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On: 30 November 2011, At: 08:06

Publisher: Routledge

Informa Ltd Registered in England and Wales Registered Number: 1072954 Registered office: Mortimer House, 37-41 Mortimer Street, London W1T 3JH, UK



Slavic & East European Information Resources

Publication details, including instructions for authors and subscription information:

<http://www.tandfonline.com/loi/wsee20>

Open Access and Liberal Education: A Look at Armenia, Azerbaijan, and Georgia

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Available online: 29 Nov 2011

To cite this article: D. Aram Donabedian & John Carey (2011): Open Access and Liberal Education: A Look at Armenia, Azerbaijan, and Georgia, *Slavic & East European Information Resources*, 12:4, 201-223

To link to this article: <http://dx.doi.org/10.1080/15228886.2011.621113>

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ARTICLE

Open Access and Liberal Education: A Look at Armenia, Azerbaijan, and Georgia

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In the post-Soviet era, libraries in Armenia, Azerbaijan, and Georgia have faced increasing budgetary challenges. In response to socioeconomic restructuring and the introduction of private enterprise, libraries have been forced to seek alternatives to commercial publishing and licensing models. In this article the authors will assess the status of the open access movement and of Internet filtering controls in the countries of the South Caucasus. They will also argue that developing open models for scholarly communication is crucial to the strengthening of liberal education and civic participation in these aspiring democracies. Libraries, in their role as providers of and advocates for shared information, have a vital role to play in this mission.

KEYWORDS *Armenia, Azerbaijan, critical pedagogy, critical thinking, Georgia, Internet filtering, liberal education, Open access, South Caucasus, transparency*

Do not think your rulers are not interested in what you think. That is all they are interested in about you.

—Michael Parenti¹

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INTRODUCTION

Education to create an informed citizenry is vital to democratic participation. Yet, twenty years after the division of the Soviet Union, higher education in the South Caucasus continues to face fundamental challenges. At the level of infrastructure, this challenge takes the form of reduced budgets following the collapse of Soviet financing, resulting in the physical deterioration of libraries. On a pedagogical level, higher education in the region remains structured around the regimented “experts” model promulgated by the Soviets, to the detriment of those critical thinking skills central to liberal education in the West. Finally, at the scholarship level, researchers are hampered by huge discrepancies between resource fees and local incomes. And even where the technological infrastructure does exist, both researchers and the general public may sometimes find their Internet use restricted, as national governments—already embedded in a complex matrix of geopolitical tensions—extend their conflicts into cyberspace.

Despite this challenging environment, however, scholars and institutions in the South Caucasus are pushing ahead with initiatives that will maintain and even increase access to information resources. The open access (OA) movement in scholarly communication offers researchers a means of circumventing both subscription and permissions barriers. This article will show that open access journals, digital repositories and Internet use are on the increase in Armenia, Azerbaijan, and Georgia even while advocates acknowledge that much remains to be done. However, even as researchers in these countries open multiple new channels to the global scholarly community, their governments, and those of the other Commonwealth of Independent States (CIS) nation-states, are developing a reputation as innovators in a different area—that of Internet filtering and access control. We will argue below that impediments to the free flow of information stifle the development of critical thinking skills crucial to creating an informed, engaged citizenry and therefore, by extension, threaten to undermine the region’s progress toward democracy.

POST-SOVIET LIBRARY CHALLENGES AND INITIATIVES

Following the collapse of the Soviet Union, libraries in the former republics have enjoyed varying fortunes. More specifically, however, libraries in the South Caucasus have faced increasing budgetary challenges. In response to socioeconomic restructuring and the introduction of private enterprise, they have been forced to seek alternatives to commercial publishing and licensing models. The development of new models of scholarly communication plays an important role in addressing a lack of research library materials as a result of escalating costs. However, before addressing the

importance of these developments both financially and in terms of strengthening liberal education and civic participation, it will be helpful to briefly look at the development of research libraries since Armenia, Azerbaijan, and Georgia gained their independence in the early 1990s and explore, in part, the university system inherited from the Soviet era.

Under Soviet rule, libraries in the South Caucasus enjoyed a steady level of support. According to Tatiana Usova, libraries were a priority for the Communist Party because they were “assigned a mission of spreading socialist ideas to the masses.”² The collapse of the Soviet Union in 1991 left the former republics without the flow of funds necessary to support their infrastructures. This “cut short the libraries’ ability to computerize their catalogs.”³ In addition, fractious republics that worked together cooperatively under the force of Soviet law asserted their independence after more than seventy years. In the case of Armenia and Azerbaijan, this new freedom found expression in the continuing war over Nagorno-Karabakh while “Georgia has survived civil wars and the instability generated by the secession of Abkhazia and South Ossetia.”⁴ This outbreak of hostilities and political instability has compounded the problem of decreased funding.

As of 2005, Armenia, Azerbaijan, and Georgia had had “no budget to buy resources for 15 years—no new books, no journal subscriptions, no databases.”⁵ Unfortunately, this period of resource deprivation coincided with a time of staggering increases in academic journal prices worldwide. Consider the following statement, released in November of 2003 by the Cornell University Libraries:

[T]he top research libraries in North America have been spending ever more money on ever fewer publications for at least the past 15 years: The prices of serials have increased by 215 percent, library expenditures on serials have gone up by 210 percent, and the serials titles purchased by large academic research libraries have decreased by 5 percent. The Consumer Price Index [in the United States] during the same period has increased by only 62 percent.⁶

These price increases were exacerbated by a wave of consolidation within the commercial publishing industry. As John Willinsky notes, when major houses such as Reed Elsevier, Taylor & Francis, and Springer merge with smaller publishers and acquire their journals, the merger results in an average price increase of more than 20% for each journal.⁷ If even elite institutions in North America were struggling with these conditions during the relatively prosperous 1990s, then imagine the effects on libraries in the former Soviet republics.

However, during this time Armenia, Azerbaijan, and Georgia, together with overseas organizations, began an initiative designed to modernize their library resources and infrastructures. In 2001 the Carnegie Corporation of

New York “awarded the ALA [American Library Association] International Relations Office a \$125,000 grant for a two-and-a-half year project in the South Caucasus . . . The three most prestigious state libraries in the region were selected for the project since they have been library leaders in their respective republics: Baku State University Library in Azerbaijan, Yerevan State University in Armenia, and Tbilisi State University in Georgia. The grant provided the libraries with books, databases, library systems, interlibrary loan software, U.S. library partners, computers, a workshop, and face-to-face meetings.” Moreover, “OCLC [Online Computer Library Center] donated access to its FirstSearch database for the libraries for two years, and ALA was able to get deeply discounted Ariel software for the libraries from Infotrieve. With access to FirstSearch and Ariel, the libraries . . . [were] . . . able to search for and share resources through interlibrary loan, thanks to the willingness of Florida Atlantic University, Georgia State University, the University of Illinois at Chicago, and Indiana University to provide free electronic loans.” Indeed, as a further result of this initiative, resource-sharing programs were launched “within each country, as well as regionally. The libraries also provide access to e-books and have installed wireless technology for searching databases and the library catalogs.” Finally, “Armenia, with Yerevan taking the lead through a grant from the Open Society Institute . . . created a consortium that purchased Aleph systems from Ex Libris for 12 libraries.”⁸ This was also done “towards developing an ‘Armenian Libraries Union Catalog’.”⁹ Funds from the ALA project also allowed Baku State University and Tbilisi State University to purchase a Russian Irbis ILS system.¹⁰

Although Armenia initially selected Aleph systems for developing its union catalog, “starting from 2006 in the Fundamental Scientific Library (FSL) activities started towards introducing, piloting and implementing FOSS [free and open source software] ILS [integrated library system] solutions in the libraries, for a variety of reasons including the substantial technical knowledge required to administer the Aleph system, which also had significant costs involved in licensing fees and maintenance and support contracts.” Because of its affordability as an alternative to Ex Libris’ proprietary ILS solution, the Canadian-based Evergreen system was selected to implement, host, and maintain the Evergreen server in Armenia. Currently, “the National Academy of Sciences (NAS) institution libraries are developing their Union Catalog using this server . . . [T]he Koha system is in use in the American University of Armenia library.”¹¹ These ongoing and welcome initiatives notwithstanding, the financial challenges faced by the three republics have not eased since that time. Indeed, since the start of the global recession of 2008, and with the increasing cost of electronic databases and books, the need for library resources and a structure of financial support is more urgent than in the past.

LIBERAL EDUCATION AND DEMOCRATIC PARTICIPATION

Much of this urgency comes from the fact that for the South Caucasus states, a crisis in liberal education could threaten democratic progress itself. Advocates for liberal education in the humanities have long argued that the critical thinking skills engendered in these fields are crucial to developing and maintaining democratic discourse. Instructors help students develop these critical thinking skills through the practice of critical pedagogy, defined as “a domain of education and research that studies the social, cultural, political, economic, and cognitive dynamics of teaching and learning.”¹² Developed in the 1960s by the Brazilian educator Paulo Freire, this approach to teaching acknowledges the power relationships inherent in any educational setting. Often, practitioners of critical pedagogy examine how education can “reflect or subvert democratic practices and the larger culture of democracy” or “validate or challenge . . . power dynamics.”¹³ Henry Giroux, for example, argues that critical pedagogy “opens up a space where students should be able to come to terms with their own power as critical agents; it provides a sphere where the unconditional freedom to question and assert is central to the purpose of the university, if not to democracy itself.”¹⁴ Advocates of critical pedagogy widely agree on the centrality of liberal education to the health of a democratic society. “Democracy is a fragile entity,” Joe Kincheloe writes, “and embedded in educational policy and practice are the very issues that make or break it.”¹⁵ This fragility underscores the need for South Caucasus countries, as they build democratic institutions, to strengthen and transform the educational models that help provide the foundation for civic participation.

As the foremost practitioners of information literacy at most institutions, librarians have a vital role to serve in the process of critical pedagogy. Erin Ellis and Kara Whatley describe the increasing emphasis on critical thinking skills in library instruction, writing that “[s]ince the mid 1980s, academic libraries have viewed their expanding instruction programs not just in terms of teaching particular library tools, but in terms of teaching students to be knowledgeable information consumers.”¹⁶ This parallels the Association of College and Research Libraries’ (ACRL) *Information Literacy Competency Standards for Higher Education*, in which Standard 3 states that the “information literate student evaluates information and its sources critically and incorporates selected information into his or her knowledge base or value system”¹⁷ This acknowledgment that the librarians’ work affects students’ value systems illustrates the ACRL’s view that information literacy is not an abstract notion or a neutral force—it can and should have an impact in the wider community. Through “critical information literacy,” librarians teach students to “question the social, political, and economic forces involved in the creation, transmission, reception, and use of information,”

thereby drawing attention to “the complicity of the individual—and the individual as a community member—in information-based power structures and struggles.”¹⁸ As Benjamin Harris writes, “[w]hile some will be satisfied with the recognition that social and political inequality exists between peoples, the being of critical consciousness will also act in response to these findings.”¹⁹ Romona Goomansingh also stresses the link between critical consciousness and agency, writing that “[w]ithout critical engagement, there will be apathy for critical action which is fundamental to the hope for democracy.”²⁰ It is this capacity for critical agency, and the accompanying move toward social praxis, that helps students grow into engaged participants in a functioning democracy.

This agency on the part of citizens is crucial because democracy is “not something done to people, but a process and a way of life pursued with an expanding community of others.” For the purposes of this article, we define democracy not in terms of the mechanisms of representative government, but in this more social and communal sense. Thus, education can “make or break” democracy because education is what prepares citizens to take part in a common discourse. Frank inquiry is an essential component of this discourse. As Edward Morgan notes, our public discourse suffers when media “exclude critical conversation about fundamental flaws” or “distract the public from . . . learning about their society and its institutions.” Rather, a sound democratic discourse should “enlighten and inform the people so they achieve a level of understanding that enables them to act as citizens.”²¹ Ideally, citizens engaged in this discourse will not only ask the right questions of their society, but also follow through with actions that strengthen democratic institutions.

Of course, even established democracies must work to create and maintain such citizens—and losing ground is possible. Michael Gorman, a former president of the American Library Association, has commented that even “as American democracy has reached its theoretical ideal [universal enfranchisement] . . . it is in danger because of an increasingly ill-informed, easily manipulated, and apathetic electorate.” Gorman sees critical thinking skills as a remedy for our “culture of sound bites,” arguing that “[t]he best antidote to being conned by television is a well-reasoned book, article, or other text.”²² However, as we shall discuss, the barriers to developing an informed and information-literate public are not just financial. To implement more fully and to benefit from critical information literacy, Armenia, Azerbaijan, and Georgia will also have to overcome structural obstacles inherited from the Soviet model of higher education.

Norma Jo Baker and Chad Thompson characterize well the nature of the Soviet system of education, which continues to influence educational pedagogy in the CIS today. In the former Soviet Union knowledge was centralized and could be referred to as a received “truth” transferred from professor “experts” to accepting and, as encouraged by the system, unquestioning

students. Indeed, students were, and often still are, expected to repeat “such ordained expertise. Independent student work or choice is foreign to this process, and a direct challenge to the entire educational paradigm—a paradigm in which students have invested as heavily as their instructors.”

By contrast, the Western approach to university education over the last seventy years has, at its best, been informed by the values of liberal education. In fact, it “has been a philosophy of education that empowers individuals with a core knowledge and transferable skills and cultivates social responsibility and a strong sense of ethics and values. Characterized by challenging encounters with important issues, a liberal education prepares graduates both for socially valued work and for civic leadership in their society.”²³ Upon independence, CIS countries acknowledged the value of liberal education but rarely gave it a significant place within the curriculum. However, this may be changing. In February of 2011, Professor John Schoeberlein of Harvard University delivered a lecture entitled “What are the Benefits of Liberal Education?” at the Free University of Tbilisi, Georgia. While Schoeberlein’s lecture focused specifically on his home field of anthropology, he raised many broadly applicable points, including how liberal education can “equip students with the critical abilities to think analytically, problem-solve, and understand larger aspects of culture and societal behavior”²⁴ Lectures such as this one indicate increased appreciation of the value of liberal education in the region and suggest that more concrete changes may follow.

Like scholars at non-elite institutions around the world, researchers in the South Caucasus are turning to a global network of colleagues and resources to further their pursuits. Often, researchers in the sciences are the earliest adopters of tools and strategies that later spread to scholars in other disciplines. In part this is due to the high prices of scientific, technical, and medical journals and databases, but part of the answer also comes from the nature of contemporary scientific research. Science in the twenty-first century, as never before, “operates at the global level as a network—an invisible college. . . . The more elite the scientist, the more likely it is that he or she will be an active member of the global invisible college.”²⁵ As we will see below, many open access initiatives in the South Caucasus focus on scientific journals or issue from national academies of science within the various countries. To assess the status of open access in the region, we turn now to specific country profiles.

OPEN ACCESS IN THE SOUTH CAUCASUS

Armenia, Azerbaijan, and Georgia are all actively engaged in open access activities and in developing modern scholarly communication resources. As we will see, these three countries currently publish a number of open

access journals, and all possess some form of digital library or institutional repository (IR). Furthermore, all of these activities have taken place in the context of the political uncertainty and ongoing financial challenges described above. Below follows a discussion of open access initiatives in each of the South Caucasus countries.

Armenia

According to Tigran Zargaryan, Director of the Fundamental Scientific Library of the National Academy of Sciences (NAS) of Armenia, open access in the country is in its “embryonic phase.”²⁶ Armenia currently has 5 OA journals, published with EPrints software. These include (1) *Hayastani Gitut'yunneri Azgayin Akademiayi tegbekagir* [Mechanics, Proceedings of National Academy of Sciences of Armenia], <http://mechanics.asj-oa.am/>; (2) *Hayastani kensabanakan bandes* [Biological Journal of Armenia], <http://biology.asj-oa.am/>; (3) *Armenian Journal of Mathematics*, <http://ajm.asj-oa.am/>; (4) *Armenian Journal of Physics*, <http://ajp.asj-oa.am/>; and (5) *Patmabanaserakan bandes* [Historical-Philological Journal], <http://hpj.asj-oa.am/>.²⁷ It is not surprising that so many of these titles are in the sciences. As Wagner notes, public support for the sciences is nothing new, but it increased sharply in the latter part of the twentieth century due to “growing appreciation of science’s contribution to national security, following the outbreak of two global conflicts in three decades.” Furthermore, “in the years just after World War II, it became clear that science and technology catalyzed economic innovation and growth.”²⁸ Thus, given the history of the South Caucasus during the twentieth century, and the political and military competition since then, it makes sense for governments in the region to seek both security and economic development through science.

The NAS in Armenia has also launched an online Fundamental Scientific Library (<http://www.flib.sci.am/eng/node/1>) for “mass digitization of National Academy of Science Journals, all of which are available in the public domain. [I]n . . . [the] . . . near future some of these journals will obtain OA status.” Currently there is a “[l]ow awareness from academics about the benefits of OA” and according to Dr. Zargaryan, “here we should work hard.” He also saw the need to “implement . . . an information repository,” and to consider “how to involve Universities in [the] OA movement.”²⁹ Dr. Zargaryan also relayed that open access is being taught as a subject in the NAS’ library and information science program. In 2011 an NAS graduate, a librarian from the State Linguistic University, plans to implement an institutional repository there.

The organization Electronic Information for Libraries (EIFL) bears mention in relation to the CIS community. According to their mission statement, this international not-for-profit organization “works with libraries

worldwide to enable access to digital information in developing and transition countries.”³⁰ Several researchers within the South Caucasus countries have forged connections with EIFL. In Armenia, Tigran Zakaryan at the Institute of Radiophysics and Electronics is EIFL-OA country coordinator, and Zargaryan is the ILS project coordinator for EIFL-FOSS, a project that supports the international distribution of free and open source software.³¹ Along with open access publishing, such initiatives help researchers in developing countries circumvent the cost and permissions barriers encountered with commercial vendors.

Azerbaijan

Azerbaijan’s Khazar University holds the distinction of having the only institutional repository, Khazar University Institutional Repository (KUIR), <http://dspace.khazar.org>, in the Caucasus and Central Asia. The repository currently contains more than 650 items, almost all “full-text and freely accessible . . . [including] peer-reviewed journal articles, textbooks, theses and dissertations, presentations,” and other materials, according to Tatyana Zayseva, Director of the Library Information Center at Khazar University. Included are “peer-reviewed post-publication outputs or post-prints and also a range of grey literature such as pre-prints or papers not intended for publication; working papers and methodologies; theses and dissertations; conference contributions (unpublished); [and] project reports.”³² The inclusion of grey literature in this database adds some value for the user, since grey literature—research not usually available commercially or through traditional serials—can often be harder for researchers to locate and access.

Dr. Zayseva indicates that at the time of this writing, Khazar University “is still in the process of establishing guiding principles and best practices” for KUIR. The university has, however, prioritized the elements fundamental to the successful implementation of the repository. These include:

- Identification of the content and its ownership;
- Identification of appropriate workflows and metadata schemas for the identified content types and subsequent testing;
- Integration of repository content with existing resources; open access catalog system within Khazar University;
- Development within the University of appropriate frameworks and policies for the capturing and use of repository content;
- Promotion and expansion of the repository within the Khazar University, Azerbaijani Library Information Consortium, and partner universities.³³

These concerns—technical, administrative, and promotional—give some idea of the scope of such an undertaking. On a more subtle level, librarians have given careful consideration to the number and kinds of

collections to be housed in KUIR. As Zayseva writes, “We envisaged having four main collections (Academic Support, Library Information Center, Periodicals, and Schools) to encompass the wide range of materials we wanted to expose through the repository and to assign content leaders and experts for each of the collection. Khazar University’s academic schools and department, Khazar University Press have been providing input and supporting on the content aspect. The teams of specialists would manage the workflows associated with content . . . [and provide] ongoing maintenance of the repository, including the application of appropriate metadata standards.” In citing the reasons for founding the repository, Zayseva touches on matters that are an important part of IR promotion to academics who might not be convinced of their real advantages. As she mentioned, the repository’s primary mission is “to preserve and showcase the huge range and variety of outputs from the University, and to assist KU authors in promoting their research to a wider audience with their ideas and findings more readily accessible to all interested Community members.”³⁴ Indeed, as EIFL Open Access Programme Manager Iryna Kuchma has noted (paraphrasing Leslie Chan), “open access provides improved visibility, an increase in submissions from a wider range of countries, improved circulation, and worldwide reach.”³⁵ While debate continues within the library community about the possible citation advantages of OA publishing in the West, it seems hard to deny that removal of subscription barriers would be especially important for researchers in an area such as the South Caucasus.

For many of these same reasons, Azerbaijan has also begun publishing OA journals. Azerbaijan currently has 3 OA journals: (1) *Journal of Qafqaz University*, <http://www.qafqaz.edu.az/index.php?z=1157>; (2) *Azerbaijan Focus Journal of International Affairs*, a publication of the Center for Strategic Studies under the President of the Republic of Azerbaijan, <http://sam.gov.az/en/journals/azerbaijan-focus>; and (3) *International Journal of Academic Research*, published by Progress Publishing House, <http://www.ijar.lit.az/>. It is interesting to note that in contrast to the Armenian OA journals, none of the Azerbaijani journals has a strictly scientific focus, possibly because scientific literature is being distributed via the KUIR repository as e-prints. As in Armenia, the nonprofit group EIFL is at work in Azerbaijan as well. Elchin Mammadov of the Baku American Center is the EIFL-OA country coordinator.³⁶

Georgia

Georgia currently has 5 OA journals: (1) *Bulletin of TICMI, Subject: Mathematics*, published by Tbilisi University Press, <http://www.emis.de/journals/TICMI/blt/bulletin.htm>; (2) *Computer Science and Telecommunications*, published by the Georgian Internet Academy and Georgian Technical University, http://gesj.internet-academy.org.ge/en/title_en.php?

b_sec=§ion_l=comp; (3) *Education Sciences and Psychology*, http://gesj.internet-academy.org.ge/en/title_en.php?b_sec=§ion_l=edu, also published by the Georgian Internet Academy and Georgian Technical University; (4) *Proceedings of Tbilisi A. Razmadze Mathematical Institute*, <http://www.rmi.acnet.ge/proceedings/>; and (5) *Memoirs on Differential Equations and Mathematical Physics*, published by the Georgian National Academy of Sciences and the A. Razmadze Mathematical Institute, <http://www.jeomj.rmi.acnet.ge/memoirs/>. In addition, the National Parliamentary Library of Georgia maintains a full-text collection of electronic theses and dissertations on its site *dLibrary*: <http://www.nplg.gov.ge/dlibrary/coll/0002/view.html>. Georgia's OA journals reflect the same emphasis on technical subjects—mathematics, physics, and computer science—seen in the Armenian OA publishing. As in the rest of the South Caucasus, EIFL has a presence in Georgia. Natia Gabrichidze, Ilia State University Library, is the EIFL-OA country coordinator.³⁷

Summary and Comparison: Open Access

Table 1 shows how open access publishing, whether in the form of journals or institutional repositories, can be found across the South Caucasus, with more planned. As shown in the table, Armenia and Georgia currently publish five open access journals and Azerbaijan three. However, as mentioned earlier, Azerbaijan offers the only institutional repository in the region and thus may serve as a useful model for its neighbors to establish a comparable practice. Similarly, Azerbaijan may look to Armenia and Georgia in the development of a national or federal-level digital library. That the republics of the region could make these strides in the face of economic collapse and political instability should be viewed as a triumph. However, having the necessary technological infrastructure and expertise in place does not in itself guarantee success for researchers. Digital scholarship also depends upon reasonably free interaction with the “global invisible college” previously described. Yet even as the scholarly communications infrastructure in the South Caucasus rises to meet international standards, political actors in all three countries are moving to restrict the volume and nature of information available via the Internet, and it is to this we turn next.

TABLE 1 Open Access Publishing and IRs in the South Caucasus, 2011.

Country	Open access journals	Institutional repositories	Federal-level digital libraries
Armenia	5	0	1
Azerbaijan	3	1	0
Georgia	5	0	1

Sources: Zargaryan, Zayseva, Kuchma (personal communications).

INTERNET FILTERING AND TRANSPARENCY

Open scholarship relies for its effectiveness on access to a spectrum of online resources. However, as mentioned in the Introduction, the countries of the CIS are developing a reputation for leading the world in “the development of next-generation controls” that filter and block selected sites. Ronald Deibert et al. argue that the politically volatile and authoritarian nature of life in the CIS and the Internet’s potential to bring about regime change has made the authorities particularly concerned with how they might best exercise their control. Indeed, authoritarianism characterizes the great majority of CIS countries. In the Economist Intelligence Unit’s *Index of Democracy* [for 2008, <http://graphics.eiu.com/PDF/Democracy%20Index%202008.pdf>], they write, Armenia and Georgia are classified as *hybrid regimes* (indicating a blend of democratic and authoritarian elements) and Azerbaijan, *authoritarian*. “Throughout the CIS, this creeping authoritarianism is evident in just about every facet of social and political life. Independent media are stifled, journalists intimidated, and opposition parties and civil groups are subject to a variety of suffocating regulations. And yet, in spite of this increasingly constrained environment, the Internet remains accessible and relatively free from filtering.” The authors go on to assert “that CIS control strategies have evolved several generations ahead of those used in other regions of the world (including China and the Middle East). In RUNET [Russian Cyberspace], control strategies tend to be more subtle and sophisticated and designed to shape and affect when and how information is received by users, rather than denying access outright.”³⁸ If left unchecked, these control strategies threaten to stifle access to the range of resources necessary for an informed citizenry to participate with full awareness in the civic sphere.

Before considering access controls in Armenia, Azerbaijan, and Georgia individually, it will be helpful to first look at the development of these interventions within the CIS and to answer the question, how do second- and third-generation controls differ from those of the first? First-generation controls consist of “for the most part . . . building firewalls at key Internet choke points.” In order better to understand the strategy and tactics employed by the governments in the South Caucasus, it is worth describing the remaining two levels of control here in detail.

Second-generation controls create a legal and normative environment and technical capabilities that enable actors to deny access to information resources as and when needed, while reducing the possibility of blow-back or discovery. These controls have an overt and covert track. The overt track aims to legalize content controls by specifying the conditions under which they can be denied. Instruments here include the doctrine of information security³⁹ as well as the application of existent laws, such

as slander and defamation, to the online environment. The covert track establishes procedures and technical capabilities that allow content controls to be applied “just in time,” when the information being targeted has the highest value (e.g., during elections or public demonstrations), and to be applied in ways that assure plausible deniability.

The remaining level of control employs subterfuge, propaganda, and disinformation so that the actor’s intention remains invisible while extending the reach and possibilities of the previous generation:

Third-generation controls take a highly sophisticated, multidimensional approach to enhancing state control over national cyberspace and building capabilities for competing in informational space with potential adversaries and competitors. The key characteristic of third-generation controls is that the focus is less on denying access than successfully competing with potential threats through effective counterinformation campaigns that overwhelm, discredit, or demoralize opponents. Third-generation controls also focus on the active use of surveillance and data mining as means to confuse and entrap opponents.

In summary, second and third generations “employ the use of legal regulations to supplement or legitimize technical filtering measures, extralegal or covert practices, including offensive methods, and the outsourcing or privatizing of controls to ‘third parties,’ to restrict what type of information can be posted, hosted, accessed, or communicated online.” Indeed, the CIS pioneered “[s]ome of the first, and most elaborate, forms of just-in-time blocking, terms-of-usage policies, surveillance, and legal takedown notices over the last several years.”⁴⁰ As we shall see, while the South Caucasus countries all profess to provide an unrestricted Internet environment, in practice they all employ variations of the above control mechanisms.

Having defined what characterizes the advance guard of information controls we may now look at the individual countries in question below. The Open Net Initiative (ONI) employs a variety of criteria in evaluating the free flow of information around the world. Although the factors are many, we will limit our examination primarily to the nature and scope of Internet filtering of a political nature, including transparency, “a qualitative measure based on the level at which . . . [a] . . . country openly engages in filtering. In cases where filtering takes place without open acknowledgement, or where the practice of filtering is actively disguised to appear as network errors, the transparency score is low.” *Political filtering* “is focused primarily on Web sites that express views in opposition to those of the current government. Content more broadly related to human rights, freedom of expression, minority rights, and religious movements is also considered here.”⁴¹ For each country of the South Caucasus, we will examine the degree of openness and controls found in cyberspace.

Armenia

Over two hundred years ago, Edward Gibbon penned *The Decline and Fall of the Roman Empire*. In the book Gibbon describes Armenia, from time immemorial to the late eighteenth century, when he was writing, as “the theater of perpetual war.”⁴² Relatively recently “Armenia has struggled through political instability, regional conflict, and widespread poverty and unemployment.”⁴³ Indeed, Armenia and Azerbaijan have been at war for more than twenty years over the border region of Nagorno-Karabakh. In 1994, a Russian-brokered ceasefire brought the possibility of lasting peace, but the two nations until now have been unable to resolve their differences. Moreover, “[b]order disputes with . . . Azerbaijan continue to affect security concerns in Armenia. More specifically, restrictions on freedom of expression have intensified, as have allegations of attempts to restrict political opposition movements. Journalists and media outlets have also reported intimidation and harassment by state officials.”⁴⁴ Yet, as Deibert et al. have noted “[i]n the context of other CIS countries, Internet legislation in Armenia has demonstrated liberal trends. For example, Armenia was one of the first countries that opened the 2.4-GHz frequency band for free use by Internet service providers (ISPs) and end users. Data services have been fully liberalized since December 2006 and voice services since October 2007.” The media in Armenia also know legislative protections *de jure*, if not always in fact: “With regard to media rights the Armenian constitution guarantees freedom of expression, media and other means of mass information (article 27) and freedom of entrepreneurship and ownership. Armenian media have become increasingly restricted since 2003. Most newspapers act as a mouthpiece for official political agendas, and television stations are predominantly progovernment. In practice, censorship is widespread among journalists.” As we shall see below, while Internet access “in Armenia is largely unfettered . . . evidence of second and third-generation controls is mounting.”⁴⁵ This can be seen in various upstream filtering schemes including pressures put on ISP providers, legislative controls, and the pervasive use of surveillance. The Government of Armenia, during a declared “state of emergency,” has also employed less subtle means of service disruption, which we shall also examine.

From the three countries examined here by the ONI, Armenia stands out as the only one engaging in “substantial filtering.” In addition, ONI has assigned the country a transparency rating of “low” due to the significant level at which the country engages in filtering. The act of surveillance on the part of Armenian authorities has been used substantially to filter selected material and control access to the Internet for the minority of Armenians who are online. In 2008 the ONI reported that out of Armenia’s population of 2,968,586, about 172,800 people, or 5.8%, had Internet access. And while Internet use grew by 476% from 2000 to 2008,⁴⁶ government

surveillance continues to create a climate of self-censorship, for with government surveillance come real or imagined threats to life and livelihood. The government's practice of surveillance is indicative of its embrace of censorship and non-tolerance of dissent.

The most striking example of political intimidation and media restriction occurred when “[f]ollowing the February 2008 elections, widespread protest led outgoing president, Robert Kocharyan, to sign a state-of-emergency decree imposing severe restrictions upon mass media and Internet publications for a 20 day period. . . . This blockage targeted Armenia-based sites, as well as YouTube after a video showing clashes between protesters and police was uploaded.” Because bloggers publicized these events and provided alternative point-of-views regarding the situation, international pressure was brought to bear on the government's actions and the blocking did not extend beyond the above-mentioned time period. We will now quote ONI's testing results for Armenia, as they provide a wide-ranging view of the level and types of censorship to be found there. It should be noted that the ONI conducted these tests during the decreed state of emergency and found filtering to be extensive. As noted earlier, Internet access is generally open. In Armenia, “there are no express provisions to conduct monitoring of online content . . .” However, “ISPs must block access to particular content on request from law enforcement agencies for the purposes of crime prevention.” The ability of the government to block material overtly or legally “on request” suggests it must first conduct surveillance and then control access to information it might deem politically sensitive. In the context of the presidential elections mentioned above, it employed various technical means and covertly legitimated an occasion—a state of emergency—by which to act “just in time.” It is these selfsame methods that characterize second- and third-generation controls:

In 2007 and 2008 the ONI ran tests on the first-tier ISPs in the country: Arminco, WEB, and Netsys [three regional Internet service providers]. During Armenia's state-of-emergency, ONI monitored the media and Internet blackout in the country and concluded that pervasive filtering was occurring. The ONI detected a large number of blocked web sites, including regional sites providing information on ethnic and religious freedom groups, Armenian opposition sites, Russian opposition sites and youth movements, personal blogs, an Armenian Internet portal, and a political and cultural site about Nagorno-Karabakh. A number of international and regional (mainly Russian) media sites, e-mail servers and search engines were also filtered. In addition, leading Armenian online media were intentionally blocked.⁴⁷

In theory and by law, in order to conduct surveillance in Armenia, law enforcement must issue a warrant detailing the grounds for such action and the particulars of data to be mined, the venue, evidence or justification of the

measure, and its duration. There are, however, several exceptions built into the law which obviate the need for a warrant. In these cases, surveillance is permitted as a time-saving device to safeguard national security and to protect against a possible terrorist attack. Moreover, there is an additional clause that facilitates censorship on demand, requiring ISPs and operators to assist authorities engaged in surveillance.

Azerbaijan

While Internet access is generally uncensored in Azerbaijan, significant filtering does occur on a selective basis. The government also restricts freedom of expression and of assembly, especially “in the run-up to, and during elections. Journalists have also complained about harassment and intimidation.”⁴⁸ The reach of the authorities also extends into Internet cafés. In 2007, for example, the government arrested and indicted an Internet café owner and customers on charges of organized crime. The “crime” in question here was to view a caricature of the Azerbaijani president online.

The case of Eynulla Fatullayev illustrates how the free flow of information in Azerbaijan can be selectively suppressed through a legal framework at the will of the government. As the editor of the country’s largest independent newspaper and an outspoken critic of the government, Fatullayev “was sentenced to eight years and six months in prison on charges of terrorism and inciting ethnic hatred.” Moreover, several months earlier he was sentenced to two and a half years in prison under the criminal libel provision for a blog posting widely believed to not be attributable to him. In fact, “Fatullayev denied writing the posting and argued the charges were politically motivated.”⁴⁹ The authorities responded by closing down the organizations in which Fatullayev took part and confiscating their data and computers. As a result of prosecutions like Fatullayev’s, Azerbaijan is under international pressure by human rights advocates to decriminalize libel.

In contrast to the kinds of suppression detailed above, like Armenia and Georgia Azerbaijan has put into place progressive Internet legislation that, in theory, guarantees Internet freedom. Like its neighbors, who utilize second- and third-generation controls, Azerbaijan censors the Net to control the public’s perception of politically sensitive events. In 2003, international observers questioned the fairness of the country’s presidential elections. The monitoring group Transparency International has ranked Azerbaijan as “one of the most corrupt countries in the world.” Yet, in contrast to the nation’s low tolerance for dissent and penchant for censorship, Azerbaijan is working to fashion itself “into an information and communication technology (ICT) hub for the Caucasus region.” Unlike Armenia and Georgia, Azerbaijan has known significant, albeit soon to be exhausted, oil and gas reserves and “the ICT sector has been prioritized, with ICT seen as an essential pillar for diversifying the country’s oil-dependent economy.” This emphasis on information

technology has carried over into daily life, as Azerbaijan now boasts the highest rate of Internet penetration in the South Caucasus. As of 2008, 18.3% of Azeris—or 1,500,000 out of a total population of 8,177,717—were online, and Internet use grew by an impressive 12,400% between 2000 and 2008. Deibert et al. have attributed Azerbaijan's mostly unrestricted access to the Internet to this same interest in developing into an ICT hub. In the last several years the ONI has found evidence of "selective" filtering in two content areas, "political" and "social." Furthermore, due to Azerbaijan's high level of filtering, it rated overall transparency with regard to Internet controls "low."⁵⁰ Together with the ONI's rating of Azerbaijan as an authoritarian regime, these results indicate the challenges facing the nation in achieving open channels for civic participation and the uncensored sharing of ideas.

Georgia

Following independence in the Rose Revolution of 2003, Georgia liberalized its economy and adopted measures to enhance transparency in its regulatory environment. The international community has generally recognized these reforms as substantive: Georgia ranks highly in the World Bank's "ease of doing business" index, and—pertinent to any considerations of Internet infrastructure—out of all the CIS countries has achieved the highest level of compliance with international standards in its telecommunications sector. Between 2000 and 2008, Internet use in Georgia grew by 1,700%, so that by the end of that period some 360,000 Georgians, or 7.8% of the total population of 4,630,841, were online. Georgia has also contracted with an Internet service provider to bring Internet connections to rural schools, and boasts one noncommercial ISP, the Georgian Research and Educational Networks Association (GRENA), which provides Internet access to educational institutions.⁵¹

Post-revolution reforms have also included written laws that limit the state's power to censor the Internet, embodied in the Georgian Constitution. Article 13 of the Constitution gives Georgians the freedom to disseminate information, and according to Article 24, all Georgians have the right to "receive and disseminate information in writing or any other form" and "restrictions and censorship are prohibited." However, the Constitution also notes that the state can restrict the rights guaranteed in Article 24 if needed to ensure national security, prevent the disclosure of information deemed confidential, and other considerations. Apparently, the government does sometimes avail itself of the second-generation filtering tools allowed by this language—in 2010 the ONI found evidence of "selective" filtering in two content areas, "political" and "conflict and security." Furthermore, the ONI rated overall transparency with regard to Internet controls "low."⁵² These results indicate that freedom of access is lagging behind economic development in Georgia.

Cyberspace became a major arena for conflict during the brief South Ossetian war between Georgia and Russia in August of 2008. From outside its borders, Georgia suffered from denial-of-service attacks, which the government blamed on Russia. An independent nongovernmental organization, the Information Warfare Monitor, confirmed that attacks took place that shut down many Georgian Internet resources including government Web sites, blogs, and other media. Although outside groups such as the ONI could not confirm official Russian involvement in these attacks, they are consistent with the covert nature of second- and third-generation Internet filtering, and the ONI found that the Russian government “did little to curtail the activity of pro-government hackers and activists who used Russian online forums and Web sites to coordinate denial-of-service attacks against Georgian . . . Internet infrastructure.” When Russian troops entered South Ossetia, President Saakashvili declared a state of emergency, which the Parliament approved within 48 hours. Subsequently, the two largest Georgian ISPs blocked access to Web sites in the “.ru” domain to prevent the dissemination of what the government described as “inaccurate and inflammatory reports by the Russian media.”⁵³ The educational provider GRENA acknowledged that it filtered content but argued that it did so on the decision of its own leadership, not as a result of government pressure. The degree of state involvement in this decision remains unknown, and certainly other ISPs and search engines have cooperated willingly with government demands in other countries. However, the hidden hand of government operating through a third party in this manner would be consistent with third-generation controls.

Summary and Comparison: Filtering Practices

As befits nations engaged in advanced filtering techniques, Armenia, Azerbaijan, and Georgia maintain largely open and unrestricted Internet access—most of the time. For as we have seen, the information flow can be shut rapidly when the authorities deem it necessary to their interests. Table 2 summarizes the South Caucasus countries according to ONI regime types and filtering methods employed. As shown by the table, the ONI rates Armenia and Georgia as having hybrid authoritarian/democratic regimes, while ranking Azerbaijan as authoritarian. However, despite these observed differences in political culture, all three countries use both second- and third-generation filtering schemes and display low transparency, so that the filtering is not acknowledged or is even actively disguised.

The ONI has stated that Azerbaijan’s and Georgia’s acts of filtering are “selective” while distinguishing Armenia as the only country of the three to engage in “substantial” filtering. One could argue, however, that this distinction becomes blurred since, as the examples cited above reveal, all three nation-states employ equally advanced filtering methods in an environment

TABLE 2 South Caucasus Countries by Regime Type and Filtering Practices.

Country	Regime type	Filtering methods used (generation)	Level of filtering	Transparency
Armenia	Hybrid	2nd and 3rd	Substantial	Low
Azerbaijan	Authoritarian	2nd and 3rd	Selective	Low
Georgia	Hybrid	2nd and 3rd	Selective	Low

Source: Diebert et al., *Access Controlled*.

that encourages self-censorship on the part of media. Certainly government actions taken both during Armenia's 2008 presidential elections and during Georgia's 2008 war with Russia were out of the ordinary when compared with daily practice. Yet they resulted in blanket censorship for a brief period, at exactly those times when the need for more information was critical for citizens to determine the true nature of events. At this writing, censorship evidently continues in Georgia, as the Agence France Presse has reported protesters in Tbilisi holding placards calling for "free media" and protesting the government's use of force in ending five days of peaceful protests.⁵⁴

As Gibbon noted, war has a long history in the South Caucasus, and—excluding the calm imposed by Soviet rule—this pattern continues today. Indeed, Armenia, Azerbaijan, and Georgia may all be considered theaters of war or wars-in-the-making. This being the case, the ongoing need for internal order and control is at a premium for the governments of these three nations. Not surprisingly, many in government view the Internet and other telecommunications through the lens of national security, so that "these countries have increasingly turned to security-based arguments—such as the need to secure 'national informational space'—to justify regulation of the sector. Consequently, the region is a leader in the development of next-generation information controls."⁵⁵ Second- and third-generation controls are the perfect tool for South Caucasus governments, because such tools may still be deployed through or even enabled by legal or constitutional frameworks.

CONCLUSION

As discussed earlier, libraries in the South Caucasus lost the financial and material support of the Soviet Union at the very moment when the serials crisis was decimating library budgets worldwide. Despite this heavy blow, academic institutions in the region now have a chance to correct the imbalance by expanding and promoting the open access initiatives on which they have embarked. For one thing, open access would provide a better return on the investment these governments are making in their educational sectors. As noted by the Scholarly Publishing and Academic

Resources Coalition, governments invest in research “in order to accelerate the pace of scientific discovery, encourage innovation, enrich education, and stimulate the economy . . . and the value of an investment in research is only maximized through wide use of its results.”⁵⁶ Therefore, enabling open sharing of research results would be in the national interests of South Caucasus countries.

Moreover, open access could be a way to increase the global impact of research by scholars in these countries, as many studies have found that articles freely available online are cited more frequently than for-fee articles.⁵⁷ To maximize research impact, institutions must reach out to faculty to promote awareness of open access (which, as noted in Tigran Zargaryan’s comments, is currently at low levels) and encourage faculty to deposit articles in open repositories. Given their role as mediators between researchers and resources, librarians are ideally situated both to explain and to advocate for such a new model of scholarly communications. In our discussion of Azerbaijan’s KUIR repository, we noted some of the technical, administrative, and promotional elements that such outreach involves. The creation of similar repositories and priorities throughout the South Caucasus would establish the fundamental infrastructure necessary for such realignment. Governments could also consider mandating open access for articles drawn from taxpayer-funded research, following the example of the US National Institutes of Health. In the end, the beneficiaries would also include the general public, as free online access leads to a better-educated populace who are better able to engage in the mechanisms of participatory democracy.

Educating such an informed citizenry, however, depends upon the free flow of nonbiased information. As Usova notes, open access initiatives can contribute to this process in that they not only increase access to information, but also “bring transparency to research institutions” and improve “social and economic development by cultivating well-informed and thinking citizens.”⁵⁸ To reach these goals, however, educators must confront a complex and subtle power structure. Edward Bernays first articulated this covert system in his seminal tome *Propaganda*, writing that “manipulation of the organized habits and opinions of the masses is an important element in democratic society. Those who manipulate the unseen mechanism of society constitute an invisible government which is the true ruling power of our country.” Bernays was, in fact, an advocate of this approach and wrote extensively on the “technical means . . . by which opinion may be regimented,” primarily via public relations.⁵⁹ Since the publication of *Propoganda* in 1928, these means of influence have multiplied in an ever-expanding assortment of entertainments, amusements, distractions, and media.

In the face of these mechanisms of distraction or even disinformation, an unfiltered Internet is important as a countervailing force. The Internet

offers people “a platform to distribute their own messages in an alternative manner to that of the dominant commercial media,”⁶⁰ as evidenced by the role of networked technologies in the recent popular uprisings of the Arab Spring. An unrestricted Internet coupled with open access publishing would help establish a free flow of information. Librarians and other educators can then build on this foundation to cultivate learners’ critical information literacy, leading to a critical consciousness that will help alert learners to the type of manipulation described by Bernays. In the final stage, not only would students become aware of the influences brought to bear on them, but having achieved a critical agency, would also actively engage with the political and social ramifications of their condition, leading to the emergence of an informed and dynamic citizenry.

This type of democratic participation depends on liberal education. Open models for scholarly communication are foundational to strengthening liberal education and civic participation in the aspiring democracies of the South Caucasus, given the prohibitive costs of licensed resources. Decision-making based on unfiltered, reliable information is prerequisite for individual or societal change that is not the result of the invisible governing described by Bernays. Open communication models and information literacy are one element of the triumvirate completed by liberal education and civic participation. Indeed, liberal education and civic participation are dependent on the acceptance and use of open access models to (1) provide greater access to content for those in the South Caucasus, (2) encourage national innovation, (3) encourage transnational innovation by providing global access to the scholarly output of South Caucasian scholars, and (4) break down the pay-walls that make scholarly literature too expensive for libraries in the region. Moreover, information literacy programs are also important in promoting critical thinking skills found in Western liberal arts education. These programs help students not only better to search sources of information but also to be more discerning in weighing and evaluating whether or not these resources have been censored or filtered. The philosopher Martha Nussbaum, among others, supports the link between critical thinking and its impact on civic participation. For Nussbaum, developing “active critical faculties” is vital for democracy, whereas its opposite, passivity, is “fatal”⁶¹ for the health of civil society.

As we have seen on the regional level, regimes invested in maintaining power have thus far been successful in controlling the official narrative through the use of filtering and access control. Political and social instability, coupled with the pressure of recent or ongoing military conflicts, pose major threats to the progress of democracy in the South Caucasus. Given the low levels of transparency in the region, access to quality information from beyond national borders is crucial. As Parenti writes, “[m]any of our political perceptions are shaped by culturally prefigured templates implanted in our minds without our conscious awareness. To become critically aware of these

ingrained opinions and images is not only an act of self-education; it is an act of self-defense.”⁶² For this reason, open access and liberal education are more essential than ever, both within and beyond the South Caucasus.

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