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Bridging the Gap

New ventures unite academics and policymakers

Protest and Social Media

Technology and Ukraine's #Euromaidan

Global Food Discoveries

A 93-year-old grant keeps on giving

On the Heels of a Foot Soldier

Fostering the next generation of African academics

Carnegie Corporation *on the* World Stage



PHOTO BY MICHAEL FALCO

by VARTAN GREGORIAN, *President, Carnegie Corporation of New York*

Andrew Carnegie was an ardent champion of international peace, one who held that reason and sound policy would ultimately triumph over war, which was, as he put it, “the foulest fiend ever vomited forth from the mouth of Hell.” Schooled in the optimistic worldview of such eminent international pacifists as Nobel laureates Norman Angell and Elihu Root, as well as Baron d’Estournelles de Constant, Baroness

Bertha von Suttner, and U.S. merchant and career diplomat Oscar Strauss, and steeped in his own deep and wide reading of history and philosophy, Mr. Carnegie was a firm believer in the institution of Law, which he thought, through international treaties, agreements, and arbitration, could and would prevail over bellicosity. He—like the seventeenth-century father of modern international law, Hugo Grotius, whom he revered—maintained that nations are bound by natural law, independent of God, and based on humankind’s own fundamentally pacific nature. It was, in Mr. Carnegie’s view, the responsibility of the civilized and enlightened nations of the world to establish a network of legal instruments and institutions in order to codify this natural impulse and thus enable the new century to be free from the scourge of war.

Mr. Carnegie backed up his beliefs with his vast personal fortune. Following the International Peace Conference of 1899 convened by Czar Nicholas II of Russia in the Netherlands, he was so moved by the conventions governing the conduct of war that were agreed upon by the 26 participating states that he offered to finance the establishment of a permanent structure to be known as the Peace Palace, built at The Hague in the Netherlands. Its cornerstone was laid during a second International Peace Conference in 1907, this time at the behest of American President Theodore Roosevelt, with the hope that it would continue the success of the first Conference.

Mr. Carnegie was encouraged by such apparent progress and the prospects of achieving global peace and stability, and continued to be optimistic about the power and influence of robust peace movements in Europe and the U.S. As a result, he soon established a host of institutions dedicated to the ideals of responsible internationalism, global engagement, and peace. They included the Carnegie Endowment for International Peace, founded in 1910 under the guidance of Mr. Carnegie’s friend and associate Elihu Root, and Carnegie Corporation of New York, established in 1911, which he endowed with the bulk of his fortune and a mandate to “promote the advancement and diffusion of knowledge and understanding,” in perpetuity. In addition, Mr. Carnegie, who was mindful of ethical problems in international relations, established the Church Peace Union in 1914, now the Carnegie Council for Ethics in International Affairs, which just celebrated its centennial.

The efforts of Andrew Carnegie and the broader peace movements during this time did not, however, have the desired effect on the fierce arms race already underway between England and Germany. In response, Mr. Carnegie, who was sometimes called a “fool for peace,”ⁱ continued on a campaign of his own across the European continent, championing his idea for a League of Peace, lobbying for treaties of arbitration among the great powers, and writing to world leaders, including former U.S. President Theodore Roosevelt and Kaiser Wilhelm II of Germany, warning of how quickly humankind could descend into war with all its devastating consequences.

“It is true that every nation regards and proclaims its own armaments as instruments of Peace only,” he said at a peace rally in New York City during that period. “But just as naturally every nation regards every other nation’s armaments as clearly instruments of war....Thus each nation suspects all others, and only a spark is needed to set fire to the mass of inflammable material.”ⁱⁱ

His words were prescient, yet ignored. The peace movements faltered, and political events such as the assassinations of Archduke Franz Ferdinand of Austria in June 1914 and, a month later, of French peace advocate and head of the French Socialist Party Jean Jaurès set in motion the engines of war. By the summer of 1914, Mr. Carnegie’s call for peace was

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About the cover: New York City's iconic Unisphere was dedicated to "Man's Achievements on a Shrinking Globe in an Expanding Universe" at the 1964-1965 World's Fair. Photo by Comstock.



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ACTIVATING THE POWER OF ID

*Five bold initiatives bridge the gap
between the academic and policy worlds*

ILLUSTRATION: PAVEL_R



FROM NORTH KOREA TO SOUTH SUDAN TO EAST UKRAINE, countless complex problems are cropping up all around the world today. So why aren't policymakers more receptive to ideas from international scholars who study those very problems? In an example torn from today's headlines—the need for a strategy to combat the terrorist group [Islamic State in Iraq and Syria \(ISIS\)](#)—officials and terrorism experts disagree on the seriousness of the threat and how to respond, with no clear sign of collaboration between the two groups. This is just one missed opportunity among many cases where sound academic ideas fail to inspire political action. Carnegie Corporation has long been committed to hunting for solutions to this divide between the worlds of academia and policy. Here, [Stephen Del Rosso](#), International Peace and Security program director, explains why the Corporation has launched a major new \$5 million bridging-the-gap initiative.

What is the gap and why does it matter?

Alexander George, the late, much-revered scholar of international affairs at Stanford University and a member of the [Carnegie Commission on Preventing Deadly Conflict](#), coined the phrase “bridging the gap” in the early 1990s to refer to the widespread sense of the declining practical relevance of academic research as a guide to policymakers and, more broadly, as part of the public discourse on global affairs.

There are myriad reasons for that gap. In a nutshell, academic writing has been seen, especially of late, as providing increasingly precise answers to increasingly irrelevant questions. And that trend has led to academic writing that is not only largely unintelligible to non-academics, but also, in the words of one commentator, “aesthetically offensive.” So the question we must ask is, how useful is academic research in areas of national security and international relations to policymakers? If the answer is “not very,” what can we do to fix it?

To be clear, everything we do in Carnegie Corporation's International Peace and Security Program—from our nuclear work, to our work on China and Russia, to African peacebuilding—relates to this bridging-the-gap theme. Over the past several years, we have supported projects that have ap-

proached this ongoing challenge from various angles. But the fact remains, academic research only rarely translates into policy; it's a nonlinear path between idea and action, and many factors enter into the equation.

For one, as University of Southern California scholars Abraham Lowenthal and Mariano Bertucci point out in their new book, [Scholars, Policymakers, and International Affairs: Finding Common Cause](#), having academic research influence policymaking is no guarantee that the policy will be sound, or that it will work in practice. In fact, throughout history there have been a number of cases in which academic research has had what could be considered a pernicious effect, from racist immigration policies between 1935 and the early 1960s, to the conduct of the Vietnam War, to the socially regressive structural adjustment policies of the early 1980s, and more recently to some of the austerity measures that have had mixed success in restoring economic stability in Europe, the United States, and elsewhere. But we do believe, that ultimately, the balance is more positive than negative. We also believe that the gap between the academy and the policy world is bridgeable. And we believe we can help construct that bridge, which will contribute not only to better policy but to better teaching and research.

Additionally, good policy is informed by good ideas, and good ideas are not formed in a vacuum. At Carnegie Corporation we turn to the academic community for the generation of those ideas. It's particularly important at this moment in philanthropy because a number of our peer organizations have deemphasized the role of academic research in their work in favor of advocacy. But we believe that before we get the message out, we have to get the message right. And we turn toward the academics as generators of that insight.

Bridging the gap has a long legacy at the Corporation; it's in our DNA. Andrew Carnegie was an inveterate bridge builder—he believed in the power of ideas to promote socially positive activities, and arguably the biggest idea he had was to abolish war. He established the [Carnegie Endowment for International Peace](#), the [Peace Palace in The Hague](#), and other institutions to try to prevent wars and mitigate their worst effects. A very interesting and not very well-known piece of evidence about our early involvement in bridging the gap is a report by the American Political Science Association of a grant that was given by Frederick Keppel, president of the Corporation from 1923 to 1941. In 1927 Keppel made this grant of \$7,500 to create something called the Committee on Policy for the purpose of bringing together what he called academic political scientists with those involved in the operation of government. President Keppel felt that both sides could learn from each other. That grant was renewed in 1930 for \$67,500 (real money in those days) and there were 49 meetings held under the chairmanship of Harold Dodds, who later became president of Princeton University. In President Dodds's judgment, this undertaking had inestimable value both to the academics and to the

policymakers at that time.

What are the distinctions between the two cultures of the academy and the policy world that Alexander George described three decades ago? According to Lowenthal and Bertucci, building on work by other scholars, such as Harvard University's Stephen Walt, the role of the academic is to analyze and reflect in order to understand and explain. The role of the policymaker is to act, to promote positive policy outcomes, and to prevent negative outcomes. The academic takes time to develop his or her research and conduct it; the policymaker needs rapid responses to unfolding events. The academic values methodological rigor, nuance, contingency; the policymaker wants straightforward, clear, concise answers

some we support. In government, one is subject to political and bureaucratic expediency.

As Lowenthal and Bertucci further point out, the aim of an academic is also to produce original ideas, which involve intellectual property rights. In contrast, a government policymaker draws on, synthesizes, and integrates information from multiple sources—usually without attribution. And finally, most academics toil alone. They seek individual recognition. Their professional advancement is based mainly on [writing intended for other specialists](#), in jargon only other specialists are likely to understand, and the citations based on that writing. For the policymaker, professional advancement is based largely on political and adminis-

When there was something called the Arab Spring, the 100 Islam-focused Carnegie Scholars we supported suddenly became the intellectual group the media turned to in order to analyze what was going on in that part of the world.

to complex questions. Academics zealously guard their independence and intellectual freedom. There are, in fact, norms such as peer review designed to protect that freedom. They see this as an essential part of their identity, and they are less likely, I would argue, to trim their sails to the political winds, or to self-censor their opinions because they're seeking an appointment in the next administration. That is one distinction I would draw between academics and some think tank experts—even

trative skills, the ability to manage interpersonal relations, maneuver within a bureaucratic hierarchy, build support for a political position, and engage and persuade the decision maker up the hierarchy. Clearly, these are two different cultures, but we contend that they are complementary. We see them as mutually supportive and believe there can be a bridge to a positive outcome.

There are two essential contributions academics make in the policy realm. One is the ability of academ-



Christopher R. Hill, dean of the Josef Korbel School of International Studies and former U.S. ambassador to Iraq, speaks with former U.S. Secretary of State Condoleezza Rice.

PHOTO: FOCUSTREE PHOTOGRAPHY

ics to develop new frameworks and concepts that help policymakers think about and understand problems—what University of Ottawa scholar and former Corporation grantee, Roland Paris, calls “ordering the world.” Such notions as human security, women in development, fragile states, and responsibility to protect are all concepts based on academic research that have percolated within the policy realm. Most important, and possibly most underappreciated, is the ability and role of academics to prepare the terrain for future consideration of policy options—what I would call loosening the intellectual bolts on issues that are not quite ready for public consideration. A classic example initiated by a Carnegie Corporation grant is Gunnar Myrdal’s famous book *An American Dilemma*, published in 1944, which languished on the shelf until it was pulled down in 1954 and became the intellectual foundation for the Supreme Court’s *Brown v. Board of Education* decision.

More recently, when there was something called the Arab Spring, the 100 Islam-focused Carnegie Scholars we supported suddenly [became the intellectual group the media turned to](#) in order to analyze what was going on in that part of the world.

One more major challenge facing both policymakers *and* academics is the increasing specialization in the world. To quote someone closely associated with the Corporation, “Knowledge has become so varied, so extensive, so minute, that no individual can master

any more than just one branch.” That was said by Andrew Carnegie in 1902. One can only imagine what he would say in 2014! To quote Carlos Fuentes, the great Mexican novelist, “One of the greatest challenges facing modern civilization is translating information into knowledge.” The additional challenge today is translating that knowledge into understanding, insight, and wisdom that can be used by policymakers. At the end of the day, that’s the essence of our work in bridging the gap.

— *Stephen Del Rosso*

Rigor Meets Relevance

The Corporation’s approach to bridging the gap reflects the belief that academic rigor is not incompatible with policy relevance. The International Peace and Security team challenged universities to prove they could deliver both. A request for proposals to the 22 American-based members of the

[Association of Professional Schools of International Affairs \(APSIA\)](#) called for uniquely practical, on-the-ground, policy-focused programs, offering to award two-year grants of up to \$1 million each for projects with a strong chance of success, especially from institutions willing to rethink tenure rules so that academics are free to pursue

policy work, and to challenge convention and merge ideas across international and disciplinary lines.

Experts in the international relations field, chosen for their understanding of the policymaking process in Washington, D.C., as well as awareness of the administrative challenges of universities, reviewed 17 submissions from APSIA members. The following five were chosen: Columbia University, Syracuse University, Tufts University, the University of Denver, and the University of Washington. Their proposals include fresh ideas such as rapid response funds to make academics available on short notice to join counterparts at the State Department as soon as an international crisis breaks, and incorporating non-traditional outlets for research, from new forms of online publishing and social media to documentary videos and TED-style talks.

Columbia University's School of International and Public Affairs (SIPA) will take on a significant and growing national security challenge—[cyberespionage](#). Companies, especially in financial services and critical infrastructures, find themselves under frequent attack, required to keep a constant eye on the vulnerabilities of their systems. Predictably, corporations look to government for protection from escalating cybercrimes and for solutions to their technologically and legally complex problems. SIPA will address this escalating demand by establishing a global hub for research and consultation on cyberpolicy.

The challenge is significant for policymakers in the U.S. and abroad, who are keenly aware of the demands of cyberpolicy and governance, but unable to formulate effective policy frameworks that respond to these threats, Del Rosso says. Protocols for cooperation between firms and governments are lacking, as is constructive international



James Stavridis, dean of The Fletcher School of Law and Diplomacy at Tufts University and former NATO Supreme Allied Commander Europe.

PHOTO: MATTHEW MODOONO FOR TUFTS UNIVERSITY

engagement on information issues. Meanwhile, problems affecting privacy and data, not to mention overall governance of the Internet, are metastasizing.

Harkening back to the Cold War days, when scholars and practitioners forged new theories and created an expert community to cope with the nuclear age, the challenges of cybersecurity and Internet governance raise the same magnitude of global challenges and require a comparable academic and institutional response, plus major bridging efforts among all the players. Columbia's SIPA will respond by identifying priority areas for policy-relevant research within the field of cyberpolicy and governance and launching a series of working groups to carry out extensive cutting-edge research.

While the digital world poses one set of risks, conflicts in the real world continue to erupt. And although war is decreasing globally, the ability of governments to fully manage conflicts has leveled off. As a consequence, non-state actors must support states and fill voids left by an absence of state capacity, even attempting to stop armed conflict before it starts. These non-state actors—local civilians as well as local

and transnational businesses and non-governmental organizations—play an increasingly important role in security outcomes in the world's most intractable trouble spots. And yet they have not attracted much scholarly notice.

This lack of attention has in turn limited policymakers' understanding of the influence such non-state actors can have. The University of Denver's Josef Korbel School of International Studies will employ research and policy engagement on the peacebuilding functions of these organizations and individuals in an effort to shine a light on their role in reducing violence and hastening its end.

"Our collective attention is often biased toward headline-grabbing events of violence and conflict," said [Christopher R. Hill](#), dean of the Josef Korbel School and former U.S. ambassador to Iraq. "Our faculty is seeking to correct this bias by broadening the understanding of alternatives to violence and the effects that nonviolent actors can have on worldwide security."

Dealing with the fallout of conflict is also the focus of The Fletcher School of Law and Diplomacy at Tufts University, the country's oldest gradu-

ate school of international affairs. Its aim is to bridge the gap by working toward effective outcomes for one specific public policy challenge—the building (or rebuilding) of institutions in conflict-prone states that would be considered legitimate in the eyes of their citizens. Strengthening institutions in fragile states is also a long-standing interest of the Corporation’s International Peace and Security Program, particularly through its peacebuilding work.

According to The Fletcher School’s dean, [James Stavridis](#), who served pre-

degree program and give up on a university career, or opt for a Ph.D. and forego a future in public service or policy. These are two separate but still complementary and mutually dependent cultures, according to Del Rosso, and the needlessly bifurcated approach is really a market failure that negatively impacts policymaking and the academy.

While Ph.D. programs insulate students from real world policymaking, professional master’s programs don’t allow sufficient time to acquire in-depth knowledge. Syracuse University’s Maxwell School of Citizenship and

ing to shape and implement policies. In light of this trend, the University of Washington’s Henry M. Jackson School of International Studies will establish a policy institute targeting issues in international development, security, and business that draws on the wealth of expertise throughout its diverse community.

Located in downtown Seattle, the Jackson School is well positioned for multi-stakeholder activity. The institute will serve as a hub for faculty and students to collaborate with policymakers and representatives of business and civil society in four thematic areas: Asian Governance in the Regional and Global Order, [the Arctic and International Relations](#), Religion and Human Security, and International Relations—Outer Space and Cyberspace.

The grant will help support the mechanisms that move those ideas from the academy into the real world where policy impacts the globe.

viously as NATO’s Supreme Allied Commander Europe, this area of research has widespread potential, and “might help us to understand better emerging groups that could pose a threat to stability and security—like the next ISIS. Further, the grant will help support the mechanisms that move those ideas from the academy into the real world where policy impacts the globe.”

Cultivating the Field

Over the years, advanced training in international affairs has evolved into two distinct tracks: professional master’s degree programs focused on professional skills training for future practitioners, and Ph.D. programs meant for next generation university academics. Typically, students must choose either to follow a professional

Public Affairs intends to bridge the academic–policy divide by focusing on the human-capital dimension of this challenge through creation of a multi-institutional consortium and network of policy-oriented scholars. One of only a few institutions that combine both types of programs within the same institutional framework, its proposed solution will result in a cohort of scholars and practitioners that understand the problems and perspectives of both worlds and can pursue successful careers in either one.

Another significant change in the field of international affairs is its expansion beyond the domain of specialized government agencies. Today’s good ideas can and do come from myriad sources: foundations, NGOs, private companies, and even celebrities may play a significant role in help-

Can bridging the gap become a common cause?

For decades, Carnegie Corporation’s International Peace and Security Program has been recognized as a key player in building bridges between the worlds of policy and academia. These new ventures promise to bring scholars and policymakers closer together by summoning fresh ideas to solve urgent real-world problems—from cyberespionage to the future of natural resources in the Arctic—in unexplored or underutilized ways. It’s also well known that the Corporation values partnerships. Ideally, the pioneering work emerging from these selected institutions will attract more foundations and other funders to support growing efforts to bridge the gap. The shared goal would be to build momentum for projects resulting in theory-driven, policy-relevant research and effective communication, positively impacting America’s interests and promoting peace and security worldwide. ■

Rallies like this one in late June were still a regular occurrence in the Maidan Nezalezhnosti (Independence Square) in Kiev, Ukraine, continuing the wave of demonstrations—some violent—that began in November 2013.

PHOTO BY SERGI KHARCHENKO; COPYRIGHT PACIFIC PRESS/CORBIS/ APIMAGES



PROTEST

IN THE AGE OF SOCIAL MEDIA: Technology and Ukraine's #Euromaidan

by JOSHUA A. TUCKER
MEGAN METZGER
DUNCAN PENFOLD-BROWN
RICHARD BONNEAU
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ON JANUARY 25, 2014, IN THE MIDDLE OF WHAT IS NOW KNOWN AS [UKRAINE'S Euromaidan protest movement](#), Ukrainian opposition leader Arseniy Yatsenyuk posted the following tweet from his Twitter account ([@Yatsenyuk_AP](#)):



Arseniy Yatsenyuk
[@Yatsenyuk_AP](#)



+ Follow

No deal [@ua_yanukovych](#), we're finishing what we started. The people decide our leaders, not you. [#Євромайдан](#)

↩ Reply ↻ Retweet ★ Favorite ⋮ More

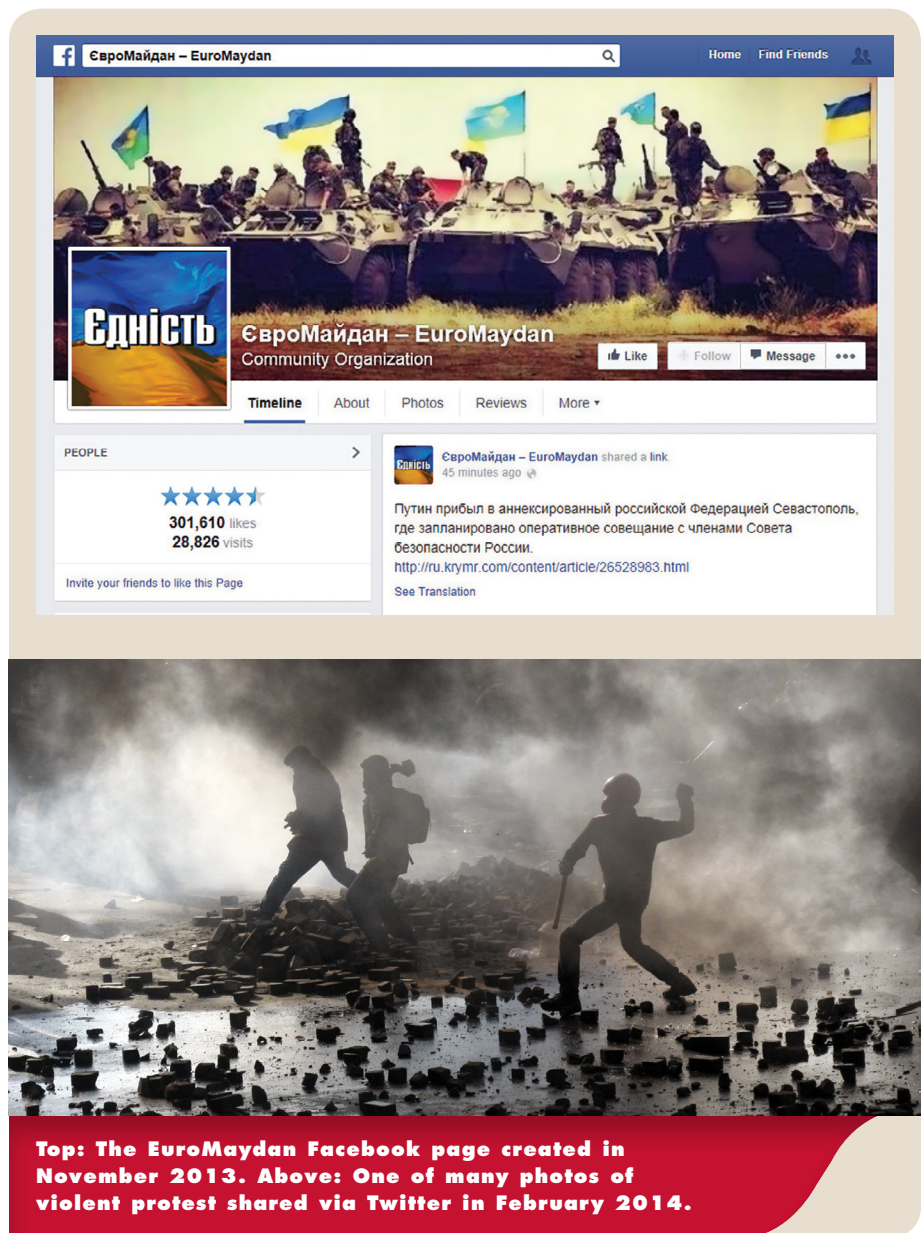
12:41 PM - 25 Jan 2014

The tweet was notable for two reasons: First, the [@ua_yanukovych](#) to whom Yatsenyuk was responding was none other than Ukrainian President Viktor Yanukovich, making this message perhaps the first high-stakes Twitter negotiation to occur during a period of civil uprising. Second, the tweet was written in English. This was rare for Yatsenyuk, who tweets in Ukrainian more than 95 percent of the time. Nevertheless, the significance of this English tweet becomes readily apparent when one considers an article in *The New York Times* that appeared only hours later under the headline, “[Opposition Says No to Ukraine on Power Share](#).” The article went on to explain how President Yanukovich was trying to stave off a civil uprising and preserve his own grip on power as [mass protests spread across the country](#), and concluded by quoting Yatsenyuk’s tweet.

Two months earlier, the Facebook page “ЄвроМайдан—EuroMaydan” (www.facebook.com/EuroMaydan) had been established to distribute news and information about protests in Ukraine. Within two weeks, the page had more than 125,000 followers; at the time of this writing it had over 300,000.

On February 18, just a few weeks after Yatsenyuk’s tweet, photos of the violent protests, including the one above right, were retweeted on Twitter hundreds of times—some more than a thousand times—on a single day.

These events—and the corresponding responses on social media—illustrate what has become increasingly evident: it is almost impossible to think of a major political protest or upheaval occurring without social media being part of both the incident and the ensuing narrative. The Euromaidan protests, which culminated in the flight of President Yanukovich from Ukraine in late February 2014, are a case in point.



Indeed, the Ukrainian Euromaidan protest movement may go down in history as the first truly successful social media uprising. Earlier movements labeled social media revolutions subsequently have been [criticized for not having had much important activity on social media](#) (Moldova, Arab Spring) or for having had a large social media presence but ultimately failing to make much of a long-term impact as a protest movement (Spain’s *Los Indignados*, Occupy Wall Street, Gezi Park in Turkey). In Ukraine, a government fell, a region was annexed, a civilian plane

was shot down, and what some are calling [a civil war continues to this day](#) in the eastern part of the country. Clearly,

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the movement was consequential and, as we will show, social media usage was widespread and significant.

The New York University [Social Media and Political Participation \(SMaPP\)](#) laboratory, where the authors of this article are co-primary investigators, was established with the support of the INSPIRE program of the National Science Foundationⁱ and NYU's Research Investment Fund to investigate how social media impacts political participation and, ultimately, the outcome of events like the Euromaidan protests. Political participation encompasses a wide range of actions that individuals take in the political sphere—including voting, donating money to a campaign, and volunteering for a political organization or campaign—but the lab has been especially focused on understanding the relationship between social media and mass protest. Theoretically, our work strives to combine insights from political science and social psychology to better understand how the world of protest has (or has not) changed since the emergence of social media. Empirically, the lab collects Twitter data in real time as protest movements emerge around the world using keywords and hashtags related to these movements. The lab is also developing tools for analyzing social media data, many of which were utilized in preparing this report.

With regard to Ukraine in particular, SMaPP has been collecting Twitter data based on search terms linked to the Euromaidan protests since November 25, 2013. (The list of terms is included in the online version of this story at [carnegie.org](#).) The collection had nearly 11 million tweets by the end of February 2014, and it is now approaching 40 million tweets. The lab has also monitored activity on public Facebook pages associated with the or-

ganization of the Euromaidan protests. During the crisis we put out a number of preliminary reports that have been cited in scholarly analyses of the protests and, at the invitation of Carnegie Corporation of New York, we will revisit the data more systematically here in order to summarize what has been learned so far.

Digging into the data more deeply is important for a number of reasons. As noted above, most current reporting on protests assumes a major causal role for social media the moment large numbers of tweets, Facebook pages, etc., can be identified. We do not challenge this assumption in the case of Ukraine. However, reporting numbers of tweets merely scratches the surface when it comes to understanding *how* social media may or may not have impacted the decisions of Ukrainians to participate in Euromaidan protests. If social media is indeed changing the ways in which protests emerge and evolve, then what is learned about the Ukrainian situation will provide important lessons for understanding and anticipating political developments all over the world.

Posting, Tweeting, and Protesting

Social media can impact the development of protest movements in a number of ways. First, social media can help to *build a protest movement*, and it can do so with remarkable speed. Second, once a movement exists, social media can play an important role in *recruiting* new members and *encouraging participation*. Third, once protests are in full swing, social media can *spread information* about them.

We define social media as any web-based application that allows users to contribute content, modify content already posted by others, and share content that can be viewed by

others. In addition, social media allows users to join communities or form networks with other people. The paramount examples of social media are sites such as Facebook, Twitter, Instagram, and Google+. In the context of Ukraine, VKontakte, a service similar to Facebook popular in the Russian-speaking world, is also important.

To generate hypotheses about the effects of social media on protest, we draw on research in political science and social psychology. Political science has long emphasized the importance of information about the potential costs and benefits of participating in protests.ⁱⁱ Social psychology, on the other hand, calls our attention to the role of motivational factors such as anger at perceived injustice (i.e., moral outrage),ⁱⁱⁱ group belonging and shared interests (i.e., social identification),^{iv} and beliefs about group empowerment (i.e., group efficacy).^v

Social media usage can affect all of these factors. For example, social media can make it dramatically easier to acquire information about both the potential costs and the benefits of participating in a protest. Likewise, social media can make it easier to transmit and receive messages that convey a sense of moral outrage or group efficacy or that link current political developments to socially shared grievances. Before the advent of social media, on any given day an individual might have had the opportunity to share his or her feelings about an unfolding political event with, at most, 10 or 15 people. Now with a few strokes of the keyboard or swipes of a mobile phone, people can make their thoughts known instantly to hundreds or thousands of others. Moreover, the fact that these thoughts are spread through social networks that individuals have constructed themselves, such as friend networks on Facebook or follower networks on Twitter, means that

informational and motivational appeals received through these channels could be far more influential than if they had been encountered in other contexts, such as the evening news.

Posts on social media are also pre-vetted: we learn not simply that there is a protest (or that there is moral outrage fueling the desire for a protest) but that our friends, relatives, or respected colleagues have endorsed this particular course of action or share a common sense of moral outrage. Thus, first we would expect social media to affect the development of protests by providing a forum in which opposition can be organized. This organization could simply take the form of general discussions among people who are dissatisfied with the regime and learn that they are not alone, or more concrete forms such as websites, Facebook pages, and Twitter accounts that serve as focal points.

As the movement quickly evolves from its early stages to the organization of protests, social media can impact an individual's decision to participate. This can be accomplished through various mechanisms mentioned previously: providing information about when and where protests are taking place; inciting the motivation to participate through social-psychological mechanisms; and informing people about the actions that individuals in their social networks are likely to take.

Finally, social media can be used to provide updates about protests once they are in progress, sharing information that fulfills different functions for different audiences. For actual or potential participants in the protest, social media can be used to share logistical information about the number of people protesting, the response of the regime, or safety concerns such as how to deal with tear gas or where to find medical help. Another key audience is the virtual community of potential protest

supporters. This community may be located in the city where the protest is taking place, perhaps comprising those who have elected not to participate but who could provide material support or participate in future protests. It could also be located, importantly, outside of the country. In many protests, especially when there's fear that the national media will fail to report on the protests or fail to report on them accurately, members of the international media constitute an especially important target audience. This is why we often observe nonnative language posts (usually in English) at crucial moments of protest movements anywhere in the world.

Understanding the #Euromaidan Protests

[In November 2013](#), the government of Ukraine stood poised to sign [an agreement with the European Union](#), which to many observers suggested that President Yanukovich would be moving the country toward a policy of balancing between Russia and the West. However, on November 21, 2013, apparently under pressure from Russia, President Yanukovich suspended preparations for the EU trade agreement; concurrently, a bill that would have allowed opposition leader Yulia Tymoshenko out of jail—a condition for the agreement—was rejected by Ukraine's parliament. For many in the opposition and the general public, this was interpreted as a sign that Yanukovich was rejecting the balancing policy and that the country was about to strengthen its ties with Russia and move away from a European affiliation. That same evening, small groups began to gather in Kiev, the capital of Ukraine, in the [Maidan Nezalezhnosti](#) (Independence Square) to protest the actions of the government. Within days, there were hundreds of thousands of protestors; the numbers swelled even more after a crude attempt by govern-

mental security forces to suppress the protests. Protestors called for the resignation of Yanukovich and his government and for early elections. The government refused, and the demonstrations continued for months.

This was not the first time protestors in Ukraine had gathered to demand closer ties with Europe in opposition to governmental policies. In 2004, the now famous [Ukrainian Orange Revolution](#) emerged in the aftermath of fraudulent election results, which purported to show that Yanukovich had defeated Viktor Yushchenko. At the time Yushchenko was seen as a more pro-European leader than Yanukovich, the preferred candidate of Russia. These protests ultimately culminated in a rerunning of the second round of the presidential election, with Yushchenko declared the winner. Despite the jubilation among many Ukrainians over the Orange Revolution, the years that followed were seen by many as a disappointment marred by rifts among the various Orange forces that had been better able to cooperate in opposition than in power. Six years later Yanukovich was elected president.

One might argue that protests often follow fraudulent election outcomes because these elections publicly reveal new information about the state of the regime. The Euromaidan protests did not result from fraudulent elections, but were triggered by an event that similarly revealed unexpected negative information: the sudden refusal of Yanukovich to sign the association agreement with the European Union. Yanukovich refused protestors' demands for months, and the protests of 2013 became a linchpin in the ongoing tension between Russia and the West. Russia demanded that Yanukovich remain in power, denouncing the protest movement as a violent coup led by fascists. In contrast, the West sup-

ported the initially peaceful, ostensibly Western-leaning protesters.

Following several outbreaks of violence, Yanukovych gave up the presidency, fleeing to Russia in February 2014, just three months after the protests began. Leaders of the opposition took over and claimed legitimacy as an interim government. The government has since faced separatist demands, armed uprisings, and a series of seemingly never-ending crises in southeastern Ukraine, including the secession of Crimea and its annexation by Russia.

Facebook and the #Euromaidan

In the journal *European View*, Tetyana Bohdanova argues that “while Twitter, YouTube, and Ustream were used to provide real-time information about the [Euromaidan] protests, Facebook became the main online platform for organizing.” SmaPP laboratory research confirms that there were indeed a number of pages on Facebook related to the Euromaidan protests with very large numbers of “likes” and followers. (See the table at the bottom of this page.)


Importantly, all of these pages were created *after* the protests started. They provide evidence not of an online movement coming together to plan protests, but rather of the ways in which Facebook was used to coordinate activ-

ity and most likely recruit new participants once the protests had commenced.

The main “EuroMaydan” Facebook page first appeared on November 21, 2013, at the very start of the protests. It grew so quickly in popularity that two weeks later it had already been “liked” over 125,000 times. This page was used to disseminate news and information about the protests. To serve additional, more focused needs, new pages were soon created, including pages devoted to the coordination of legal support, medical services, and transportation, as well as a separate page for the dissemination of news and information in English.

One particularly illustrative

Facebook page that appeared in early December was “[helpgettomaidan](#),” which was dedicated exclusively to organizing car pools from other cities or from other parts of Kiev to the Maidan. Users posted messages listing how many people they could take in their cars, the time and location of departures, and telephone numbers. This enabled individuals from disparate parts of Ukraine to coordinate transportation to and from the protests, as well as manage resources. Another page reflecting the organizing role played by Facebook was “[Maidan Medics](#),” which was started on December 2 to coordinate medical resources and doctors. Below is a sample post.



Майдан. Медики
 February 20

Oleksiy Machekhin
 !!!УВАГА!!!
 Потрібні хірурги, травматологи, ортопедів, які готові виїхати на допомогу.
 Перестрілка вогнепальними.
 телефон: 0661157095 (якщо не відповідає 0979483129)
 За порядність людини ручаюся.
 СМС не приймає, дзвоніть!

Oleksiy Machekhin. !!!ATTENTION!!! Surgeons, traumatologists, and orthopedists are needed who are willing to go help....

Popular Facebook pages related to Euromaidan

Page	Purpose	# of Likes*	Date Started
www.facebook.com/EuroMaydan	Main Page	290,000	11/21/2013
www.facebook.com/EvromaidanSOS	Organizing resources (legal, social, and journalistic) for victims of violence and protest participants	102,000	11/30/2013
www.facebook.com/EnglishMaidan	News about EuroMaidan in English	40,860	11/30/2013
www.facebook.com/maidanmed	Coordinating volunteer medical care	5,221	12/02/2013
www.facebook.com/maidanhelp/	Coordinating help of a variety of types for those on the Maidan	5,804	12/06/2013
www.facebook.com/helpgettomaidan	Organizing carpools to the protests	12,375	12/10/2013
www.facebook.com/RESOURCES.maidan	Similar to EuroMaidan SOS	1,561	01/24/2014
www.facebook.com/automaidan	Group organizing car protests	17,526	11/30/2013
www.facebook.com/euromaidanpr	News about EuroMaidan in English and other foreign Languages	27,154	01/2014
http://vk.com/antimaydan	Anti-Maidan VKontakte Page	484,440 (followers)	

*As of this writing.

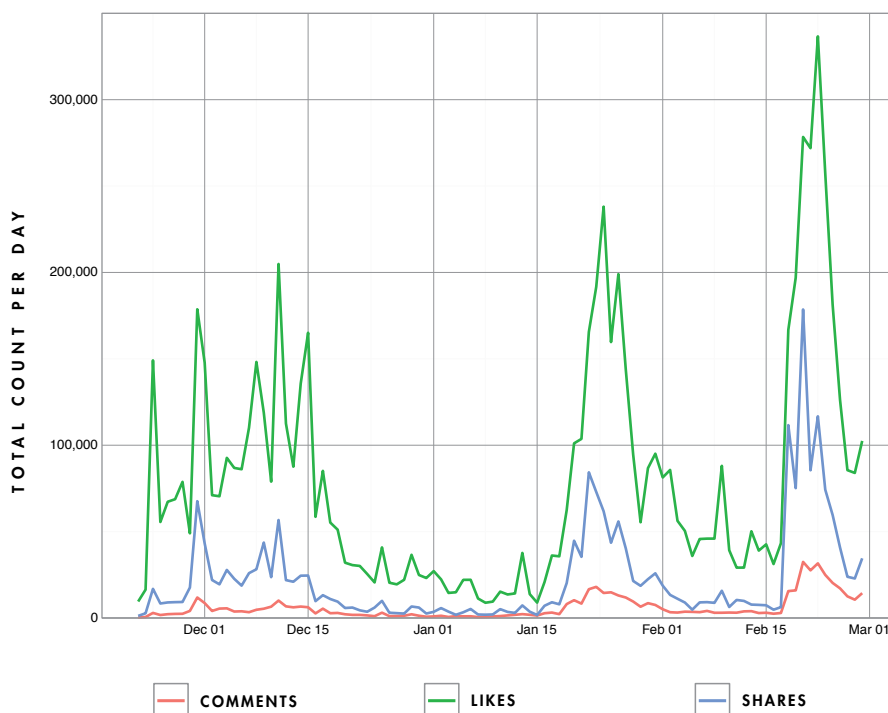
Note: The EuroMaydan spelling is sometimes used by Ukrainian speakers writing in English.

This post is another example of how social media was used to coordinate resources needed to support protests and to efficiently recruit those who wanted to help, in this case doctors and medical personnel. Similar pages included “[EuromaidanSOS](#)” and “[Maidanhelp](#),” which sought to provide support for victims of violence. “[Euromaidan in English](#)” emerged at the end of November to provide a separate space for English-speaking users to obtain news and updates about the protests without having to sort through a large number of posts in other languages. This also allowed the main “EuroMaydan” page to cater specifically to its domestic and diaspora audience.

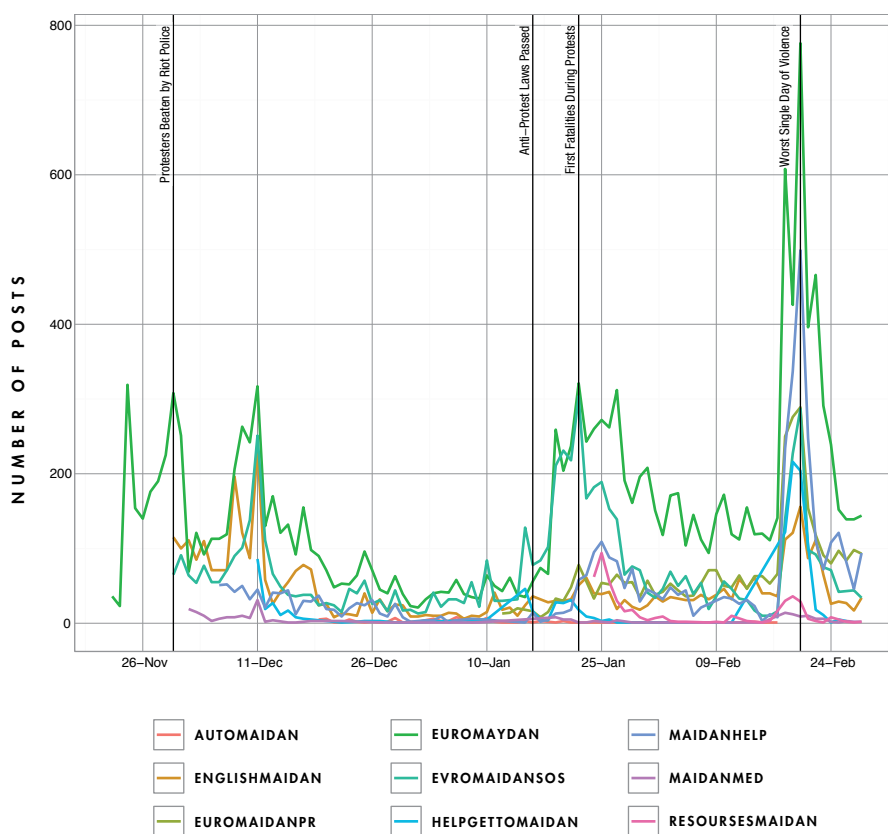
The top right figure documents the rise and fall of activity over time on the main “EuroMaydan” Facebook page throughout the crisis period.

At least three things are worth noting. First, the sheer amount of activity on this page—a page that did not exist before November 21, 2013—is quite stunning. Posts on this page alone generated 600,000 comments, 2.2 million shares, and 7.9 million likes. Second, spikes in online activity correspond directly to periods of offline activity: the initial surge of protests in late November through the first half of December 2013, the clashes that erupted after antiprotest laws were passed on January 16, 2014, and the final surge of protests in the second half of February 2014 following the violence on February 18. (A timeline is included in the online version of this story at [carnegie.org](#).) Finally, the popularity of the page seemed to increase steadily as time went on, indicating it did not lose relevance once the protests started. These data are consistent with the notion that Facebook served an explicitly organizational role with respect to the protests, but did not help potential members of the opposition find one

Activity on Facebook’s “EuroMaydan” page



Online activity on a variety of pro-Maidan Facebook pages



another *before* the protests began.

The bottom figure on page 13 illustrates the number of posts on each of the various Facebook pages related to the protests. Importantly, all of these pages remained active throughout the successive waves of protests; the evidence does not suggest a “crowding out” effect, with all the activity gravitating toward a single dominant page, despite the overall popularity of the EuroMaydan Facebook page. During the final wave of protests and clashes prior to Yanukovych’s departure, in particular, there is a great deal of activity on most of these pages. Given the movement’s success, these data suggest that the model of establishing one centralized page for everyone in conjunction with a number of specialized pages for specific subsets of needs and resources could be seen as an effective mode of organization.

Interestingly, very little anti-Maidan activity could be observed on Facebook, suggesting that the platform itself may have been favored by people who are more Western leaning. In part, this may have been because of VKontakte, an alternative Facebook-like social media platform popular among Russian speakers. Given that a major dimension of the Euromaidan conflict was whether Ukraine ought to pursue more pro-Western or pro-Russian policies, those opposed to the Euromaidan protests might have turned to VKontakte rather than Facebook. Indeed, there is a popular VKontakte page, “[Antimaydan](#)” (anti-Maidan), where moderate activity came and went for about a month beginning in mid-January, with a noticeable spike in mid- to late February.

As it is quite possible that much of this activity emanated from within Russia rather than Ukraine, three observations can be made on the basis of these data: First, opposition to the protests did

not attract attention on VKontakte nearly as quickly as support for the protests developed on Facebook. Second, there is a huge spike in activity around the time that Yanukovych left office, possibly foreshadowing the conflict in the southern and eastern parts of the country that was to come. Third, there was indeed an anti-Euromaidan presence on social media, although it was slower to emerge. This reminds us that, despite the attractiveness of social media as an organizing tool for antigovernment protesters, such movements also stimulate social media countermovements.

These analyses are useful for understanding the extent, timing, and duration of online activity, but they cannot address the question of whether social media usage plays a causal role in protest participation. Facebook does not simply provide information to the public; it facilitates the spreading of information through a social network that the individual has already elected to join. Olga Onuch of Oxford University and her colleagues were able to [conduct surveys of protesters in real time](#). The survey results suggest a powerful role for Facebook in delivering protesters to the Maidan. Forty percent of respondents said they found out where and when to attend the protest because they received an invitation on Facebook from a family member or friend, and five percent reported getting this information from a student group on Facebook. In addition, 14 percent of respondents reported finding out where and when to protest through VKontakte. Although respondents cited multiple sources, the data suggests that approximately half of the protesters obtained this critical information from Facebook and/or VKontakte.

Twitter and the #Euromaidan

Turning to Twitter, one can observe that its Euromaidan-related usage

tracks real-world events in much the same way that Facebook usage does by referring to data drawn from the SMaPP Euromaidan Twitter collection, which contains all tweets over the time range from late November 2013 through late February 2014.

These data indicate that, as was the case for Facebook, the use of Twitter closely parallels off-line developments. Twitter usage started at a low level in Ukraine but increased significantly with each successive wave of protest activity, suggesting that, more than Facebook, Twitter was discovered by users as a means of discussing the Euromaidan events. Finally, there is a dramatic increase in the use of Twitter that coincides exactly with the outbreak of violence on February 18, 2014, leading to the conclusion that the Euromaidan crisis could have motivated some Ukrainians to join Twitter.

The number of Twitter accounts created per day by people who subsequently posted a tweet that ended up in the SMaPP Ukraine collection provides a conservative estimate of the number of people who may have turned to Twitter for information about the protests, since they exclude new accounts created by people seeking information about the crisis who chose *not* to tweet about it themselves. We observed that the number of new accounts created by people who tweeted about the crisis increased substantially once the protests were underway in November, and the average number of new accounts created each day increased throughout the protests: more new accounts were created in February than January, more in January than December, and so on.

Tweets can also be studied by language. This is done by coding the language of the tweet and comparing it with the language that the user listed as his or her preferred language when registering for Twitter (for getting in-

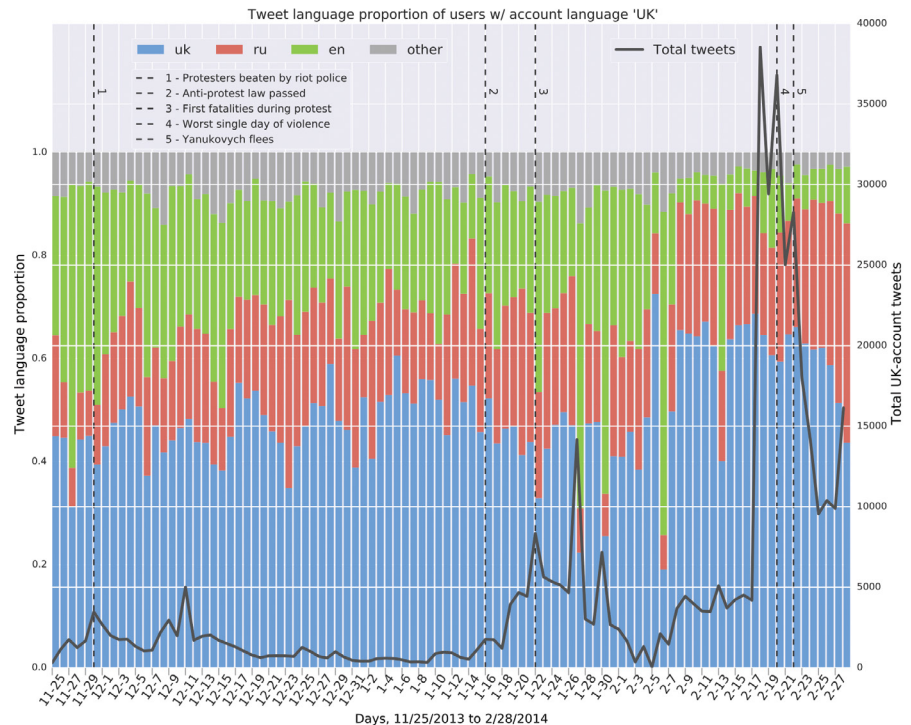
structions, updates, etc.), which is most likely the user's native language. This information can be used to provide insight into questions raised earlier: Were the spikes in Twitter usage during periods of protest due primarily to the dissemination of international news media stories, meaning that much of the Twitter usage was actually by non-Ukrainians? And were Ukrainians themselves being strategic in terms of the language they used in their posts?

We analyzed the tweets of people who listed Ukrainian (UK) or Russian (RU) as their preferred language to address these questions. Spikes in tweeting activity by these users would suggest an important role for Twitter in communicating information about protest developments to domestic audiences.^{vi} The two figures at right summarize the frequency of tweets by Ukrainian and Russian users, respectively, according to the day and language of the tweet.

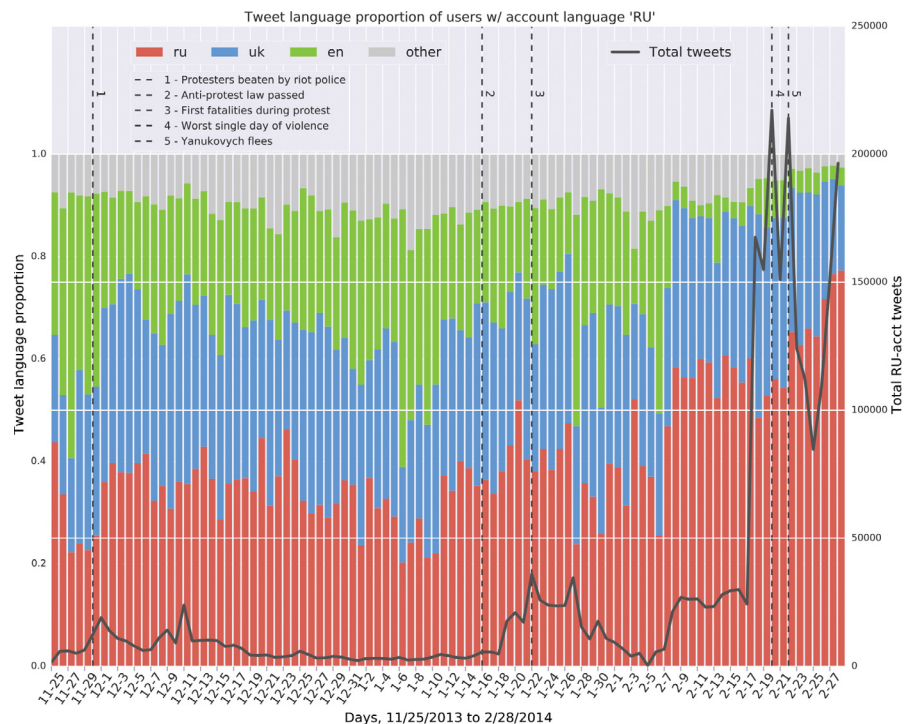
These two figures lead to the conclusion that the massive increase in tweets following the violence on February 18, 2014, was not due to outsiders circulating foreign news sources concerning events in Ukraine. There are large increases in tweets by Ukrainian and Russian speakers, as well as large increases in the numbers of tweets in Russian and Ukrainian. Interestingly, Ukrainian and Russian language users also tweet in English a significant amount of the time, which might point to diaspora users outside of Ukraine, or could also suggest a conscious effort to make sure that what was happening in Ukraine reached the international media. The increase in English-language tweeting on February 18, especially by Ukrainian language speakers, is consistent with this interpretation.

An additional point worth emphasizing is the remarkable degree of flexibility in language usage on Twitter in Ukraine. Many, many people chose to

Twitter Language Usage by Day (UK)



Twitter Language Usage by Day (RU)



Retweet Networks: How Information Spreads

we utilize retweet networks, which are used to determine who is retweeting information and from whom. In any network, there are nodes (persons in the network), and edges (relationships between nodes). In a retweet network, the nodes are two distinct users of Twitter, and the edges are created by one person retweeting a message from another person. In the following two figures (created using a force-directed layout algorithm), users in the network who are more closely connected to one another pull closer to each other in the layout, while less connected users drift

Tweets coded by language can also be used to assess whether Russian and Ukrainian language tweets existed in the same retweet networks, or whether they formed distinct networks. The following two figures, which examine the retweet networks of Ukrainian- and Russian-language tweets separately,^{vii} are color-coded based on a very simple ideological coding scheme: people who follow two or more pro-Russian politicians (and no pro-Ukrainian politicians) are colored red, and people who

people who, according to the simple coding scheme, appear to be pro-Ukrainian. This is consistent with the notion that the Euromaidan movement had supporters among *both* Russian and Ukrainian speakers and challenges the idea that the Euromaidan protests can be classified exclusively along a Russian-versus-Ukrainian cleavage.

Retweet networks can also help define how hierarchical the spread of information is. Specifically, is information transferred largely from a few key sources to the rest of the network, which would indicate a high degree of

A substantially different pattern emerged on each day. Why? First, because the sheer number of retweets in-

creased substantially between the two days. And second, there are also much denser retweet clusters around the [Euromaidan Twitter feed](#) in one area and the BBC News Twitter feed in another. Clusters are interesting because they show subnetworks within the larger networks of users who are more likely to retweet within that cluster. We are interested in the clusters because we think they can give us insight into the different types of conversations occurring on Twitter.

We conducted visual inspections of only two of the approximately 100 days contained in the sample. Another, more systematic, approach is to calculate descriptive statistics concerning the networks. To do this, we use what is known as the [Kolmogorov–Smirnov test](#) to determine how different the network we observe is from a perfectly hierarchical network in which only one person is retweeted by everyone else. The *higher* this value, the less the network resembles a perfectly hierarchical network. The *lower* the value, the more it resembles a perfectly hierarchical network.^{viii}

Our analysis confirms that the Euromaidan retweet network did indeed become much more hierarchical in the immediate aftermath of the outbreak of violence on February 18. This is consistent with the notion that when the stakes of the conflict are raised, specific and authoritative sources of information may become more valuable. We would expect that more emphasis was given to the “voice” of the movement (the Euromaidan Twitter feed) and to international news sources (e.g., the BBC).

To gather additional information along these lines, we compared retweet proportions for the six most popular sources of retweets over the entire period of study. Two valuable observations were made in this case. First, the two

most prevalent sources of retweets were local Ukrainian Twitter feeds—the official Euromaidan feed, and the feed of *Novosti Ukrainy* (or Ukrainian News, a Russian language Twitter feed that uses the Twitter handle “@Dbnmjr”). This indicates that the sources of the most popular retweets associated with the Euromaidan crisis were not simply retweets of Western, English-language news outlets. Second, there was an increase in the preponderance of retweets of BBC tweets on February 18. Even on this date, however, the most popular sources of retweets in the SMA PP data set were native language Twitter feeds.

Lessons of #Euromaidan

On the basis of the data summarized here, four conclusions are paramount regarding the relationship between social media and the Euromaidan protest movement:

- **First**, social media undoubtedly helped to bring people to the Euromaidan protests.

- **Second**, for participants in the protests, social media offered important logistical support.

- **Third**, social media usage closely tracked important political developments throughout the crisis. The link between social media usage on Facebook and especially on Twitter and the intensity of movement activity grew stronger with each successive wave of protests.

- **Fourth**, while Ukrainian and Russian language tweeters did not inhabit the same social media networks, there was considerable overlap between the two.

Looking at social media and political protest more generally, it's natural to conclude that the days of protest in the absence of a significant social media presence are surely coming to an end. What this means is that in the future, we can expect protests and protest

movements to develop more rapidly than in the past, especially as social media makes it easier for individuals and groups to solve logistical problems and overcome barriers to action.

The notion that movements originating online through social media channels are unlikely to produce lasting change should be rethought. Most protest movements in the future will feature some significant role for social media, and some of these—like the Ukrainian Euromaidan movement—will produce consequential changes, although others may not. Determining whether specific network patterns of social media usage are more likely than others to yield meaningful results should be an important priority for scientific researchers, policy analysts, and movement organizers.

It is important to recognize that the various forms of social media are far from homogeneous. Different platforms are likely to play quite different roles. We have documented some similarities between the use of Twitter and Facebook, but we have also noted, for instance, important differences between conversations on Facebook and VKontakte, as well as Twitter and Facebook. Moreover, the platforms themselves are dynamic (e.g., consider Facebook's acquisition of Instagram and WhatsApp), and new platforms are emerging all the time.

The implications of our analysis may go beyond the ways in which protest movements can bring people out onto the streets. If we are correct that social media facilitates movement organization by making it easier for like-minded people to share information, motivate one another to enter the public square, and acquire information about politics from trusted sources such as friends and family members, it stands to reason that social media will prove just as useful to groups seeking to bring

about armed resistance to the state as it is to groups promoting nonviolent social or political change.

Nowhere is this phenomenon more evident in the news than with respect to the Islamic State in Iraq and Syria (ISIS). It has been suggested that [social media provides a way for adherents around the world to show their support for ISIS](#), for ISIS to plot its insurgency and spread propaganda, and perhaps most importantly, for ISIS to recruit new members. While it may be too early for substantive research and analysis of social media usage by ISIS, lessons drawn from Ukraine's Euromaidan movement might be broadly applicable to this situation.

Social media networks can, for example, span national boundaries. While we have emphasized that not *all* of the social media discussion of Euromaidan protests came from non-Ukrainians discussing the events, our analysis of the retweet networks and the use of English language tweets suggests that at least some of the discussion occurred between those inside and outside of Ukraine. For a protest movement, international scrutiny may be extremely important for discouraging the government from using force to quash protests. For an armed uprising, international support may mean additional funds, weapons, and recruits. Thus, it is extremely important to consider international ties that are maintained through social media channels.

Some of what is posted on social media is public, but some is private. Just because insurgent groups are using social media to organize does not mean that outside observers can freely monitor that group's online activity. The preference for secrecy is especially strong when it comes to movements people could potentially be jailed or even killed for joining. Indeed, it would not be surprising if the choice

of platform were in part due to the relative advantages of public appeals versus venues for private conversions. So for instance, broad appeals for new supporters might well occur in forums such as Twitter feeds, public Facebook pages, and YouTube channels. But once a potential recruit expresses genuine interest in joining the movement, the discussion might move to a more private realm of social media or even to one-on-one communication through instant messaging and chat rooms, which are often linked to social media sites such as Facebook Messenger and direct messaging on Twitter.

Finally, policymakers will need to think carefully about how the two most attractive features of social media from the standpoint of organizing a protest movement (speed/efficiency of communication and low financial cost) are likely to play out in the context of armed insurgencies. Violent *and* non-violent actors benefit equally from the low cost of using social media relative to other forms of communication. Whether the speed with which social media can bring people to the streets can be approximated when it comes to violent confrontation is another matter entirely. For protesters, circulating details about where and when a protest will take place to hundreds of thousands of people who are relatively close to the protest location may, under certain circumstances, be able to facilitate a demonstration involving thousands (or even tens or hundreds of thousands) of people. In contrast, to recruit armed insurgents who must travel through government strongholds or across national borders, tenuous social contacts in an online environment may not do the trick. Nevertheless, we are living in an era in which nearly everyone involved in political movements uses social media as some part of the organizing process. Most recently, stu-

dent organizers have used social media to mobilize thousands of protesters to sites across Hong Kong. Its role is undoubtedly more profound in some cases than others, but to understand politics at any level today, it is imperative to appreciate the role that social media can and does play.

Endnotes

ⁱ Award #1248077

ⁱⁱ See, for example: Kuran, Timur (1989). *Sparks and prairie fires: A theory of unanticipated political revolution*. Public Choice, 61, 41–74; Kuran, Timur (1991). *Now out of never: The element of surprise in the East European revolution of 1989*. World Politics, 44, 7–48; Lohmann, Suzanne (1994). *The dynamics of informational cascades*. World Politics, 47, 42–101; Tucker, Joshua A. (2007). *Enough! Electoral fraud, collective action problems, and post-Communist colored revolutions*. Perspectives on Politics, 5, 537–553.

ⁱⁱⁱ Barbalet, J. (1998). Emotion, social theory, and social structure: A macrosociological approach. Cambridge: Cambridge University Press; Tausch, N., Becker, J., Spears, R., Christ, O., Saab, R., Singh, P., & Siddiqui, R. N. (2011). *Explaining radical group behavior: Developing emotion and efficacy routes to normative and non-normative collective action*. Journal of Personality and Social Psychology, 101, 129–148.

^{iv} Drury, J., & Reicher, S. D. (2009). *Collective psychological empowerment as a model of social change: Researching crowds*. Journal of Social Issues, 65, 707–726; McGarty, C., Thomas, E. F., Lala, G., Smith, L. G., & Blum, A. M. (2013). *New technologies, new identities, and the growth of mass opposition in the Arab Spring*. Political Psychology, 1–16.

^v Tausch et al. 2011; Van Zomeren, M., Leach, C.W., & Spears, R. (2012). *Protesters as “passionate economists”: A dynamic dual pathway model of approach coping with collective disadvantage*. Personality and Social Psychology Review, 16, 180–199.

^{vi} This is especially the case for Ukrainian language tweets, because Ukraine is the only country in the world in which Ukrainian is a primary language. Russian tweets about developments in Ukraine may have emanated from Russian-speaking Ukrainians, but they may also have represented activity by Russians. In any case, these collections of tweets do not include Westerners sharing English language news reports with each other.

^{vii} Both figures were created by filtering the full network previously displayed by the language of the tweet, that is to say the forced layout algorithm was not run separately for each of the different languages. Thus the figures can be directly compared to one another.

^{viii} Technically, we are reporting the D-value produced by the Kolmogorov–Smirnov test, which is the maximum distance between the empirical distribution function (also known as the cumulative fraction function) of the two samples. The empirical distribution function gives the proportion of the sample data (Y-value) less than the X-value at any point. The D-value is bounded between 0 (no distance between the two samples, so in this case perfectly hierarchical) and a number very close to 1 ($n/n-1$, where n is the number nodes in the network, which would represent the maximum difference between the two samples, so in this case a perfectly flat network). ■

PERSPECTIVES


on Peace & Security

PERSPECTIVES on Peace & Security
INTRODUCTION
SORT BY TOPIC
PARTICIPATING ORGANIZATIONS

| CARNEGIE FORUM |

Rebuilding U.S.-Russia Relations

The growing rift between the U.S. and Russia is a concern throughout the foreign policy community. Carnegie Corporation of New York, long committed to improving U.S.-Russia relations, has invited top experts to weigh in on a set of probing questions. The aim: to promote understanding and international engagement, towards **Rebuilding U.S.-Russia Relations**.



Are U.S. narratives about Russia and Putin accurate and useful for guiding policy toward Russia?

A

Introduction

Deana Arsenian, Carnegie Corporation of New York

The dire consequences of an escalation of conflict...call for a debate in the U.S. that examines the basic assumptions that shape our ideas about, and policies toward, Russia.

[Read More](#)

The Guns of Ukrainian August

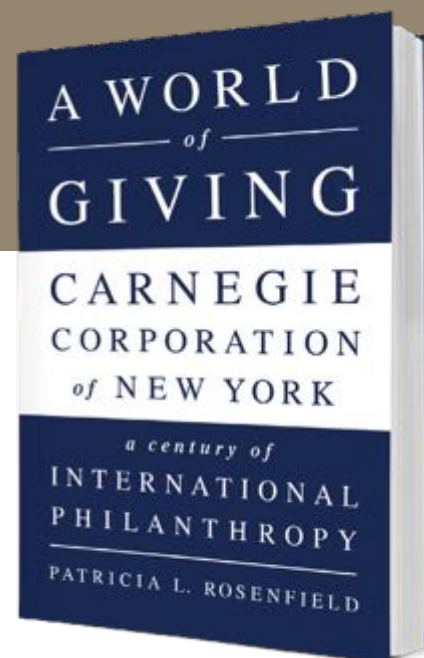
Arthur Martirosyan, The Bridgeway Group

From a conflict resolution perspective, the question—admittedly very difficult now that the violence has escalated and several thousand civilians, soldiers, and rebels have been

Carnegie Corporation of New York has long been committed to improving U.S.–Russia relations. When Ukrainians took to the streets last year to protest what they viewed as an increasingly corrupt government through street demonstrations, Russia responded by annexing Crimea, and an already strained relationship between Washington and Moscow was further breached. Vice president of the International Program, Deana Arsenian, acknowledging that the relationship had reached a “point of rupture,” invited grantees with expertise in the region to contribute their thoughts on key questions often overlooked by the media. The result is the *Carnegie Forum: Rebuilding U.S.–Russia Relations*, a site dedicated to discourse, analysis, and informed opinion about Russia’s objectives in the region, American foreign policy, and the narratives shaping the relationship today.

Check out the site at <http://perspectives.carnegie.org/us-russia>

BOOK EXCERPT: A WORLD OF GIVING



Today, many of America's most prominent foundations support institutions or programs abroad, but few have been active on the global stage for as long as Carnegie Corporation of New York. In *A World of Giving*, Patricia L. Rosenfield, formerly the director of the Corporation's Scholars Program and, earlier, chair of its Strengthening Human Resources in Developing Countries and International Development Program, provides a thorough and objective examination of the international activities of Carnegie Corporation. The book explains in detail the grant-making process aimed at promoting understanding across cultures and research in many nations around the world.

Below is an excerpt that highlights the Corporation's early efforts at bridging the gap between policymakers and academics in the area of national security under the leadership of John W. Gardner, who, among his many accomplishments, helped launch the White House Fellows Program with President Lyndon Johnson in 1964.

Internal Transitions

When Charles Dollard resigned in November 1954, the easy thing for the board to do was to make John Gardner president, since he had already served as acting president during Dollard's most recent illness. Instead, the trustees spent a few weeks considering a nationwide search to identify an external candidate. Some trustees were concerned that since Gardner would be the second internal promotion (after Dollard), the Corporation was becoming "self-infatuated." According to Devereux Josephs, former president and current trustee, they were looking for someone "more glamorous." Everyone respected Gardner's intellect

and competence, but he was not yet a figure of national prominence. Josephs opposed their view as "hero worship." When no competition emerged, he pushed for Gardner; he did not see how they could consider anyone else.

The other trustees soon agreed with Josephs and selected John Gardner to be the ninth president of Carnegie Corporation on January 20, 1955.

As a staff member, Gardner developed a reputation for displaying the strategic planning skills flagged earlier: he would select an idea that needed to be worked on, home in on it, and then develop innovative, gap-filling grants programs to address it. For example, although Gardner did not originate the area

studies program, he made it a full-scale, nationwide effort. With the perspective on national security and the anticommunism of the congressional investigations pervading the public sphere, he was also increasingly exposed to policy challenges in the making of U.S. foreign policy.

A Multifaceted Approach to National Security Research and Policy

Much like the work in international education, the Corporation's programmatic activities related to national security spanned a broad spectrum, widening the scope of the previous era. The Corporation maintained its support for the field of national security studies through the work on civilian-military relations and the ramifications of the atomic bomb and atomic energy. Staff also recommended support for studies that explored newer themes, such as the economics of disarmament and understanding internal conflicts and their causes, along with continuing examination of approaches to sustaining peace, strengthening international law, and achieving world order. In 1962 Gardner noted that "as recently as 15 years ago the universities were giving almost no attention to national security policies, despite

the great relevance of the subject to anyone concerned with the future of the nation or the world.” By the time he became president, Carnegie Corporation, the Rockefeller Foundation, the Rockefeller Brothers Fund, and the Ford Foundation had put in place programs on national security policy at the university level, and the results were well recognized, seemingly in contrast to the international affairs and area studies efforts.

In the recommendation for continued support of Columbia University’s Institute of War and Peace Studies, for example, Corporation staff members quoted the comment of *New York Times* columnist James Reston that “the most interesting new ideas regarding national security and military strategy seemed to be coming out of the universities these days rather than out of government.” Staff also wrote that some of the credit could go to the efforts of the Corporation (and other foundations) to stimulate “serious attention to these new areas.” The Corporation continued supporting William T. R. Fox’s work at Columbia University and that of his colleagues at the Institute of War and Peace Studies and the Social Science Research Council Committee on National Security Policy Research, and of John Masland and his team at Dartmouth College. Bernard Cohen and his colleagues at the University of Wisconsin conducted research and training programs “on the international factors that create security problems for the United States, the relationship of U.S. military policy to national security, and the formulation and execution of national security policy.”

In its continuing concern about atomic weapons and the rapid changes to the patterns in relations among nations being wrought by scientific and technological developments, in 1955 the Corporation supported Columbia University in establishing the Council for Atomic Age Studies as a clear-

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inghouse for research on the interrelationship of science and society, co-chaired by Philip Jessup, professor of international law, and I. I. Rabi, professor of physics. The Corporation and Columbia also hoped to stimulate research on the issues associated with the space age, such as “the political and legal problems of outer space.”

And then came *Sputnik*. Reaction to the Soviet launch in October 1957 reinforced the national security, science, and technology thrust of the Corporation, while maintaining the policy dimensions. For example, the concern about atomic weapons led to grants that enabled Henry Kissinger, then at Harvard University, to hold his Defense Policy Seminars, starting in 1960, following support through the Council on Foreign Relations for his seminal 1958 book, *Nuclear Weapons and Foreign Policy*. That publication had already “added to his reputation as a leading expert on international relations and national defense policy.”

The Corporation identified one of the underaddressed issues related to national security and atomic weapons, namely, the economics of national security policies and, in particular, disarmament as

a theme deserving special attention. As Gardner noted, “It is only recently that the field of national security policies has attracted much attention from the academic world. And so far, those academic people who have done research in the field have usually been either historians or political scientists. Although the subject matter of economics is tightly bound up with our defense effort and the planning of our future strategy, economists have been conspicuous by their absence from this field of investigation.” Once again, the Corporation sought to encourage new work through the Social Science Research Council; this particular submission to the board explained why the Corporation and other foundations in the development of new fields of research, such as national security policies, continued to turn to the Social Science Research Council. With the recognition that scholarship on foreign policy issues had to be “healthy” and “up to date,” the staff praised the Council: “Of the efforts that the Corporation has made in this direction, perhaps the most widely effective and influential has been the work of the Committee on National Security Policy Research of the SSRC [Social Science Research Council].” Staff emphasized that through its conferences and individual research grants, “the Committee has probably done more than any other single group to bring able social scientists face to face with the realities of national security policies today.” In 1958 the committee received a grant to explore the economic issues in this area.

Gardner and his colleagues noted that despite the extensive attention given to arms control and disarmament, since World War II “few systematic studies have been made of an extremely important aspect of the problem: what the economic consequences of disarmament, if it were achieved, would be.” Toward that end, the Corporation supported soon-to-be-renowned economists

Emile Benoit and Kenneth Boulding to conduct a joint study on the economic consequences of disarmament, bringing together researchers from academic institutions, the private sector, and government. Boulding, whose area of interest was the economics of peace, headed the recently established Center for Research on Conflict Resolution at the University of Michigan; Benoit was an associate professor of international business at Columbia University. Their joint research focused on issues of stabilization, reconversion, growth, equity, and international economic development. Boulding (who would become one of the most distinguished and unorthodox of American economists) and Benoit published the first book in the field in 1963, and Benoit then published a more popular, less technical edition. Not only was this work the earliest in the field, but it was also the first research effort in Boulding's new center. The Corporation was impressed by the results and made a major research grant to support Boulding and his "excellent research team." Staff members were impressed by the plans for a "promising long-range program." They also underlined the basic premises of the group "that a stable peace can never be a happy vacuum. The only hope is to develop the kinds of mechanisms and instrumentalities which will diminish tension as it arises, and resolve conflicts in an early stage."

Closely related to the economic analyses—in what has now become a more traditional field of study in national security policy and conflict resolution but then was new—was the field of game theory, which the Corporation jumped into by funding two grants at Princeton University. One grant went to Princeton's Center of International Studies for research on internal warfare, and the other supported the research on game theory and economic behavior of Oskar Morgenstern, co-

founder with John von Neumann of the field of game theory.

By the end of the 1950s, the increase in the number of internal conflicts related to the Cold War and other internal violence, whether "rebellion, revolution, mob violence, guerilla warfare, and all types of civil uprising," had not yet become a topic of scholarly attention, although as Corporation staff noted, the military had been expressing the need for greater understanding in this area. The Corporation supported a small cluster of grants related to the political dimensions of internal conflicts (Princeton's Center of International Studies), the anthropological aspects (Northwestern University), and international legal approaches (American Society of International Law).

Grants to Northwestern University supported Donald Campbell, a professor of psychology there, and Robert LeVine, assistant professor of anthropology at the University of Chicago, in co-directing a project to bring together as many as twenty psychologists and anthropologists from a variety of universities to "examine the attitudes that approximately 100 different primitive societies, shielded from the complexity of civilization, hold toward their neighbors and themselves." With their findings, the project team aimed to understand the factors that caused intergroup tensions, determine how they might be mitigated, and contribute an anthropological perspective to developing the emerging field of conflict resolution.

Recognizing that international law did not address the concerns generated by internal conflicts, the Corporation asked the American Society of International Law (ASIL) to clarify "what contemporary role, if any, international law could play in regulating international strife." In studies presciently relevant for the 1980s, 1990s, and 2000s, the Society was supported

to organize a panel of legal experts and to commission "a series of studies of actual civil wars (for example, the American civil war and the Congolese) each of which will analyze how laws of war were applied; how much and in what way outside powers intervened; whether and how international organizations were involved; and what role law played in terminating the war and establishing a viable domestic order."

Despite the extensive focus on national security policies, economics and disarmament, international law, and internal conflicts, it is striking that only a couple of grants focused on peace. Two grants each of \$75,000 a year over three years supported scholars coming to study and write about peace and international affairs under the auspices of the Carnegie Endowment for International Peace.

Another approach to achieving peace caught the imagination of acting president Alan Pifer and his colleagues. In 1967 the World Law Fund received a grant from the Corporation to further discussions on how to promote world order and eliminate war. The Corporation was interested in the four volumes of research that had been published by the World Law Fund, including a book by Richard Falk at Princeton University and Saul Mendlovitz at Rutgers University, *The Strategy of World Order*. Corporation support enabled them to write two more volumes, one on regionalism and the world order and the other on the individual and the world order.

Complementing this work was a research and writing grant to Richard Gardner, a professor at Columbia University and former deputy assistant secretary of state for international organizations; Gardner was one of the scholars concerned about delineating pathways to redefining the world order. ■

THE CHALLENGE OF FEEDING THE WO

*A Strategic
Grant with
Lasting Impact*

by KAREN THEROUX

The Hoover Tower on Stanford University's campus, part of the Hoover Institution on War, Revolution and Peace, houses the Institution's Library & Archives.

Stanford University scholars have made surprising and significant discoveries about food—how we produce, consume, think, and talk about it—thanks to a 93-year-old grant from Carnegie Corporation of New York.

When you request ketchup for your french fries, [you're actually speaking Chinese](#), says Stanford University linguistics professor Dan Jurafsky, an expert in the culturally complex language of food. As he explains, southern China is the birthplace of this very American condiment, which started out as a fermented fish sauce. The word “ketchup” originally meant “fish sauce” in a dialect of Fujian province, the coastal region that also gave us the word “tea” (from Fujianese *te*). The story of how the word “ketchup” was borrowed

by the English begins in seventeenth-century Indonesia, he explains, where enterprising Chinese salesmen sold kegs of fish sauce—along with the fiery Middle Eastern liquor *arrack*—to the British navy, which needed products that wouldn't go bad during months at sea. Tomatoes were added to the recipe decades later in England, and sugar in America, resulting in the sweet-and-sour tomato chutney that became today's ketchup. It's an example of early globalization, Jurafsky says, history revealed through etymology. “Things we



PHOTO: WILLIAM PRYNE

think of as our own are really the product of multiple cultures.”

Jurafsky, a 2002 MacArthur Fellow, studies the language of food from all angles. His research goes far beyond tracing the intriguing origins of food terms such as “[macaroon](#),” “[cevi-che](#),” and “[turkey](#).” Most of his work is in computational linguistics—using software to analyze translation or web-related topics, or for extracting meaning from sentences. What he loves most is applying his expertise to learning about food. “I started looking at big

databases, menus, and reviews, where you have lots of text, to see what we could extract from that. For example, in the case of menus, can you predict the price of a dish just from the words used to describe it?” [Yes, you can](#). In a nutshell, the longer the words, the pricier the dish, Jurafsky found.

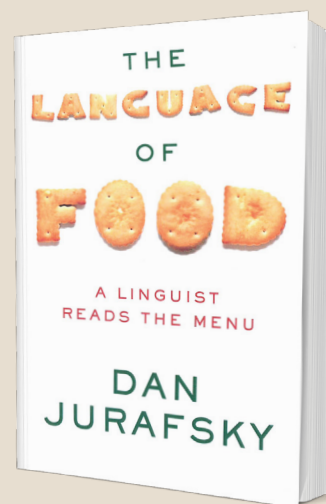
Recently, he and several co-authors from Carnegie Mellon University [published a paper online](#) exploring how reviews posted on websites such as Yelp can be used to analyze consumer attitudes. The team computationally investigated the linguistic structure in 900,000 online restaurant reviews and discovered significant differences in the types of language used to describe expensive versus inexpensive eateries. The researchers concluded that, “portraying the self, whether as well-educated, as a victim, or even as addicted to chocolate...suggests the important role of online reviews in exploring social psychological variables.”

“These million restaurant reviews on Yelp are all about social psychology,” Jurafsky says. “They’re not just about food. Language provides a window into history or behavior.” This focus is of particular importance today in two ways, he explains. It’s about linguistics, and recently he’s seen an increased interest in the social meanings in language. “We’re moving from our earlier meaning in a sentence, to how we express meaning and relationships; now it’s more about the relationships between language and social things. There’s so much in the language that we don’t think about; we just use it. There’s an infinite amount of history in just one word. It would be great if people would learn more about the language that they’re speaking—history and social implications and cultural questions that arise with every sentence.”

The History of Stanford Food Studies

Herbert Hoover was mindful of such history when envisioning the Stanford [Food Research Institute \(FRI\)](#) back in 1921. Having overseen the [rescue of approximately seven million starving Belgians](#) during the Great War, the future U.S. president wanted to preserve the historic lessons of this period in order to improve the way the world’s food supply was managed. A member of Stanford University’s first graduating class, the 40-year-old Hoover was a successful mining engineer living in London when the war broke out in 1914. He attracted the attention of the U.S. ambassador to Great Britain by helping thousands of stranded Americans who fled Europe and ended up stuck in England in the early days of the war. Hoover then agreed to run the Commission for Relief in Belgium—raising money, shipping foodstuffs into

Karen Theroux is a writer/editor at Carnegie Corporation in New York.



In his new book, *The Language of Food*, Dan Jurafsky uncovers the mysteries of what we eat every day, and explores a global atlas of unexpected culinary influences.



One of the posters produced by the United States Food Administration, led by Herbert Hoover, urging food conservation as part of the war effort.

the German-occupied country, and processing and distributing the products through a network of 40,000 Belgian volunteers, all while negotiating with the warring nations.

Hoover's Food Research Institute project was a direct outgrowth of his war experience. For the first time in history, food production and distribution, nutrition, and dietetics were seen as national and even international problems requiring government action. Hoover had lived with these problems in Europe and later as head of the wartime United States Food Administration. In 1920, he reached out to Carnegie Corporation president James Angell to fund his vision. "We feel that with \$100,000 a year we can make substantial progress and that there will be no pressing need for an increase in the amount of the fund," he wrote to

Angell. "As you know, my home is on the University campus.... This problem has been much on my mind during the past six years and in future I propose to give to it the same attention that I have in the past."

Six months later, Carnegie Corporation granted Hoover's request, committing \$704,000 for the Institute's first 10 years. The resolution stated that, at the completion of the ninth year of the Institute's work, the Corporation would determine whether "the continuance of its activities would be of enduring value." The strategy behind this decision is important to note: by making future funding dependent on the work of the first 10 years, the Corporation's Board provided important motivation to the researchers to be productive, but also assured them of a decade of job security.

FRI's purpose was the intensive scientific study of the world's food-related problems. The Stanford location made sense because it was home to the [Hoover War Library](#) (as it was then known), a large and unique collection of documentary material relating to the food problems and other economic aspects of the Great War. During the war, food administrators had collected scientific information across these fields to help meet the emergency—valuable data that were now available for study. However, large-scale, international research had never been done, and there were huge information gaps. It was hoped the Institute could help close these gaps by investigating significant food issues on the global level from the standpoint of their impact on economy and well-being.

The Food Research Institute was far ahead of its time. University-affiliated research institutions were virtually unheard of in 1921. As the Institute's executive secretary, Dr. Alonzo Taylor, wrote, "When, some thirty years ago, far-seeing men of large wealth began to endow research in the United States, preference was frequently given to institutions without university connection.... The experiences of the intervening decades have clarified the situation. Investigations of problems in certain domains are best conducted in isolated, independent institutions, without university connections. In other domains, however, progress in original research is facilitated by location within a university.... From the universities the institutions of research must draw the annual complement of young investigators. To the university the institute of research is able to contribute influences of scholarship. The modern investigator no longer desires to be out of contact with the common world. The method of scholasticism is not scholarship. Research has a social value and

contact with society is necessary to make this effective.” From the highly social perspective of 2014, Dr. Taylor had it right.

Three directors were chosen, one an expert in agriculture and food manufacturing, another in economics and food distribution, and the third in the physiology and chemistry of nutrition. With future funding hanging in the balance, the directors were motivated to launch a useful program in a short time, and unanimously decided to focus on the economic aspects of world food production, consumption, and distribution. A series of studies on wheat (then

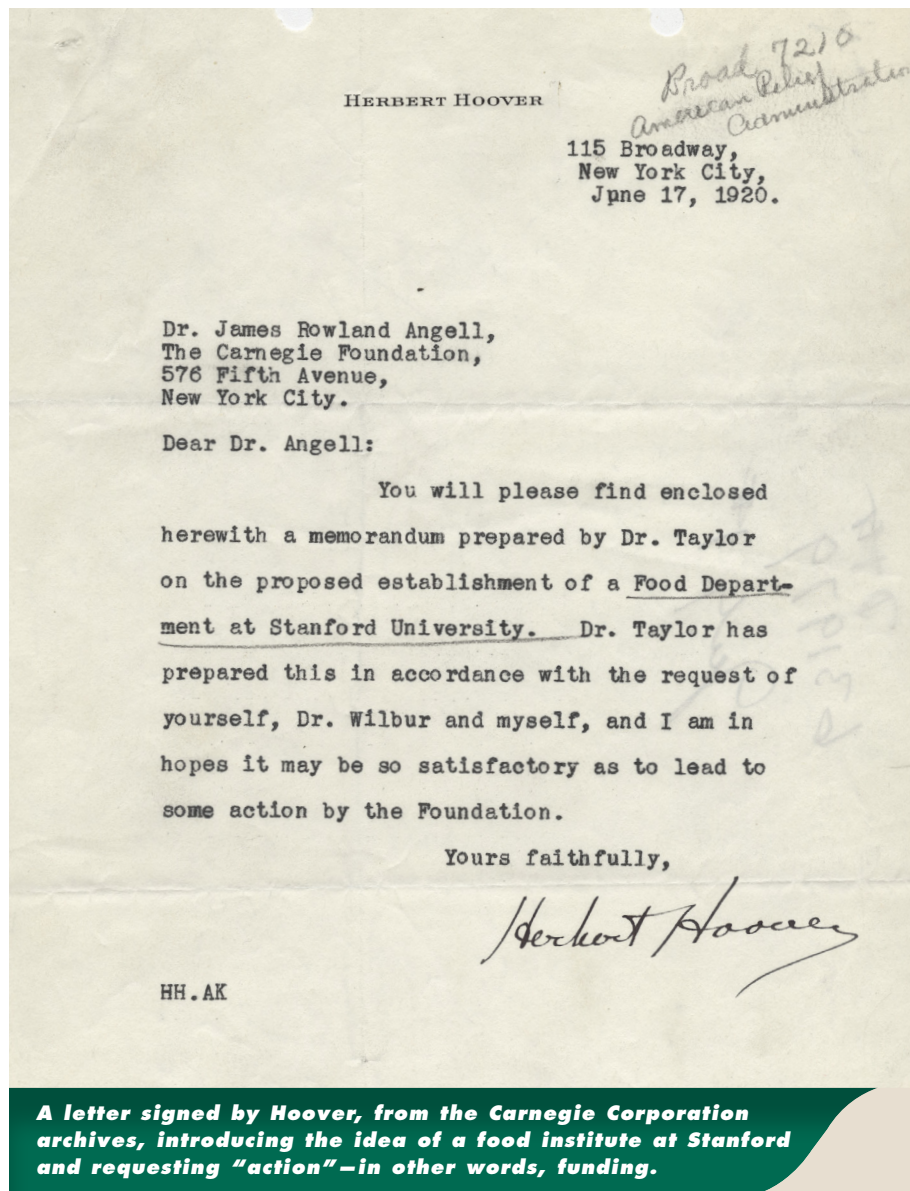
a principal source of calories and nutrients in much of the world) launched in 1924 earned a solid worldwide reputation, according to a report by Bruce Johnston, professor emeritus, earning the FRI two endowed chairs. Its related, path-breaking work on the economics of futures trading was widely regarded as its most significant product.

The Corporation’s review committee issued a highly positive report and green-lighted Stanford’s next grant in 1931. Strategic philanthropy again came into play: \$73,000 was provided to meet FRI’s expenses for the following fiscal year. After that, the

Corporation stated that “the work if continued thereafter should be under the direct and undivided responsibility of Stanford University. If the University is ready to accept such responsibility,” which it was, “the President of the Corporation is prepared to recommend a grant of \$750,000 to the general endowment of the University.” With this move, the Corporation passed along responsibility for the project, making Stanford, in effect, its parent institution, and upholding Andrew Carnegie’s approach of long-term investment toward an important goal with a good chance of success.

Over time, FRI scholars produced reports on a wide range of topics. Initial studies of food issues during WWII transitioned into a focus on food problems in the developing world: the [plantation economy of Indonesia](#); the [agricultural development of Mexico](#); and [staple food crops in western Nigeria](#), to name a few. In the 1950s, FRI received Stanford’s approval and Rockefeller Foundation’s funding for a graduate training program in which many notable members of the food economics field from the United States and other countries earned a Ph.D.

In 1996, the university decided to shut down the 75-year-old Food Research Institute and assign its staff to other departments, despite campus-wide protests and even a hunger strike. FRI students, professors, and alumni voiced their disappointment, pointing out that much of their work aimed to improve food policies in areas of the world with the greatest need. The shut-down, reportedly the largest closing of a degree-granting program at Stanford since the 1960s, was characterized by the administration as necessary downsizing due to cutbacks in federal financing of higher education. At least, Johnston wrote, “as the ‘gene pool’ of the worldwide body of cooperating



scholars, FRI is alive and well.” The same is true of its still thriving endowment, which at the time was producing annual income of \$1 million.

New Discoveries and Old Ways

Now called the Carnegie Fund, the endowment initially supported the transitioning FRI faculty and graduate students, and has since sustained several academic program areas related to the study of food. The Fund’s value has grown substantially, as has its impact on students and faculty, some of them internationally renowned scholars and rising stars in their fields. An important resource in the growth of food-related research—comprising biology, anthropology, population studies, markets, sustainable ecosystems, and global climate change—the money produced by this 93-year-old grant is making possible the pursuit of emerging disciplines and research methods as it supports new ways of looking at old traditions with lessons for today.

Case in point: the work of [Rebecca Bliege Bird](#) and Douglas Bird, ecological anthropologists who study the nomadic Martu people of Australia’s Western Desert. These Aboriginal people, who live in one of the most remote sites on the planet, [still hunt, gather, and manage their landscape with fire](#). The Birds’ long-term ethnographic research project focuses on social and ecological factors that influence the ways Martu people use natural resources and landscapes and how changes in those practices affect ecological interactions in the vast regions around their communities. Their way of life, forged over thousands of years, is based on a social code that governs how people interact with the land, with other living creatures, and with each other. They value generosity above all, and attach no status to material possessions. According to these researchers,

the Martu believe that if they do not continue to emulate the creative forces of their ancestors across the landscape, including the use of fire, the plants and animals that depend on their actions will cease to exist—beliefs the research has shown to be valid.

Doug Bird explains that he and his wife, Rebecca, were invited to work in the Western Desert in 2001 to help the Martu put together their native title claim, which gave them exclusive possession of a 136,000 square kilometer area. “We went for a short visit to take a snapshot of land and resource use in this remote part of Australia,” Doug Bird says. “We fell in love with the

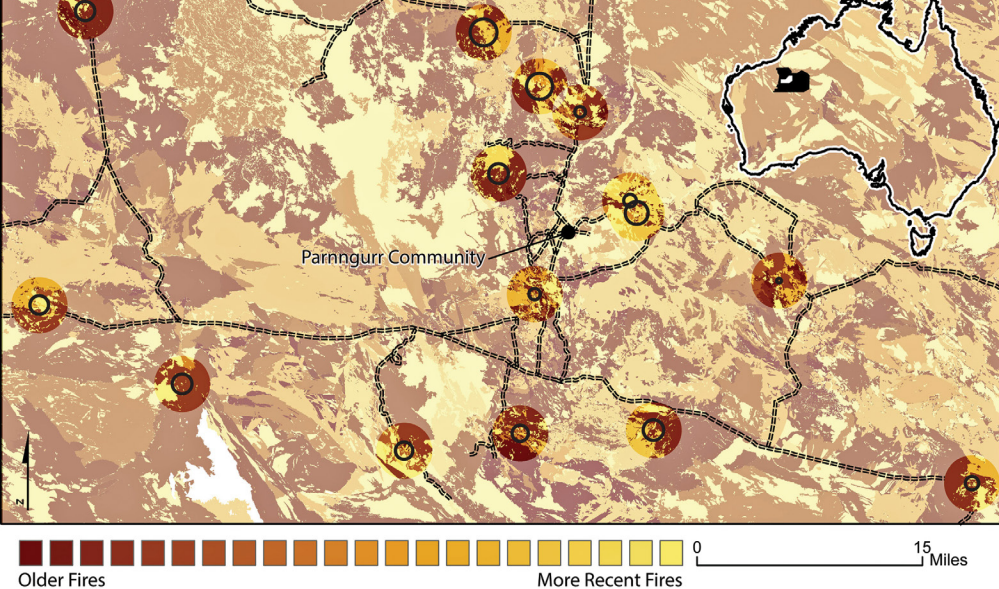
people and country and begged to stay. Since then we have spent part of every year there; it’s home in many respects.” The Martu people had continuously occupied these lands for thousands of years, and were among the last Aboriginal people to make contact with Europeans—in the mid-1960s—after which they left the land and did not return for almost 20 years.

“Prior to their departure from the desert, fire was an important component of the Martu strategy,” Rebecca Bird explains. “They burn during the winter months to expose grassland. The way they burn and move creates a small mosaic of vegetation and prevents fire



PHOTO: REBECCA BLIEGE BIRD AND DOUGLAS BIRD

A member of the Martu community sets the grass on fire to expose sand monitor lizards, a major food source, in their burrows.



A map of the land where the Martu people traditionally hunt shows greater variety of vegetation in the areas where their fires are set most often, resulting in more favorable habitat for the animals that are their primary food sources. (Circles indicate hunting areas; dotted lines indicate roads.)

Australia has the highest rate of animal extinctions on earth—over half of all mammal extinctions—of really unique animals.

caused by lightning from spreading very far. The result is better diversity, which we hypothesize supports a range of other species that are otherwise disadvantaged by larger species.” When the Martu people left their land, the fine-scale mosaic overgrew, and lightning fires swept through it, as shown on satellite imagery, wiping out mammals. “When the people came back, the environment was devastated of species that were formerly part of their diet,” she says. But the Martu adapted to the changed environment. “Today they focus almost entirely on [parna-jarlpa \(sand monitor lizards\)](#) under one kilogram in size,” she says. “They were also able to reestablish the mosaic, and you can see where it is built up because of the broader range of species, includ-

ing some of the important foods such as *kirti-kirti* (hill kangaroos).”

The research is relevant today, Doug Bird believes, because throughout Australia, dramatic changes over the last 50 years in the nature of endemic landscapes have led to the collapse of what were intact ecological communities. “It turns out that Aboriginal communities, by way of traditional practices, maintained vast landscapes that were anthropogenic, a product of their daily activities and relationships. When these people were excluded and cleared from their homelands, ecologies collapsed in a trophic cascade. [Australia has the highest rate of animal extinctions on earth](#)—over half of all mammal extinctions—of really unique animals. Pulling people out

of the landscape can have devastating consequences.”

Digging Deeper

[Sharon Long](#), Steere-Pfizer Professor of Biological Sciences at Stanford, also focuses on ancient practices with enormous potential for modern agriculture. A 1992 MacArthur Fellow, Long works at the intersection of genetics, biochemistry, and cell biology, studying [the symbiosis of nitrogen-fixing bacteria and legumes](#). Her work, looking at bacteria that live in plant roots and provide nitrogen to the plant for protein nutrition, aims to improve the use of plants and bacteria in energy conservation and sustainable agriculture. “There’s a beneficial association between bacteria and plants,” Long says. “In the presence of the right host plant, the bacteria and the plant recognize each other and coordinate to establish symbiosis. The result is the formation of root nodules, like organized tumors, where bacteria inhabit the interior of individual plant cells and help the plant make protein.”

The process of interacting with bacteria is actually the basis of crop rotation practiced in many ancient societies, according to Long. Because of this remarkable interaction, plants of the legume family—soybean, alfalfa, lupines, and others—are constantly converting nitrogen into protein using only the energy of sunlight. The plants themselves are a source of high-quality protein for humans and animals, and they also return essential protein to the soil. Farmers in the ancient world didn’t know why this happened, but knew using legumes in crop rotation—a key element of sustainable agriculture for millennia—would nourish the soil. Also, because some legume varieties can grow in very harsh environments, these plants are critically important to natural ecosystems around the globe.



A field of alfalfa, the flowering legume grown throughout the world for the protein content resulting from nitrogen-fixing bacteria in its root nodules.

In the modern world, plant-based proteins and sustainable farming have vital implications for food security. “The inability to get enough protein can happen when there are agricultural deficiencies,” says Long, “which is one of the most devastating problems for humans worldwide.” High-protein foods require a great deal of nitrogen, which is scarce, she explains. In western cultures when we think about protein we seek a protein-rich (usually animal-based) food, which requires a lot of nitrogen. Animals get nitrogen to make protein from plants, which get nitrogen from soil, which becomes depleted over time and cannot provide plants with nitrogen. Adding nitrogen fertilizer is one solution, but a very resource-intensive one, because large amounts of fossil fuels are required to produce it. “Artificial fertilizers are not

only expensive, they contribute substantially to environmental pollution by running off into ground water. The benefit of nitrogen-fixing symbiosis is that a plant can grow in a nitrogen-poor soil *without* nitrogen fertilizer.”

Research done in Long’s lab has identified ways in which the bacteria and plants exchange signals in order to coordinate with each other. Once the genes responsible for symbiosis were isolated, studying them revealed that the plant sends out a chemical signal to the bacteria, and the bacteria answers back with another chemical signal, causing gene activity. “Our bacterium is a pretty good lab workhorse,” Long says. “And many people work on it. It was the first to have its sequence identified. A set of six groups who did genetics got together and said ‘we should do it.’ Over two years the groups would

work in their own labs then get together to pool data. After that the world changed and other kinds of experiments became possible.

“It’s clear that agriculture as a part of the world enterprise is under great stress, and that stress is growing,” Long says. “Population increases along with climate change, water resource issues, and diseases—given these concerns, understanding the molecular basis for important agricultural processes is acutely important. But with more understanding and more precise tools, is there a way to make an existing symbiosis better? Can we think of ways to accelerate the symbiosis even in salty soil? More and more, we’ll want to find solutions for sustainable agriculture under climate change conditions.”

Nearly 100 years ago Herbert Hoover acted on what he saw as his mission in life—protecting the world’s food supply—and created a new kind of institution to get the job done. Today, Dan Jurafsky, Rebecca and Doug Bird, and Sharon Long, four notable representatives of Stanford’s almost 200 Carnegie Fund scholars, carry on the search for new understanding, ideas, and approaches related to the all-important subject of food. Work undertaken in the Food Research Institute since 1921 has helped “seek to find solutions for the challenge of feeding the world,” wrote Richard P. Saller, dean of the School of Humanities and Sciences that now administers the Carnegie Fund, in his report on its recent activities and beneficiaries. These scholars’ fieldwork and research has addressed food crises in some of the most war-torn and under-resourced corners of the world. “While no one can predict where new discoveries will come from in the area of food research,” Saller wrote, “this fund will continue to provide critical strategic support as we seek solutions for today’s most challenging global problems.” ■

Carnegie Corporation *on the* World Stage

Vartan Gregorian—*continued from inside front cover*

drowned out by the “Guns of August,” as historian Barbara Tuchman so aptly named the opening salvos of World War I. A third International Peace Conference, set for 1914 and postponed to 1915, never took place. Instead, humanity witnessed the breakout of the First World War, also known as the Great War, which did not end by Christmas, as predicted by some, but lasted for four years. During that period, some 30 million people perished and an entire generation of youth was extinguished. It was just as the Polish railway magnate Ivan Bliokh, whom Mr. Carnegie greatly admired, predicted more than a decade earlier in his 1898 treatise, which graphically quantified the horrendous casualty rates and other havoc that would result from a future armed conflict.ⁱⁱⁱ

Notwithstanding that he was unable to achieve the vision of unity and prevention of war he had yearned for in his lifetime, Andrew Carnegie’s legacy of peace has endured for more than a century. Today, the Hague Peace Palace stands as a symbol of international and humanitarian law and is home to the International Court of Justice, the Permanent Court of Arbitration, and the renowned Peace Palace Library. The Carnegie Endowment for International Peace is now one of the world’s premier think tanks, advancing the internationalist vision laid out by Andrew Carnegie through in-depth analysis and the generation of policy ideas.

“But just as naturally every nation regards every other nation’s armaments as clearly instruments of war.... Thus each nation suspects all others, and only a spark is needed to set fire to the mass of inflammable material.”
—Andrew Carnegie

Under the dynamic leadership of Jessica Tuchman Mathews, the Endowment has established research centers in Russia, China, Europe, the Middle East, and the United States, making it one of the truly global research institutions of our time. It is now poised for a new period of growth under its recently appointed president, highly acclaimed diplomat and former Deputy Secretary of State William J. Burns.

The goal of achieving global peace and security has also been one of the central missions of Carnegie Corporation of New York since its earliest days. A new book, *A World*

of Giving: Carnegie Corporation of New York—A Century of International Philanthropy by Patricia Rosenfield, highlights a multitude of programs and projects that sought to promote global peace—efforts that continue today. This issue of the *Carnegie Reporter*, in addition to providing an excerpt from that volume, highlights international efforts to expand on its founder’s belief that global peace can indeed someday become a reality.

One constant theme in the Corporation’s grantmaking has been the need to integrate deep knowledge and scholarship of the highest quality into the development of policies and programs aimed at advancing global peace and security. In “Activating the Power of Ideas,” Stephen Del Rosso, the Corporation’s International Peace and Security Program director, highlights projects aimed at bridging that gap in the realms of cybersecurity, the growing influence of non-state actors, and institution building in fragile states. These projects, part of a new Corporation initiative, are being overseen by scholar-practitioners including former NATO Supreme Allied Commander for Europe Admiral James Stavridis at Tufts University and former U.S. Ambassador to Iraq, Christopher Hill, at the University of Denver.

Recently, in conjunction with The New York Public Library and *Lapham’s Quarterly*, Carnegie Corporation held a conference marking the centennial of World War I, an event that brought together historians and activists to discuss why the peace movement failed in 1914 and where the voices for peace are today. The day’s panel discussions offered an intriguing contrast between activist mobilization at the turn of the twentieth

century and now in the age of social media. This edition of the *Carnegie Reporter* builds on that theme by featuring the work of Joshua Tucker and a team of researchers at New York University’s Social Media and Political Participation (SMaPP) laboratory, who are currently studying the real-world implications of social media and technology on social movements.

As the communications revolution continues, the Corporation aims to be out in front, engaging a broad range of groups through interactive projects focusing on long-

standing issues of international concern. That includes the creation of digital forums for discussion of today's important issues, such as U.S.–Russia relations. Hence, this past summer, when the crisis in Ukraine pushed that relationship to what Vice President for International Programs Deana Arsenian called a “point of rupture,” we invited grantees with expertise in the region to contribute their thoughts on key questions often overlooked by the media. These analyses, a number of which come from the Carnegie Endowment for International Peace, are at the heart of the online Carnegie Forum on Rebuilding U.S.–Russia relations highlighted in this issue. Carnegie Corporation has a long history of promoting the study of Soviet–U.S. and Russia–U.S. relations. Beginning in 1946, the Corporation worked to promote Soviet studies at Harvard, Columbia, and other universities and, following the fall of the Soviet Union in 1992, has endeavored to build bridges between Russian and American institutions, intelligentsia, politicians, and military establishments, all based on the belief that first-hand knowledge and relationships are essential to successful diplomacy.

The Corporation's efforts related to peace and diplomacy have not been confined to Russia. The list includes initiatives connected to North Korea, Kashmir, the Balkans, and the resolution of all kinds of international conflicts. Since the 1920s, the Corporation has also been active in Africa, operating under the belief that education is the key to providing new leaders for the continent and its institutions. Since 2000, a handful of American foundations have invested \$500 million in Sub-Saharan Africa's higher education system through the Partnership for Higher Education in Africa. In addition, the Corporation has promoted the growth and development of libraries on the continent, and has begun an initiative in partnership with King's College London and the University of Nairobi to develop a new generation of African scholars in peace, security, and development studies.

Headlines about Africa are still filled with platitudes describing a continent of war, poverty, and even epidemics, including the latest news coverage of the Ebola crisis in West Africa. Thankfully, today both the media and the public are increasingly focusing on the potential and attainments of African nations and the continent's unprecedented economic growth, opportunity, and improved governance. The Corporation's significant investment in Africa's most precious resource, its people, has seen great returns, with

much more to come. Readers can learn more about Africa's progress through the eyes of Omotade Akin Aina, Carnegie Corporation's former Program Director, Higher Education and Libraries in Africa, who is profiled in this issue.

As we well know, Andrew Carnegie drew on his experiences in the commercial and industrial sectors to shape a vision of globalization that predated the term itself. “We are coming to understand,” he wrote in *The New York Times* in 1907, “that the human race is one....The interests of thousands who depend on the manufacture of agricultural implements of machinery of other sorts is at stake when the farms of Russia are lying untilled or the factories of Germany are closed because the men are off to war.”^{iv} The economic consequences of war on Europe's agriculture is among the subjects addressed by Corporation writer and editor Karen Theroux in her article about food research. As Ms. Theroux explains, the concept of a “global food basket” is one that future U.S. President Herbert Hoover understood well when asked by the Committee for Food Relief to help feed millions of Belgians in 1914. His experience during the Great War inspired Hoover to establish the Food Research Institute (FRI) at Stanford University, where work on protecting the world's food supply, developing innovative agricultural techniques, and researching many of the world's food-related problems continues today in various forms. Carnegie Corporation was among the first to support this crucial project through several grants.

This edition of the *Carnegie Reporter* highlights some of the international work undertaken by Carnegie Corporation of New York in the past and the present. These programs, despite their wide scope, are all designed to help to further Andrew Carnegie's fundamental goals of building bridges among nations and cultures to promote mutual understanding, and of creating institutions and diplomatic channels to prevent deadly conflict. So while Mr. Carnegie's efforts to prevent the Great War failed, nevertheless the ideals he championed and the institutions he built to prevent future wars have endured and faithfully continue to pursue the cause of international understanding and peace today. ■

ⁱ Andrew Carnegie, *David Nasaw*, p. 741

ⁱⁱ Andrew Carnegie, *David Nasaw*, p. 726

ⁱⁱⁱ *Foreword to Civilians in War*, Vartan Gregorian, p. IX

^{iv} Andrew Carnegie, *David Nasaw*, p. 724

RecentEvents

Carnegie Corporation President Vartan Gregorian Visits Armenia

Born in Tabriz, Iran, of Armenian parents, Vartan Gregorian came to the United States in 1956 to attend Stanford University. Gregorian has been honored by many Armenian organizations and has been a frequent lecturer on Armenian history and culture. Between 1972 and 1984, he served as the Tarzian Professor of Armenian and Caucasian History, as well as Professor of South Asian History, at the University of Pennsylvania. Gregorian first went to Armenia in 1965 as an ACLS/SSRC (American Council of Learned Societies/Social Science Research Council) fellow in 1965. He briefly returned in 2000, making this his third visit to Armenia.



In October 2014, President Gregorian and International Program vice president, Deana Arsenian, traveled to Armenia to take part in the opening ceremony of [Dilijan College](#), on whose board Gregorian serves. While in the country, they took advantage of the opportunity to visit many other Armenian institutions.



PHOTO: SASHA GUSOV

Gregorian engaged in a favorite activity: sharing his exceptional life story with students.

The next stop was Yerevan, the capital of Armenia, which just celebrated its 2,796th anniversary. Gregorian joined in a celebration marking the 20th anniversary of the [Armenia Tree Project \(ATP\)](#).



Gregorian at the podium with ATP founder Carolyn Mugar, an Armenian-American. To combat environmental devastation, ATP has planted more than 4.5 million trees in Armenia's deforested zones since 1994.



Visitors toured the restoration workshop at Matenadaran, a repository of ancient Armenian manuscripts dating back to the year 700 CE, to which Gregorian has donated several manuscripts and rare books.



PHOTO: SASHA GUSOV



PHOTO: SASHA GUSOV

(Left) Serzh Sargsyan, President of the Republic of Armenia, and Vartan Gregorian. (Right) Gregorian greets Supreme Patriarch and Catholicos, Karekin II, leader of the Armenian Church worldwide.

Over 1,000 people attended the opening, which was led by President Sargsyan. Dilijan is an international coeducational boarding school and part of the [United World College \(UWC\)](#) movement. Founded in 1962, the UWC strives to make education a force uniting people, nations, and cultures for peace and a sustainable future. Dilijan is the fourteenth UWC and the first extension into the Caucasus region.

ALL PHOTOS COURTESY OF DEANA ARSENIAN UNLESS OTHERWISE INDICATED.

RecentEvents... *Continued from page 33*

One high point of the trip was [visiting the American University of Armenia \(AUA\)](#) for the official [opening of Gregorian's book collection](#) at the university's Papazian Library. Gregorian has donated works on history, sociology, philosophy, and art—a collection of several hundred books—to supplement AUA's resources and emphasize the important role of higher education in Armenia.



PHOTO: AMERICAN UNIVERSITY OF ARMENIA

Gregorian cut the ribbon to officially open his book collection to the public, while American University of Armenia president Dr. Armen Der Kiureghian looked on.

Another stop was Yerevan State University for a visit to the Caucasus Research Resource Center (CRRC), one of four centers comprising a network in Armenia, Azerbaijan, and Georgia, created in 2003 as part of Carnegie Corporation's work on strengthening higher education in the former Soviet Union. University-based and independently operated, the Center is designed to offer access to research materials and provide educational tools to young professionals and academics in the fields of economics, sociology, demography, political science, anthropology, and environmental sciences.



(Left) Gregorian and CRRC chief operating officer, economist Haghine Manasyan. Together, the three CRRCs have supported thousands of local researchers over the past 10 years, achieving prominence in public policy research and analysis. (Right) Fellows waited patiently as Gregorian autographed the latest CRRC publication.

The final item on the itinerary was the National Academy of Sciences of the Republic of Armenia (NASRA). This organization oversees, promotes, and carries out fundamental and applied research in various scientific fields, and coordinates research programs throughout Armenia.



Several years ago Gregorian was elected an honorary full member of the Academy, the nation's highest honor for academics. On this visit he was handed his official diploma and presented with a gold medal by the president of the Academy.

Carnegie Corporation Hosts Emerging Leaders of Pakistan Fellows



Vartan Gregorian (wearing his new gift shawl) with the Pakistani visitors and their Corporation hosts.

In November 2014, 15 outstanding young Pakistanis made their first trip to the United States to meet with policymakers, community leaders, diaspora communities, and regional experts as part of the Carnegie Corporation-sponsored Emerging Leaders of Pakistan (ELP) Fellowship Program. Their journey included visits to the headquarters of Senator Kirsten Gillibrand, Buzzfeed, *The New York Times*, City Hall, and the Corporation for a meeting with President Vartan Gregorian before heading off to the

United Nations. From New York they traveled to Washington, D.C. and Detroit, finishing up their cross-country trek in San Francisco. The ELP program, which began in 2012, is run by the South Asia Center of the Atlantic Council. Aimed at empowering the next generation of Pakistan's leaders, it identifies, cultivates, and supports young people in Pakistan who have the potential to guide the country's future by offering them resources and opportunities to strengthen their engagement within civil society.

Foundation **Roundup**



Charles E. Kaufman Foundation Awards Nearly \$2 Million for Research

[The Charles E. Kaufman Foundation](#), a supporting organization of the Pittsburgh Foundation, has announced grants totaling more than \$1.9 million in support of cutting-edge scientific research at Pennsylvania universities.

In the New Investigator Research category, grants of \$150,000 over two years were awarded to Nathan L. Clark, Ph.D. (University of Pittsburgh), Tzahi Cohen-Karni, Ph.D. (Carnegie Mellon University), Gregory Lang, Ph.D. (Lehigh University), David Pekker, Ph.D. (University of Pittsburgh), and Matt Youngman, Ph.D. (Villanova University).

In the New Initiative Research category, which targets investigators with a strong record of accomplishment pursuing innovative interdisciplinary approaches focused on a common research question, two-year grants of \$300,000 were awarded to Alison L. Barth, Ph.D. and Marcel Bruchez, Ph.D. (Carnegie Mellon); Alexander Deiters, Ph.D. and Michael Tsang, Ph.D. (University of Pittsburgh); Ayusman Sen, Ph.D. (Penn State University) and Anna C. Balazs (University of Pittsburgh); and Alison Sweeney, Ph.D. and Randall Kamien, Ph.D. (University of Pennsylvania).

"This story is an exceptional example of how local philanthropy can attract other funding, increasing the scale and broadening the scope of research at universities,"

said Dr. Graham Hatfull, chair of the Charles E. Kaufman Foundation's Scientific Advisory Board and Eberly Family Professor of Biotechnology and Professor of Biological Sciences at the University of Pittsburgh. "The Charles Kaufman grants support ongoing transformative research that could spark a whole new area of science.

"Because of the generosity and foresight of Mr. Kaufman, we are able to facilitate the initiation of research projects and cultivate new researchers, placing them in a position to deliver advances and attract additional sources of support for their work," added Dr. Hatfull.

For more information on the Kaufman Foundation, please visit: <http://kaufman.pittsburghfoundation.org/News/2014-Awards-Announcement>



Silicon Valley Talent Partnership Expands to Connect Local Talent with Local Government

[Silicon Valley Talent Partnership](#), a collaboration between the public sector, private companies, and local government designed to address challenges and build community, will expand its program with \$1 million from the John S. and James L. Knight Foundation.

"Silicon Valley Talent Partnership presents a unique challenge and opportunity for private-sector employees to bring skills beyond traditional volunteering to civic projects," said Lea King, who has been recruited to lead operations and build the program's presence in the community. "I'm thrilled to be part of an organization that connects our region in new, meaningful, and innovative civic partnerships."

The Silicon Valley Talent Partnership builds volunteer teams of private-sector talent to work with the government on complex projects with wide impact. The teams help agencies address gaps in capacity, time, and expertise. Thus far, the organization has engaged more than 80 volunteers from companies across the region for a total of 2,400 volunteer hours. Projects have included a design lab at the Stanford d.school, a marketing and communications plan with the city of Santa Clara, and development of a San Jose summer reading app by eBay engineers with the San Jose Public Library System.

Knight funding will help expand programs such as these and support a range of co-created government projects between private volunteers and public officials. Local agencies in San Jose and Santa Clara County will identify potential projects and the Silicon Valley Talent Partnership will manage these requests. The chosen projects will focus on improving public services through technology and innovation. Additionally, an outreach plan will be created to encourage more people to take part. As executive director, King will drive these efforts.

The Silicon Valley Talent Partnership was co-founded by the city of San Jose and the Silicon Valley Leadership Group in 2012. The project was initiated by the city of San Jose Mayor's Office and became an independent nonprofit organization in 2013.

The expansion of the Silicon Valley Talent Partnership forms one part of Knight Foundation's efforts to build opportunities in San Jose, while fostering talent retention and attraction. In addition to several other investments in the city, Knight recently announced support to three community organizations to create a

more vibrant downtown San Jose.

For more information about the Silicon Valley Talent Partnership and the John S. and James L. Knight Foundation, please visit: www.svt pca.org and www.knightfoundation.org



Open Society Foundations Awards \$5 Million Challenge Grant to Innocence Project

[The Open Society Foundations](#) announced it will help bolster the Innocence Project's new reserve fund campaign.

[The Innocence Project](#) works with people who have used all legal avenues to prove their wrongful conviction. Most often they are poor and forgotten by the justice system. Since 1992, 317 people (18 of whom served time on death row) have been exonerated by DNA evidence; the Innocence Project was involved in 173 of these cases.

The campaign aims to establish a \$20 million reserve fund to fortify the Innocence Project's future as a leading criminal justice advocacy institution in the United States. The Innocence Project uses a potent combination of law, science, and social justice advocacy to reverse wrongful convictions in the United States.

Open Society will provide up to \$5 million in support, beginning with an initial \$1 million grant. The foundation will award an additional \$1 million for each \$2 million the Innocence Project raises.

For more information on this work at the Open Society, please visit: <http://www.opensocietyfoundations.org/press-releases/open-society-foundations-award-5-million-challenge-grant-innocence-project>

THE BackPage

Omotade Akin Aina is a champion of philanthropy. Sitting in his office among books and half-packed boxes on the eve of his departure from Carnegie Corporation of New York, he reflects on the ability of foundations to help make dreams come true. “To be part of that is a privilege,” he says, adding that the American model of philanthropy is one he’d like to see emulated in Africa.

“Africa has been the singular issue in my life,” Aina, who hails from Nigeria, says. “It’s where I grew up, just before independence in 1960. I was old enough to see the struggles.”

Aina—“Tade” as he is known to friends and coworkers—served as director of the Corporation’s Higher Education and Libraries in Africa Program from 2008 to 2014. Now, after 16 years in private philanthropy, including a decade with the Ford Foundation, he is leaving New York for Nairobi, Kenya to advance the work of the [Partnership for Social and Governor’s Research in Africa \(PASGR\)](#). The aim of the program is to foster a new generation of policy-savvy researchers, activists, and administrators who have the capacity to help translate research into public policy.

Aina has always placed his stock in the development of [young African scholars](#). In his time at the Corporation, Aina pioneered the Developing and Retaining the Next Generation of Academics in

African Universities initiative. Formulated at the 2008 University Leaders’ Forum in Accra, Ghana, and inspired by the findings from an assessment of African university staffing conducted by University of British Columbia professor Wisdom Tettey, the initiative has helped strengthen post-graduate programs, foster disciplinary networks and fellowships, and advance academic leadership and policies across sub-Saharan Africa.

The Next Generation initiative was introduced by Aina and the Corporation after the

An African Pioneer **Heads Home**

by NOAH PISNER

conclusion of the groundbreaking [Partnership for Higher Education in Africa \(PHEA\)](#). Launched in 2000, the decade-long grantmaking program was initiated by Carnegie Corporation President Vartan Gregorian, and carried out by the Corporation along with the Ford, MacArthur, and Rockefeller Foundations (later joined by the Kresge, Mellon, and Hewlett Foundations). It aimed to strengthen African universities to enable them to be full-fledged partners in development. Spanning ten years, PHEA was unprecedented in scale, affording \$450 million to 379 institutions; bringing e-learning and information technology up to date; funding new infrastructure; and contributing to a growing

body of research on the relationship between development and higher education. “When Vartan Gregorian established the Partnership,” Aina explains, “the idea was to invest not only as a way to revitalize universities, but as a statement to the world that this is important.”

The Partnership represented one of the greatest private sector higher education investments in Africa to date, emphasizing improvements in libraries, labs, journals, broadband connectivity, and female enrollment. An estimated four million students benefitted from the program. By 2008, however, member organizations had yet to determine exactly how to ensure the permanence and sustainability of those investments. Aina recalls the concerns of one

African university professor at the time: “This is fine,” the professor said, admiring a new library PHEA had funded. “But I’m 63 years old. Who is going to take care of this place after I am gone?” This apprehension, shared by many across the continent, was what brought Aina to the Corporation in 2008 and inspired the Developing and Retaining the Next Generation initiative.

“Retaining,” Aina emphasizes. This is his area of expertise. He cites a crisis in faculty capacity that, coupled with soaring demand, has wracked the continent since the late 1970s: a loss of older generations of academics (more than half are currently over the age of 50), a shortage of Ph.D.s (in most African universities, fewer than



PHOTO: VIRGINIA MALLON

Noah Pisner is a writer based in New York City and a recent graduate of Harvard University.

40 percent of professors have terminal degrees), and ongoing brain drain. In 1998, Gregorian expressed particular concern “about the fate of African universities given [the exodus of talent from that continent to other parts of the world](#).”

For decades, Africa’s burgeoning academy has been losing many of its gifted minds to foreign institutions, depriving its nations of the homegrown expertise that could lift millions out of poverty. Consequences include faculty vacancy rates of more than 40 percent—and growing—at Africa’s top universities and, according to a 2009 report, over 20,000 professors leaving the continent annually. Reasons for leaving

fields like private consulting.

“So what kept me in Africa? Opportunities for professional development, opportunities to contribute, the fact that I was not isolated, that I was part of research and training networks, that I could attend conferences and get published, so I could move up,” Aina says. “Those are the things we are talking about now. Young scholars, early in their careers, need opportunities for professional development. They should go to conferences, they should be linked with networks, they should be able to write, publish, do research, be mentored.”

One of Aina’s goals in directing the Corporation’s Next Generation initiative was to

searchers in eight countries, established under the auspices of the Partnership and run by the Centre for Higher Education Transformation Trust.

With Gregorian, Aina has also helped the World Bank plan its [Africa Higher Education Centers of Excellence Project](#). The founding of the project reveals a remarkable change of face for the international body, which has historically directed its support toward primary education. “We helped change World Bank thinking on investing in higher education in Africa,” Aina says. “The World Bank did an about-turn.”

In large part due to the efforts of the Corporation and its partners across the continent, several African governments, including those in South Africa, Nigeria, and Kenya, are now investing more in Ph.D. and postdoctoral training than ever before. “It’s not about where you put the money. It’s about where you change the conversation,” says Aina. “Governments are really talking about the importance of faculty development and research. They are now doing research to identify their capacity deficits in doctoral training.”

In just six years, the Next Generation project has already shown promising returns. One effort, the [African Leadership Centre](#), in which the Corporation has invested \$3.7 million, has maintained nearly 100 percent retention of its scholars by facilitating their participation in processes of national development and regional integration. “It is the most remarkable group of young men and women,” Aina says of the Centre. “They are full of optimism and energy. They truly believe that they can do it. I never feel more energized than when I am with them.”

In addition, the Corporation

has committed to funding scholarships for women. Nearly \$21 million has been invested in women’s opportunities in higher education, benefiting more than 5,000 female students.

Aina estimates that by the end of 2014, the Corporation will have contributed to the creation of between 800 and 1,000 Ph.D.s. “The numbers are illuminating,” Aina says. “But there are intangibles, too. For the first time in a long time, Africans are saying they value their universities. And we are seeing people we have invested in stay on the continent. We are hearing their stories. In the universities we supported, the students are becoming assistant professors, full professors; they are publishing...it turns out that if you get a critical mass of these young, well-trained doctoral and postdoctoral students, who come to work in universities, you are building a pipeline for more to come through.”

The Corporation’s recent work in African higher education will culminate in the forthcoming [African Higher Education Summit](#) to be held in Dakar, Senegal, in March 2015. Like the 2008 University Leaders’ Forum, the conference will seek to establish next steps.

“We have reached an inflection point in democracy’s march across Africa,” Aina says. “We will bring change in one generation. How we train our own leaders will make all the difference. If they are not just committed to research, but committed to the continent and to its economic and social development and bringing about change...then you’ve done it—these are your foot soldiers!”

Aina calls this the regaining of self-confidence. “It’s one of those things you need to see firsthand to appreciate,” he says. “It will be good to go home and see.” ■

PHOTO: UNIVERSITY OF THE WITWATERSRAND



Graduates at University of the Witwatersrand.

are predominately financial; private divestment and structural austerity plans implemented by the International Monetary Fund and World Bank have depleted university resources in Africa. This has resulted in scholars leaving the continent in search of fair remuneration, as well as greater academic freedom, more reasonable teaching loads, and better career advancement opportunities, including in

change the way African institutions perceive themselves, and how they are perceived externally. Since the launch of the Next Generation program, the Corporation has taken a multitiered approach to altering perceptions. To support and provide for higher education advocacy, for instance, it funds the Higher Education Research and Advocacy Network in Africa, a think tank that supports more than 20 re-



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VOICES for PEACE 1914/2014



“WHOSO WANTS TO SHARE THE HEROISM OF BATTLE LET
HIM JOIN THE FIGHT AGAINST IGNORANCE AND DISEASE—
AND THE MAD IDEA THAT WAR IS NECESSARY.”

Andrew Carnegie wrote these words in *The New York Times* in 1907—part of his lifelong struggle to end earth’s “most revolting spectacle—human war.” Carnegie the millionaire industrialist was also a pacifist. He held on to his Utopian dream of world peace to the very end, and died broken-hearted in August 1918, mere months before the signing of the armistice that ended World War I.

To mark the 100th anniversary of the outbreak of the Great War and draw attention to America’s long tradition of peace activism, Carnegie Corporation of New York, *Lapham’s Quarterly*, and The New York Public Library (NYPL) presented a series of discussions by eminent historians and activists centered on attempts to prevent war in 1914 and present-day efforts to achieve international peace.

Vartan Gregorian, president of Carnegie Corporation, and Tony Marx, president and CEO of NYPL—a historian and a political scientist, respectively—opened the event, which began with a panel discussion moderated by Lewis Lapham, founder and editor of *Lapham’s Quarterly*: “Who were the Voices for Peace Then (And Why Did They

Fail)?” Jack Beatty, news analyst for NPR’s *On Point*; Adam Hochschild, prize-winning author on human rights and social justice; and Michael Kazin, professor of history at Georgetown University and co-editor of *Dissent* made up the panel.

Jessica Tuchman Matthews, former president of the Carnegie Endowment for International Peace, introduced the keynote speech—“A Fool for Peace: Andrew Carnegie and the Coming of the Great War”—by David Nasaw, Carnegie biographer and Arthur M. Schlesinger, Jr. professor of history at the CUNY Graduate Center. Lapham returned as moderator for the second panel discussion, “Where are the Voices for Peace Now?” Panelists were Leslie Cagan, a veteran of peace and justice movements from the Vietnam War to the People’s Climate March; Sir David Cannadine, Dodge professor of history at Princeton University; and Steve Fraser, historian, author, and co-founder of the American Empire Project book series.

Attendees at the event also had the opportunity to tour the library’s exhibit “Over Here: WWI and the Fight for the American Mind.”