ones. But in the absence of political repression, self-organizing efforts to address these constraints acquired greater scope of action. Slowly, the informal sphere began to deliver alternative modes of access to otherwise hard-to-get literary and scientific works.

Russian pirate libraries emerged from these enmeshed contexts: communist ideologies of the reading nation and mass education; the censorship of texts; the abused library system; economic hardships and dysfunctional markets, and, most importantly, the informal practices that ensured the survival of scholarship and literary traditions under hostile political and economic conditions. The prominent place of Russian pirate libraries in the larger informal media economy—and of Russian piracy of music, film, and other copyrighted work more generally—cannot be understood outside this history.

The emergence of DIY digital libraries in RuNet

The copying of censored and uncensored works (by hand, by typewriters, by photocopying or by computers), the hoarding of copied texts**,** the buying and selling of books on the black market, and the informal, peer-to-peer distribution of samizdat material were integral parts of the everyday experience of much of educated Soviet and post-Soviet readers. The building and maintenance of individual collections and the participation in the informal networks of exchange offered a sense of political, economic and cultural agency—especially as the public institutions that supported the core professions of the *intelligentsia* fell into sustained economic crisis.

Digital technologies were embraced by these practices as soon as they appeared:

> *"From late 1970s, when first computers became used in the USSR and printers became available, people started to print forbidden books, or just books that were difficult to find, not necessarily forbidden. I have seen myself a print-out on a mainframe computer of a science fiction novel, printed in all caps! Samizdat was printed on typewriters, xeroxed, printed abroad and xeroxed, or printed on computers. Only paper circulated, files could not circulate until people started to have PCs at home. As late as 1992 most people did not have a PC at home. So the only reason to type a big text into a computer was to print it on paper many times."*[3]

People who worked in academic and research institutions were well positioned in this process: they had access to computers, and many had access to the materials locked up in the *spetskhrans.* Many also had

[3] Anonymous source #1

the time and professional motivations to collect and share otherwise inaccessible texts. The core of current digital collections was created in this late-Soviet/early post-Soviet period by such professionals. Their home academic and scientific institutions continued to play an important role in the development of digital text collections well into the era of home computing and the internet.

Digitized texts first circulated in printouts and later on optical/magnetic storage media. With the emergence of digital networking these texts quickly found their way to the early Internet as well. The first platform for digital text sharing was the Russian Fidonet, a network of BBS systems similar to Usenet, which enabled the mass distribution of plain text files. The BBS boards, such as the Holy Spirit BBS' "SU.SF & F.FANDOM" group whose main focus was Soviet-Russian science fiction and fantasy literature, connected fans around emerging collections of shared texts. As an anyonmous interviewee described his experience in the early 1990s…

"Fidonet collected a large number of plaintext files in literature / fiction, mostly in Russian, of course. Fidonet was almost all typed in by hand. […] Maybe several thousand of the most important books, novels that "everyone must read" and such stuff. People typed in poetry, smaller prose pieces. I have myself read a sci-fi novel printed on a mainframe, which was obviously typed in. This novel was by Strugatski brothers. It was not prohibited or dissident, but just impossible to buy in the stores. These were culturally important, cult novels, so people typed them in. […] At this point it became clear that there was a lot of value in having a plaintext file with some novels, and the most popular novels were first digitized in this way."

The next stage in the text digitization started around 1994. By that time growing numbers of people had computers, scanning peripherals, OCR software. Russian internet and PC penetration while extremely low overall in the 1990s (0.1% of the population having internet access in 1994, growing to 8.3% by 2003), began to make inroads in educational and scientific institutions and among Moscow and St.Petersburg elites, who were often the critical players in these networks. As access to technologies increased a much wider array of people began to digitize their favorite texts, and these collections began to circulate, first via CD-ROMs, later via the internet.

One of such collection belonged to Maxim Moshkov, who published his library under the name lib.ru in 1994. Moshkov was a graduate of the Moscow State University Department of Mechanics and Mathematics, which played a large role in the digitization of scientific works. After graduation, he started to work for the Scientific Research Institute of System Development, a computer science institute associated with the Russian Academy of Sciences. He describes the early days of his collection as follows:

" I began to collect electronic texts in 1990, on a desktop computer. When I got on the Internet in 1994, I found lots of sites with texts. It was like a dream came true: there they were, all the desired books. But these collections were in a dreadful state! Incompatible formats, different encodings, missing content. I had to spend hours scouring the different sites and directories to find something.

As a result, I decided to convert all the different file-formats into a single one, index the titles of the books and put them in thematic directories. I organized the files on my work computer. I was the main user of my collection. I perfected its structure, made a simple, fast and convenient search interface and

developed many other useful functions and put it all on the Internet. Soon, people got into the habit of visiting the site. […]

For about 2 years I have scoured the internet: I sought out and pulled texts from the network, which were lying there freely accessible. Slowly the library grew, and the audience increased with it. People started to send books to me, because they were easier to read in my collection. And the time came when I stopped surfing the internet for books: regular readers are now sending me the books. Day after day I get about 100 emails, and 10-30 of them contain books. So many books were sent in, that I did not have time to process them. Authors, translators and publishers also started to send texts. They all needed the library."(Мошков, 1999)

In the second half of the 1990's, the Russian Internet—RuNet—was awash in book digitization projects. With the advent of scanners, OCR technology, and the Internet, the work of digitization eased considerably. Texts migrated from print to digital and sometimes back to print again. They circulated through different collections, which, in turn, merged, fell apart, and re-formed. Digital libraries with the mission to collect and consolidate these free-floating texts sprung up by the dozens.

Such digital librarianship was the antithesis of official Soviet book culture: it was free, bottom-up, democratic, and uncensored. It also offered a partial remedy to problems created by the post-Soviet collapse of the economy: the impoverishment of libraries, readers, and publishers. In this context, book digitization and collecting also offered a sense of political, economic and cultural agency, with parallels to the copying and distribution of texts in Soviet times. The capacity to scale up these practices coincided with the moment when anti-totalitarian social sentiments were the strongest, and economic needs the direst.

The unprecedented bloom of digital librarianship is the result of the superimposition of multiple waves of distinct transformations: technological, political, economical and social. "Maksim Moshkov's Library" was ground zero for this convergence and soon became a central point of exchange for the community engaged in text digitization and collection:

[At the outset] there were just a couple of people who started scanning books in large quantities. Literally hundreds of books. Others started proofreading, etc. There was a huge hole in the market for books. Science fiction, adventure, crime fiction, all of this was hugely in demand by the public. So lib.ru was to a large part the response, and was filled by those books that people most desired and most valued.

For years, lib.ru integrated as much as it could of the different digital libraries flourishing in the RuNet. By doing so, it preserved the collections of the many short-lived libraries.

This process of collection slowed in the early 2000's. By that time, lib.ru had all of the classics, resulting in a decrease in the flow of new digitized material. By the same token, the Russian book market was finally starting to offer works aimed at the popular mainstream, and was flooded by cheap romances, astrology, crime fiction, and other genres. Such texts started to appear in, and would soon flood lib.ru. Many contributors, including Moshkov, were concerned that such ephemera would dilute the original

library. And so they began to disaggregate the collection. Self-published literature, "user generated content," and fan fiction was separated into the aptly named samizdat.lib.ru, which housed original texts submitted by readers. Popular fiction--"low-brow literature"—was copied from the relevant subsections of lib.ru and split off. Sites specializing in those genres quickly formed their own ecosystem. [L], the first of its kind, now charges a monthly fee to provide access to the collection. The [f] community split off from [L] the same way that [L] split off from lib.ru, to provide free and unrestricted access to a fundamentally similar collection. Finally, some in the community felt the need to focus their efforts on a separate collection of scientific works. This became Kolhoz collection.

The genesis of a million book scientific library

A Kolhoz (Russian: колхо́з) was one of the types of collective farm that emerged in the early Soviet period. In the early days, it was a self-governing, community-owned collaborative enterprise, with many of the features of a commons. For the Russian digital librarians, these historical resonances were intentional.

The kolhoz group was initially a community that scanned and processed scientific materials: books and, occasionally, articles. The ethos was free sharing. Academic institutes in Russia were in dire need of scientific texts; they xeroxed and scanned whatever they could. Usually, the files were then stored on the institute's ftp site and could be downloaded freely. There were at least three major research institutes that did this, back in early 2000s, unconnected to each other in any way, located in various faraway parts of Russia. Most of these scans were appropriated by the kolhoz group and processed into DJVU[4].

The sources of files for kolhoz were, initially, several collections from academic institutes (downloaded whenever the ftp servers were open for anonymous access; in one case, from one of the institutes of the Chinese academy of sciences, but mostly from Russian academic institutes). At that time (around 2002), there were also several commercialized collections of scanned books on sale in Russia (mostly, these were college-level textbooks on math and physics); these files were also all copied to kolhoz and processed into DJVU. The focus was on collecting the most important science textbooks and monographs of all time, in all fields of natural science.

There was never any commercial support. The kolhoz group never had a web site with a database, like most projects today. They had an ftp server with files, and the access to ftp was given by PM in a forum. This ftp server was privately supported by one of the members (who was an academic researcher, like most kolhoz members). The files were distributed directly by burning files on writable DVDs and giving the

[4] DJVU is a file format that revolutionized online book distribution the way mp3 revolutionized the online music distribution. For books that contain graphs, images and mathematical formulae scanning is the only digitization option. However, the large number of resulting image files is difficult to handle. The DJVU file format allows for the images of scanned book pages to be stored in the smallest possible file size, which makes it the perfect medium for the distribution of scanned e-books.

DVDs away. Later, the ftp access was closed to the public, and only a temporary file-swapping ftp server remained. Today the kolhoz DVD releases are mostly spread via torrents." [5]

Kolhoz amassed around fifty thousand documents, the mexmat collection of the Moscow State University Department of Mechanics and Mathematics (Moshkov's alma mater) was around the same size, the "world of books" collection (mirknig) had around thirty thousand files, and there were around a dozen other smaller archives, each with approximately 10 thousand files in their respective collections.

The Kolhoz group dominated the science-minded ebook community in Russia well into the late 2000's. Kolhoz, however, suffered from the same problems as the early Fidonet-based text collections. Since it was distributed in DVDs, via ftp servers and on torrents, it was hard to search, it lacked a proper catalog and it was prone to fragmentation. Parallel solutions soon emerged: around 2006-7, an existing book site called Gigapedia copied the English books from Kolhoz, set up a catalog, and soon became the most influential pirate library in the English speaking internet.

Similar cataloguing efforts soon emerged elsewhere. In 2007, someone on rutracker.ru, a Russian BBS focusing on file sharing, posted torrent links to 91 DVDs containing science and technology titles aggregated from various other Russian sources, including Kolhoz. This massive collection had no categorization or particular order. But it soon attracted an archivist: a user of the forum started the laborious task of organizing the texts into a usable, searchable format—first filtering duplicates and organizing existing metadata first into an excel spreadsheet, and later moving to a more open, web-based database operating under the name Aleph.

Aleph inherited more than just books from Kolhoz and Moshkov's lib.ru. It inherited their elitism with regard to canonical texts, and their understanding of librarianship as a community effort. Like the earlier sites, Aleph's collections are complemented by a stream of user submissions. Like the other sites, the number of submissions grew rapidly as the site's visibility, reputation and trustworthiness was established, and like the others it later fell, as more and more of what was perceived as canonical literature was uploaded:

"The number of mankind's useful books is about what we already have. So growth is defined by newly scanned or issued books. Also, the quality of the collection is represented not by the number of books but by the amount of knowledge it contains. [ALEPH] does not need to grow more and I am not the only one among us who thinks so. […]

We have absolutely no idea who sends books in. It is practically impossible to know, because there are a million books. We gather huge collections which eliminate any traces of the original uploaders.

My expectation is that new arrivals will dry up. Not completely, as I described above, some books will always be scanned or rescanned (it nowadays happens quite surprisingly often) and the overall process of digitization cannot and should not be stopped. It is also hard to say when the slowdown will occur: I expected it about a year ago, but then library.nu got shut down and things changed dramatically in many respects. Now we are "in charge" (we had been the largest anyways, just now everyone thinks we are in

[5] Anonymous source #1

charge) and there has been a temporary rise in the book inflow. At the moment, relatively small or previously unseen collections are being integrated into [ALEPH]. Perhaps in a year it will saturate.

However, intuition is not a good guide. There are dynamic processes responsible for eBook availability. If publishers massively digitize old books, they'll obviously be harvested and that will change the whole picture." [6]

Aleph's ambitions to create a universal library are limited , at least in terms of scope. It does not want to have everything, or anything. What it wants is what is thought to be relevant by the community, measured by the act of actively digitizing and sharing books. But it has created a very interesting strategy to establish a library which is universal in terms of its reach. The administrators of Aleph understand that Gigapedia's downfall was due to its visibility and they wish to avoid that trap:

"Well, our policy, which I control as strictly as I can, is to avoid fame. Gigapedia's policy was to gain as much fame as possible. Books should be available to you, if you need them. But let the rest of the world stay in its equilibrium. We are taking great care to hide ourselves and it pays off."[7]

They have solved the dilemma of providing access without jeopardizing their mission by open sourcing the collection and thus allowing others to create widely publicized services that interface with the public.They let others run the risk of getting famous.

Mirrors and communities

Aleph serves as a source archive for around a half-dozen freely accessible pirate libraries on the net. The catalog database is downloadable, the content is downloadable, even the server code is downloadable. No passwords are required to download and there are no gatekeepers. There are no obstacle to setting up a similar library with a wider catalog, with improved user interface and better services, with a different audience or, in fact, a different business model.

This arrangement creates a two-layered community. The core group of the Aleph admins maintains the current service, while a loose and ever changing network of 'mirror sites' build on the Aleph infrastructure.

"The unspoken agreement is that the mirrors support our ideas. Otherwise we simply do not interact with them. If the mirrors do support this, they appear in the discussions, on the Web etc. in a positive context. This is again about building a reputation: if they are reliable, we help with what we can, otherwise they should prove the World they are good on their own. We do not request anything from them. They are free to do anything they like. But if they do what we do not agree with, it'll be taken into account in future relations. If you think for a while, there is no other democratic way of regulation: everyone expresses his own views and if they conform with ours, we support them. If the ideology does not match, it breaks down."[8]

[6] Anonymous source #1
[7] Anonymous source #2
[8] Anonymous source #1

The core Aleph team claims to exclusively control only two critical resources: the BBS that is the home of the community, and the book-uploading interface. That claim is, however, not entirely accurate. For the time being, the academic minded e-book community indeed gathers on the BBS managed by Aleph, and though there is little incentive to move on, technically nothing stands in the way of alternatives to spring up. As for the centralization of the book collection: many of the mirrors have their own upload pages where one can contribute to a mirror's collection, and it is not clear how or whether books that land at one of the mirrors find their way back to the central database. Aleph also offers a desktop library management tool, which enables dedicated librarians to see the latest Aleph database on their desktop and integrate their local collections with the central database via this application. Nevertheless, it seems that nothing really stands in the way of the fragmentation of the collection, apart from the willingness of uploaders to contribute directly to Aleph rather than to one of its mirrors (or other sites).

Funding for Aleph comes from the administrators' personal resources as well as occasional donations when there is a need to buy or rent equipment or services:

"[W]e've been asking and getting support for this purpose for years. […] All our mirrors are supported primarily from private pockets and inefficient donation schemes: they bring nothing unless a whole campaign is arranged. I asked the community for donations 3 or 4 times, for a specific purpose only and with all the budget spoken for. And after getting the requested amount of money we shut down the donations."[9]

Mirrors, however, do not need to be non-commercial to enjoy the support of the core Aleph community, they just have to provide free access. Ad-supported business models that do not charge for individual access are still acceptable to the community, but there has been serious fallout with another site, which used the Aleph stock to seed its own library, but decided to follow a "collaborative piracy" business approach.

"To make it utmost clear: we collaborate with anyone who shares the ideology of free knowledge distribution. No conditions. [But] we can't suddenly start supporting projects that earn money. […] Moreover, we've been tricked by commercial projects in the past when they used the support of our community for their own benefit."[10]

The site in question, [e], is based on a simple idea: If a user cannot find a book in its collection, the administrators offer to purchase a digital or print copy, rip it, and sell it to the user for a fraction of the original price—typically under $1. Payments are to be made in Amazon gift cards which make the purchases easy but the de-anonymization of users difficult. [e] recoups its investment, in principle, through resale. While clearly illegal, the logic is not that different from that of private subscription libraries, which purchase a resource and distribute the costs and benefits among club members.

[9] BBS comment posted on Jan 15, 2013
[10] BBS comment posted on Jan 15, 2013

Although from the rights holders' perspective there is little difference between the two approaches, many participants in the free access community draw a sharp line between the two, viewing the sales model as a violation of community norms.

"[e] is a scam. They were banned in our forum. Yes, most of the books in [e] came from [ALEPH], because [ALEPH] is open, but we have nothing to do with them... If you wish to buy a book, do it from legal sources. Otherwise it must be free.[…]

What [e] wants:

- make money on ebook downloads, no matter what kind of ebooks.

- get books from all the easy sources - spend as little effort as possible on books - maximize profit.

- no need to build a community, no need to improve quality, no need to correct any errors - just put all files in a big pile - maximize profit.

- files are kept in secret, never given away, there is no listing of files, there is no information about what books are really there or what is being done.

There are very few similarities in common between [e]and [ALEPH], and these similarities are too superficial to serve as a common ground for communication. […]

They run an illegal business, making a profit."[11]

Aleph administrators describe a set of values that differentiates possible site models. They prioritize the curatorial mission and the provision of long term free access to the collection with all the costs such a position implies, such as open sourcing the collection, ignoring takedown requests, keeping a low profile, refraining from commercial activities, and as a result, operating on a reduced budget . [e] prioritizes the expansion of its catalogue on demand but that implies a commercial operation, a larger budget and the associated high legal risk. Sites carrying Aleph's catalogue prioritize public visibility, carry ads to cover costs but respond to takedown requests to avoid as much trouble as they can. From the perspective of expanding access, these are not easy or straightforward tradeoffs. In Aleph's case, the strong commitment to the mission of providing free access comes with significant sacrifices, the most important of which is relinquishing control over its most valuable asset: its collection of 1.2 million scientific books. But they believe that these costs are justified by the promise, that this way the fate of free access is not tied to the fate of Aleph.

The fact that piratical file sharing communities are willing to make substantial sacrifices (in terms of self-restraint) to ensure their long term survival has been documented in a number of different cases. (Bodó, 2013) Aleph is unique, however in its radical open source approach. No other piratical community has given up all the control over itself entirely. This approach is rooted in the way how it regards the legal status of its subject matter, i.e. scholarly publications in the first place. While norms of openness in the field of scientific knowledge production were first formed in the Enlightenment period, Aleph's

[11] BBS comments posted on Jul 02, 2013, and Aug 25, 2013

copynorms are as much shaped by the specificities of post-Soviet era as by the age old realization that in science we can see further if we are allowed "standing on the shoulders of giants".

Copyright and copynorms around Russian pirate libraries

The struggle to re-establish rightsholders' control over digitized copyrighted works has defined the copyright policy arena since Napster emerged in 1999. Russia brought a unique history to this conflict. In Russia, digital libraries and their emerged in a period a double transformation: the post-Soviet copyright system had to adopt global norms, while the global norms struggled to adapt to the emergence of digital copying.

The first post-Soviet decade produced new copyright laws that conformed with some of the international norms advocated by Western rightsholders, but little legal clarity or enforceability (Sezneva & Karaganis, 2011). Under such conditions, informally negotiated copynorms set in to fill the void of non-existent, unreasonable, or unenforceable laws. The pirate libraries in the RuNet are as much regulated by such norms as by the actual laws themselves.

During most of the 1990's user-driven digitization and archiving was legal, or to be more exact, wasn't illegal. The first Russian copyright law, enacted in 1993, did not cover "internet rights" until a 2006 amendment (Budylin & Osipova, 2007; Elst, 2005, p. 425). As a result, many argued (including the Moscow prosecutor's office), that the distribution of copyrighted works via the internet was not copyright infringement. Authors and publishers, who saw their works appear in digital form, and circulated via CD-ROMs and the internet, had to rely on informal norms, still in development, to establish control over their texts vis-à-vis enthusiastic collectors and for-profit entrepreneurs.

The HARRYFAN CD was one of the early examples of a digital text collection in circulation before internet access was widespread. The CD contained around ten thousand texts, mostly Russian science fiction. It was compiled in 1997 by Igor Zagumenov, a book enthusiast, from the texts that circulated on the Holy Spirit BBS. The CD was a non-profit project, planned to be printed and sold in around 1000 copies. Zagumenov did get in touch with some of the authors and publishers, and got permission to release some of their texts, but the CD also included many other works that were uploaded to the BBS without authorization. The CD included the following copyright notice, alongside the name and contact of Zagumenov and those who granted permission:

Texts on this CD are distributed in electronic format with the consent of the copyright holders or their literary agent. The disk is aimed at authors, editors, translators and fans SF & F as a compact reference and information library. Copying or reproduction of this disc is not allowed. For the commercial use of texts please refer directly to the copyright owners at the following addresses.

The authors whose texts and unpublished manuscripts appeared in the collection without authorization started to complain to those whose contact details were in the copyright notice. Some complained about the material damage the collection may have caused to them, but most complaints focused on moral rights: unauthorized publication of a manuscript, the mutilation of published works, lack of attribution, or the removal of original copyright and contact notices. Some authors had no problem

appearing in non-commercially distributed collections but objected to the fact that the CDs were sold (and later overproduced in spite of Zagumenov's intentions).

The debate, which took place in the book-related fora of Fidonet, had some important points. Participants again drew a significant distinction between free access provided first by Fidonet (and later by lib.ru, which integrated some parts of the collection) and what was perceived as Zagumenov's for-profit enterprise—despite the fact that the price of the CD only covered printing costs. The debate also drew authors' and publishers' attention to the digital book communities' actions, which many saw as beneficial as long as it respected the wishes of the authors. Some authors did not want to appear online at all, others wanted only their published works to be circulated.

Lib.ru of course integrated the parts of the HARRYFAN CD into its collection. Moshkov's policy towards authors' rights was to ask for permission, if he could contact the author or publisher. He also honored takedown requests sent to him. In 1999 he wrote on copyright issues as follows:

The author's interests must be protected on the Internet: the opportunity to find the original copy, the right of attribution, protection from distorting the work. Anyone who wants to protect his/her rights, should be ready to address these problems, ranging from the ability to identify the offending party, to the possibility of proving infringement.[…]

Meanwhile, it has become a stressing question how to protect authors-netizens' rights regarding their work published on the Internet. It is known that there are a number of periodicals that reprint material from the Internet without the permission of the author, without payment of a fee, without prior arrangement. Such offenders need to be shamed via public outreach. The "Wall of shame" website is one of the positive examples of effective instruments established by the networked public to protect their rights. It manages to do the job without bringing legal action - polite warnings, an indication of potential trouble and shaming of the infringer.

Do we need any laws for digital libraries? Probably we do, but until then we have to do without. Yes, of course, it would be nice to have their status established as "cultural objects" and have the same rights as a "real library" to collect information, but that might be in the distant future. It would also be nice to have the e-library "legal deposits" of publications in electronic form, but when even Leninka [the Russian State Library] cannot always afford that, what we really need are enthusiastic networkers. […]

The policy of the library is to take everything they give, otherwise they cease to send books. It is also to listen to the authors and strictly comply with their requirements. And it is to grow and prosper. […] I simply want the books to find their readers because I am afraid to live in a world where no one reads books. This is already the case in America, and it is speeding up with us. I don't just want to derail this process, I would like to turn it around."

Moshkov played a crucial role in consolidating copynorms in the Russian digital publishing domain. His reputation and place in the Russian literary domain is marked by a number of prizes[12], and the library's continued existence. This place was secured by a number of closely intertwined factors:

- Framing and anchoring the digitization and distribution practice in the library tradition.
- The non-profit status of the enterprise.
- Respecting the wishes of the rights holders even if he was not legally obliged to do so.
- Maintaining active communication with the different stakeholders in the community, including authors and readers.
- Responding to a clear gap in affordable, legal access.
- Conservatism with regard to the book, anchored in the argument that digital texts are not substitutes for printed matter.

Many other digital libraries tried to follow Moshkov's formula, but the times were changing. Internet and computer access left the sub-cultural niches and became mainstream; commercialization became a viable option and thus an issue for both the community and rightsholders; and the legal environment was about to change.

Formalization of the IP regime in the 2000s

As soon as the 1993 copyright law passed, the US resumed pressure on the Russian government for further reform. Throughout the period—and indeed to the present day—US Trade Representative Special 301 reports cited inadequate protections and lack of enforcement of copyright. Russia's plans to join the WTO, over which the US had effective veto power, also became leverage to bring the Russian copyright regime into compliance with US norms.

Book piracy was regularly mentioned in Special 301 reports in the 2000s, but the details, alleged losses, and analysis changed little from year to year. The estimated $40M USD losses per year throughout this period were dwarfed by claims from the studios and software vendors, and clearly were not among the top priorities of the USTR. For most of the decade, the electronic availability of bestsellers and academic textbooks was seen in the context of print substitution, rather than damage to the non-existent electronic market. And though there is little direct indication, the Special 301 reports name sites which (unlike lib.ru) were serving audiences beyond the RuNet, indicating that the focus of enforcement was not to protect US interests in the Russian market, but to prevent sites based in Russia to cater for demand in the high value Western-European and US markets.

A 1998 amendment to the 1993 copyright law extended the legal framework to encompass digital rights, though in a fashion that continued to produce controversy. After 1998, digital services had to license content from collecting societies, but those societies needed no permission from rightsholders provided they paid royalites. The result was a proliferation of collective management organizations, competing to license the material to digital services (Sezneva and Karaganis, 2011), which under this arrangement

[12] ROTOR, the International Union of Internet Professionals in Russia voted lib.ru as the "literary site of the year" in 1999,2001 and 2003, "electronic library of the year" in 2004,2006,2008,2009, and 2010, "programmer of the year" in 1999, and "man of the year" in 2004 and 2005.

were compliant with Russian law, but were regarded as illegal by Western rights holders who claimed that the Russian collecting societies were not representing them.

The best known of dispute from this time was the one around the legality of Allofmp3.com, a site that sold music from western record labels at prices far below those iTunes or other officially licensed vendors. AllofMP3.com claimed that it was licensed by ROMS, the Russian Society for Multimedia and Internet (Российское общество по мультимедиа и цифровым сетям (НП РОМС)), but despite of that became the focal point of US (and behind them, major label) pressure, leading to an unsuccessful criminal prosecution of the site owner and eventual closure of the site in 2007. Although Lib.ru had some direct agreements with authors, it also licensed much of its collection from ROMS, and thus was in the same legal situation as AllofMP3.com. .

Lib.ru avoided the attention of foreign rightholders and Russian state pressure and even benefited from state support during the period, the receiving a $30,000 grant from the Federal Agency for Press and Mass Communications to digitize the most important works from the 1930's. But the chaotic licensing environment that governed their legal status also came back to haunt them. In 2005, a lawsuit was brought against Moshkov by KM Online (KMO), an online vendor that sold digital texts for a small fee. Although the KMO collection—like every other collection—had been assembled from a wide range of sources on the Internet, KMO claimed to pay a 20% royalty on its income to authors. In 2004 KMO requested that lib.ru take down works by several authors with whom (or with whose heirs) KMO claimed to be in exclusive contract to distribute their texts online. KMO's claims turned out to be only partly true. KMO had arranged contracts with a number of the heirs to classics of the Soviet period, who hoped to benefit from an obscure provision in the 1993 Russian copyright law that granted copyrights to the heirs of politically prosecuted and later rehabilitated Soviet-era authors. Moshkov, in turn, claimed that he had written or oral agreements with many of the same authors and heirs, in addition to his agreement with ROMS.

The lawsuit was a true public event. It generated thousands of news items both online and in the mainstream press. Authors, members of the publishing industry, legal professionals, librarians, internet professionals publicly supported Moshkov, while KMO was seen as a rogue operator that would lie to make easy money on freely-available digital resources.

Eventually, the court ruled that KMO indeed had one exclusive contract with Eduard Gevorgyan, and that the publication of his texts by Moshkov infringed the moral (but not the economic) rights of the author. Moshkov was ordered to pay 3000 Rubles (approximately $100) in compensation.

The lawsuit was a sign of a slow but significant transformation in the Russian print ecosystem. The idea of a viable market for electronic books began to find a foothold. Electronic versions of texts began to be regarded as potential substitutes for the printed versions, not advertisements for them or supplements to them. More and more commercial services emerged, which regard the well-entrenched free digital libraries as competitors. As Russia continued to bring its laws into closer conformance with WTO requirements, ahead of Russia's admission in 2012, western rightsholders gained enough power to demand enforcement against RuNet pirate sites. The kinds of selective enforcement for political or

business purposes, which had marked the Russian IP regime throughout the decade (Sezneva & Karaganis, 2011), slowly gave way to more uniform enforcement.

Closure of the Legal Regime

The legal, economic, and cultural conditions under which Aleph and its mirrors operate today are very different from those of two decades earlier. The major legal loopholes are now closed, though Russian authorities have shown little inclination to pursue Aleph so far:

I can't say whether it's the Russian copyright enforcement or the Western one that's most dangerous for Aleph; I'd say that Russian enforcement is still likely to tolerate most of the things that Western publishers won't allow. For example, lib.ru and [L] and other unofficial Russian e-libraries are tolerated even though far from compliant with the law. These kinds of e-libraries could not survive at all in western countries.[13]

Western publishers have been slow to join record, film, and software companies in their aggressive online enforcement campaigns, and academic publishers even more so. But such efforts are slowly increasing, as the market for digital texts grows and as publishers benefit from the enforcement precedents set or won by the more aggressive rightsholder groups. The domain name of [os], one of the sites mirroring the Aleph collection was seized, apparently due to the legal action taken by a US rightholder, and it also started to respond to DMCA notices, removing links to books reported to be infringing. Aleph responds to this with a number of tactical moves:

We want books to be available, but only for those who need them. We do not want [ALEPH] to be visible. If one knows where to get books, there are here for him or her. In this way we stay relatively invisible (in search engines, e.g.), but all the relevant communities in the academy know about us. Actually, if you question people at universities, the percentage of them is quite low. But what's important is that the news about [ALEPH] is spread mostly by face-to-face communication, where most of the unnecessary people do not know about it. (Unnecessary are those who aim profit)[14]

The policy of invisibility is radically different from Moshkov's policy of maximum visibility. Aleph hopes that it can recede into the shadows where it will be protected by the omerta of academics sharing the sharing ethos:

In Russian academia, [Aleph] is tacitly or actively supported. There are people that do not want to be included, but it is hard to say who they are in most cases. Since there are DMCA complaints, of course there are people who do not want stuff to appear here. But in our experience the complainers are only from the non-scientific fellows. […] I haven't seen a single complaint from the authors who should constitute our major problem: professors etc. No, they don't complain. Who complains are either of such type I have mentioned or the ever-hungry publishers.[15]

[13] Anonymous source #1
[14] Anonymous source #1
[15] Anonymous source #1

The protection the academic community has to offer may not be enough to fend off the publishers' enforcement actions. The option to recede further into the darknets and hide behind the veil of privacy technologies is one option the Aleph site has: the first mirror on I2P, an anonymizing network designed to hide the whereabouts and identity of web services is already operational. But

[i]f people are physically served court invitations, they will have to close the site. The idea is, however, that the entire collection is copied throughout the world many times over, the database is open, the code for the site is open, so other people can continue.[16]

On methodology

We tried to reconstruct the story behind Aleph by conducting interviews and browsing through the BBS of the community. Access to the site and community members was given under a strict condition of anonymity. We thus removed any reference to the names and URLs of the services in question.

At one point we shared an early draft of this paper with interested members and asked for their feedback. Beyond access and feedback, community members were helping the writing of this article by providing translations of some Russian originals, as well as reviewing the translations made by the author. In return, we provided financial contributions to the community, in the value of 100 USD.

We reproduced forum entries without any edits to the language, we, however, edited interviews conducted via IM services to reflect basic writing standards.

[16] Anonymous source #1

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