

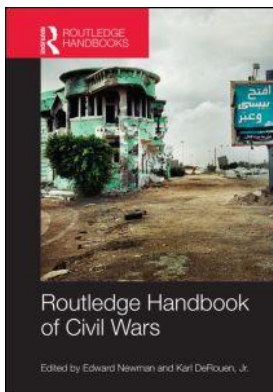
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THE WAY FORWARD, OR JUST ANOTHER TOOL IN THE TOOLBOX?

Social media and what it means for conflict researchers

Thomas Zeitzoff

When you give everyone a voice and give people power, the system usually ends up in a really good place.

Mark Zuckerberg, CEO of Facebook

Twitter provides us with a wonderful platform to discuss/confront societal problems. We trend Justin Bieber instead.

Lauren Leto, comedian

Political scientists have long griped about the poor quality and quantity of data available to them in comparison to the hard sciences and economics, with its rich history of time-series. Even within the discipline there remains a relative pecking order and jealousy, with scholars of American politics enjoying comparatively better data than scholars of comparative politics or international relations.¹ It can be argued that better data quality is both correlated with quantitative sophistication of the subfield and theoretical advancement (again from a quantitative perspective), with American politics at the top of the pecking order and international relations/conflict researchers middling and towards the bottom.

Early on scholars of international relations recognized the need to systematize and create high-quality, replicable conflict datasets. The results of these efforts included the Correlates of War (COW), Cooperation and Peace Data Bank (COPDAB) (Azar, 1980), Kansas Events Data System (KEDS) (Schrodt and Gerner, 1994), and WEIS scales (Goldstein and Rotich, 2008). As conflict researchers began to turn their focus on civil wars, scholars began to compile lists of civil conflict and compile them into datasets. Most prominent are the Fearon and Laitin (2003) and the Uppsala Conflict Data Program/Peace Research Institute Oslo Armed Conflict (UCDP/PRIO) Dataset. More recent datasets, such as the PRIO ACLED (Armed Conflict Location and Event Dataset) (Raleigh *et al.*, 2010), have used geocoded information on battles and casualties to further disaggregate conflict trends.

The increasing number of micro-level disaggregated datasets compiled by conflict researchers has also corresponded to the rising use of social media (Facebook, Twitter, YouTube etc.).

Following Kaplan and Haenlein (2010: 61) social media can be defined as “a group of Internet-based applications that build on the ideological and technological foundations of Web 2.0, and that allow the creation and exchange of User Generated Content.” The development of social media, particularly the increasing usage of Twitter through 2009, coincided with electoral unrest in Iran and widespread protests. The media was quick to label this and subsequent protests throughout the Arab world as the “Twitter Revolutions.” However, as Aday *et al.* (2010) suggest, caution should be exercised when interpreting social media’s role as a “liberation technology.” Others are even less sanguine about the liberating potential of social media. Morozov (2011) argues that the growth of the Internet and its accompanying technologies actually allows dictators and repressive regimes to better monitor activists. The role of social media as both a catalog and tool for conflict researchers on the dynamics, causes, and consequences of political conflict remain poorly understood and not well defined. For instance, Twitter may be an excellent tool to study how networks of young, technologically sophisticated individuals are structured.² Yet it would be inappropriate as a means to study conflict behavior in developing countries. This is not to dismiss social media data for conflict researchers outright. Social media and other technologies have the potential to provide researchers with data previously unable to be collected. In this review I hope to provide a template for researchers to understand how social media can be used by researchers to monitor conflicts: by creating better, more disaggregated data and as a tool for gathering new data that was previously too time-consuming to gather, or unable to be collected all together. Finally, I will discuss the platform of social media itself as a possible arena for conflict in the future, with reference to the recent hostilities between Hamas and Israel in 2012, and how theory can guide future empirical research.

The structure of the rest of the chapter is as follows. The second section reviews the history of conflict data, and in particular events data, and provides a template for how scholars can use social media to construct new data sources. It also describes the current uses of social media as a tool for conflict measurement, and in particular crowdsourced applications. The next section discusses the possible uses of social media as a forum for conflict and uses a case study of the 2012 Gaza Conflict as an illustration. The final section provides a possible blueprint for ways in which conflict researchers can integrate social media data into the discipline.

A tool for monitoring conflict

Events data

At least since Lewis F Richardson published his treatise on the fact that battlefield casualties seem to follow a long-tailed distribution (Richardson, 1948), quantitative researchers have sought to systematize the study of conflict. While much research has focused on cataloging wars and deaths (UCDP/PRIO, ACLED, COW), a separate strand of research has focused on cataloging different types of conflict events. “Events data” focuses on who did what to whom, when and where, using a uniform coding procedure (Tilly, 2002). Well-known events datasets such as the Cooperation and Peace Data Bank (COPDAB) (Azar, 1980) and WEIS scales (Goldstein and Rotich, 2008) use news articles and wire services to code conflict-cooperation between two states or group of states (including US–Soviet Union, Israeli–Palestinian etc.). As the software capabilities of machine coding and theories of natural language have advanced, so too has automated text analysis for events coding. One of the most prominent events catalogs has been the Penn State Event Data Project (formerly the KEDS), which uses machine-coded Reuters news feeds to catalog conflict events.³

However, most previous conflict and events data are aggregated annually (COW), monthly (Goldstein and Freeman, 1990; Brandt *et al.*, 2008), and a few daily (Jaeger and Paserman, 2006;

Kavanagh, 2009). Furthermore, most of the events are coded from a limited number of sources such as Lexis-Nexis or Reuters newfeed, that represent a fraction of the news produced and are subject to systematic biases (Schrodt and Yonamine, 2012). The recent adaptation of social media affords scholars a new source of events data from a wider range of sources at an even more disaggregated level. For example, Zeitzoff (2011) used Twitter feeds and live blogs to catalog Hamas and Israel conflict dynamics during the 2008–2009 Gaza War at an hourly level.

Yet, the use of social media for events data by conflict researchers presents unique difficulties. The non-formal prose common in social media sources such as Twitter makes it difficult to interpret sentiment. While strides have been made in using sentiment analysis of Twitter feeds to fairly accurately predict election results in Germany (Tumasjan *et al.*, 2010), events data rely on accurate reporting of the who did what to whom, when and where, not just pure sentiment. Moreover, another problem with the use of social media to catalog conflict events is its lack of editorial oversight that is present in traditional news media outlets. Different viewpoints of Twitter users or social media outlets (such as blogs) can lead to vastly different outcomes and skewed datasets (Gerner *et al.*, 1994). As Davenport (2010) shows in his study of media coverage of the Black Panther Party, different newspapers (with different editorial viewpoints and audience demands) highlighted different activities of the party, leading to different event catalogs. He describes this “Rashomon effect,” after Akira Kurosawa’s film of the same name, in which a story of one crime is told from four very different perspectives, and how this can lead to systematic bias in an event catalog, particularly of the kind of contentious politics that conflict scholars care about the most. This leads to the final concern, that scholars must be cognizant of who is actually posting on Twitter or Facebook: the demographics of social media populations. For instance, many of the key social media interlocutors in the Iranian protests in 2009 (the so-called “Green Revolution”) were in fact based in the US or Europe, and received outside prominence due to their fluency of English, rather than their local knowledge.⁴ This is not to denigrate the role played by social media in the Arab Spring and Iranian revolutions, but casual stories of its impact must be tempered by the knowledge that focusing solely on social media will miss important actors using traditional media. Just as surveying only individuals living in cities is a bad strategy for making inferences about national public opinion in the US, so too is focusing only on social media users when they make up a small fraction of the target population. Furthermore, different social media platforms have varying levels of popularity and user demographics in different countries, making cross-country comparisons on a single platform difficult (Dubai School of Governance, 2012).

A further problem that both academics and private data analysis companies⁵ have grappled with is how to deal with the difficulty in automated text parsing brief, non-standard messages, such as the 140 characters of Twitter (Schrodt *et al.*, 2013). While the analysis of emotions and general sentiment on Twitter and other social media devices is becoming more advanced, the ability to use natural language processing (NLP) to parse shorthand and extract meaningful events remains elusive (González-Ibáñez *et al.*, 2011). In some sense, widespread use of social media for automated events data collection (like the use of Reuters) is beholden to advances in NLP and increasing the user base of social media platforms. While many difficulties lie ahead for harnessing social media for events collection, the advantages – its granular data about users, its temporal disaggregation, and the ability to measure network ties – make it likely that its use by conflict researchers will only grow in importance.

New tools

Conflict researchers have been frustrated by the fact that many of the conflicts that we wish to study and know the most about are the most difficult from which to gather data. Instead of

simply using technology as a faster and larger pool for automated coding of events, several non-governmental organizations (NGOs) and academics have attempted to harness social media sources as a tool for collecting this hard-to-gather data. Much like prediction markets attempt to use prices to reflect aggregate information, researchers and activists have attempted to use the “wisdom of the crowds” to get information about conflict events.⁶ A particular crowdsourcing platform that has been used with some success by NGOs and academics⁷ is Ushahidi. It was created to map reports of violence in the aftermath of post-election violence in Kenya in 2008 (Goldstein and Rotich, 2008). The Ushahidi platform takes SMS and computer messages and uses a geo-location software to map conflict events.⁸ Other users are then able to vote on the verifiability of an individual post, thereby providing crowd verification. The software has been deployed with mixed success in crowdsourcing violence in the 2008–2009 Gaza Conflict,⁹ coordinating aid relief in Haiti,¹⁰ and mapping anti-immigrant violence in South Africa.¹¹ Yet some critics have argued that the maps do not provide much information that is not already available from conventional sources. Moreover, the platforms generally do not have enough users to verify events.¹² The ability of Ushahidi and other crowdsourcing platforms to function properly requires wide enough knowledge and usage of the platform in the target populace – something which may be difficult in conflict areas. Furthermore, incentives for individuals who hope to sway the crowdsourced reports may lead to a skewed distribution of reports.

While crowdsourcing platforms may function well for high-salience conflicts such as the 2008–2009 Gaza Conflict, it may not be appropriate for less-salient conflicts or those where access to the Internet may be spotty. Moreover researchers may want to make statistical inference using representative samples – something that simple crowdsourced applications cannot guarantee. Van der Windt and Humphreys (2012) attempted to rectify these shortcomings by looking at the effects of local aid on violence in the Eastern Congo. They randomly selected individuals within randomly selected villages to be violence reporters. These reporters were given cellular phones and trained on how to report different conflict events via an SMS messaging platform. By comparing data from the SMS platform to news and regional reports, they find that the SMS reports were high quality and picked up events that other sources missed (*ibid.*: 24). The advantages of the van der Windt and Humphreys estimation strategy are numerous. It uses widely available cell phone-based technology with the internal validity of randomized sampling. Given the difficulty in gathering data on violence in the Congo, the success of the SMS reporting platform suggests that it may have broad applicability in other conflict zones.

The Mexican Drug War presents a different conundrum for conflict researchers and the public alike. Since 2006, when former Mexican president Felipe Calderón decided to reduce the influence of drug-trafficking organizations (DTOs), approximately 50,000 Mexicans have been killed directly as a result of the violence (*Los Angeles Times*, 2012). Among the homicide victims have been a number of journalists (Tuckman, 2010). DTOs have systematically intimidated journalists resulting in many homicides and acts of violence going unreported, as reporters fear retribution. Blogs, such as the “Narco Blog” and anonymous Twitter accounts, have attempted to fill this void by reporting and providing photos, sometimes extremely graphic, on violence that is not reported in the mainstream media. Rather than simply providing new data for conflict researchers, “Twitter users have emerged as civic media curators, individuals who aggregate and disseminate information from and to large numbers of people on social media, effectively crowdsourcing local news.”¹³ In this role the ability of individual user to crowdsource local news has provided an important public good – information about violence that would have otherwise gone unreported.

A new space for conflict

Social media has emerged as not only a tool for monitoring conflict, but also as a means by which states and leaders seek to communicate to domestic and international audiences and influence policy. For instance, US politicians have taken to using Twitter for campaigning, credit-claiming, position-taking, and communication with political supporters (Barberá, 2013). A recent report shows that over two-thirds of world leaders are now on Twitter (Burson Marsteller, 2012). While most of the Twitter messages are written by staff and are mainly active around elections, some world leaders do actively communicate with other world leaders in what has been dubbed “Twiplomacy.”

Much of the focus of political scientists on social media lies in its hypothesized potential to transform contentious politics (Tarrow, 2011). Researchers have debated the ability of social media to help solve collective action problems, especially with respect to protests against autocratic leaders (Hassanpour, forthcoming; Aday *et al.* 2010). Bueno de Mesquita and Downs (2005: 82) argue that autocrats use control over “coordination goods” – those that encourage and foment the ability to coordinate opposition (e.g. freedom of the press) – to suppress dissent. Access to the Internet and the ability to use social media to coordinate protests and foment dissent are such coordination goods that autocrats would attempt to try to restrict them. Recent research on censorship policies in China (King *et al.*, 2013) and Egypt (Hassanpour, forthcoming) suggest that autocratic leaders do indeed pay close attention to social media, and try to disrupt it when it is being used to coordinate protests against them.

A key (unanswered) question is what is the causal (marginal) effect of social media on collective action and contentious politics? Does it foment more collective action, or as (Morozov, 2011) argues, does it actually afford autocratic leaders even more tools to disrupt protests or rebellions? Recent research on cell phone coverage and violence provides some interesting insights. Shapiro and Weidmann (2012) show that increased cell phone coverage in Iraq is associated with lower insurgent violence. They suggest that rather than mobilizing collective action among insurgents, it actually allows for uninvolved citizens to telephone anonymous tips to the Multi-National Force in Iraq to combat insurgents. Conversely, Pierskalla and Hollenbach (2013) find that increased cell phone coverage in Africa allows groups to overcome collective action problems and increases the likelihood of violent conflict. These mixed findings suggest that increased technological access (such as social media) does not lead to a straightforward increase or decrease in the probability of collective action. Rather contextual factors, such as state capacity, are likely to moderate the effects of social media and other technologies on costly collective action such as protests or rebellions. Additionally, technological increases are not only present on the rebel/protester side. Autocratic leaders and incumbents have responded to the proliferation of social media with increased technological and surveillance spending of their own (Markoff, 2013).

Social media is not only a tool for mobilizing collective action, but in some cases is the arena of conflict itself. Previous research on terrorism has recognized the interplay between media attention and terrorist tactics (Weimann and Winn, 1994; Bueno de Mesquita and Dickson, 2007). The idea of war and conflict being fought in social media has increasingly become a reality. Since Hamas’s takeover of the Gaza Strip in 2006, a low-level tit-for-tat exchange has emerged between Israel and Hamas – Hamas and other militant groups fire rockets into Southern Israel and Israel counters with air strikes. The 2008–2009 Gaza Conflict first saw Israel and Hamas begin to use social media tools to both communicate their cause, and also intimidate and threaten the other side (Zeitzoff, 2011). Both Hamas and Israel significantly escalated their use of social media in the 2012 Gaza Conflict. Their extensive use of Twitter was one of the lead headlines of the conflict, with Israel and Hamas actively reaching out to supporters via Twitter

and threatening the other side (also via Twitter). The case study below illuminates how both Hamas and Israel used social media and what its implications may be for future conflicts.

The Second Gaza Conflict: a case study

The 2012 Gaza Conflict – also known by its Israel Defense Forces name Operation Pillar of Cloud, or the Second Gaza Conflict – was marked by an increase in hostilities between Israel and Hamas in the Gaza Strip. The conflict started on November 14, 2012 when the Israel Defense Forces (IDF) used an airstrike to kill Hamas military commander Ahmed Jabari in retaliation for an increase in rocket fire from the Gaza Strip.¹⁴ What was unusual was not that Israel engaged in a policy of targeted assassination (Zussman and Zussman, 2006), but rather the way in which the strike was publicized as unique. The IDF publicized the strike and announced the beginning of its military campaign via its Twitter feed (@IDFSpokesperson). They also tweeted a provocative picture which announced the “elimination” of Ahmed Jabari.

Hamas’s Twitter Feed (@AlQassamBrigades) replied with a tweet almost immediately, “Our blessed hands will reach your leaders and soldiers wherever they are (You Opened Hell Gates on Yourselves).”¹⁵ Both Hamas and the IDF continued to tweet over 300 times throughout the eight and a half days of the conflict.¹⁶ Many of their tweets focused on emphasizing their own victimization by the other side’s military actions, and cheerleading their own military success. Hamas sought to emphasize the civilian toll of the Israeli airstrikes and broadcast graphic images of civilian victims.¹⁷ The IDF Twitter feed provided audio, visual, and video evidence that emphasized the threats posed by rockets from Gaza to Israeli citizens. Furthermore Israel and Hamas made extensive use of the hashtags, specific words or phrases prefaced with the pound (#) symbol to categorize tweets, to garner support for their actions and allow other Twitter users to signal their support. Hamas used the hashtag #GazaUnderAttack and Israel used the hashtag #IsraelUnderFire within their tweets.¹⁸

Much was made of the social media aspect of the conflict, dubbing it the “Twitter War” (Cohen, 2012). It is true that this was the first time a state had declared the start of hostilities via Twitter and both Hamas and Israel actively engaged each other via Twitter. However, this obscures the fact that Hamas and Israel’s Twitter feed were in English, strongly suggesting that they were explicitly targeting an international audience. Furthermore, while many of the IDF and Hamas tweets did fall into the cheerleading/victimization form of propaganda, many of the tweets were straight news sans propaganda. A few of these more news-like tweets were picked up in the more mainstream media’s live blogs that also covered the conflict.¹⁹ Thus Israel and Hamas’s Twitter campaigns functioned to not only rally supporters via hashtags and propaganda, but also to influence mainstream media reporting by providing information not traditionally afforded to reporters. Reporters from mainstream outlets then passed along these stories to their audiences, thereby shaping the coverage in favor of Hamas or Israel. Traditional signaling models and audience casts stories of strategic communication in the shadow of war (Fearon, 1994) are not adequate to explain the nuances and dynamics of how states use social media. In some senses, states themselves are unsure of how to use social media, so as more leaders and states adopt social media and formulate strategies through trial and error, the role of social media as a strategic communication device will become clearer.

The way forward

This chapter has avoided discussing the networked aspect of social media. Yet researchers must recognize that social media users are embedded within networks, and that simple models of

causal effects will not accurately explain the networked effects. Again American politics researchers have taken the lead on this subject. Bond *et al.* (2012) conducted a massive experiment via Facebook during the 2010 US midterm elections. Most Facebook users (98 percent of users over the age of 18)²⁰ were randomly assigned users to have the ability to put an “I voted” icon in their profile with pictures of their friends who also voted. A further 1 percent of the users only saw the icon and not the pictures of the friends who voted. The remaining 1 percent of users saw nothing. By comparing these three groups and matching names to actual voting roles, they were able to measure the effect of social pressure on voting. Not only were they able to measure the direct effect of seeing a friend who voted on an individual’s decision to vote (direct effect), but also since they had data on friendship networks, they were able to estimate the effect on friends of friends, and friends of friends of friends and so forth (indirect effects). They found a small, but significant positive effect of seeing that someone’s friend voted on individual decisions to vote, as well as indirect effects. This implies that social pressure (broadcasting vote choice) can have positive externalities beyond the immediate friends.

Conflict scholars and researchers seem to sense that networks will become increasingly important as a tool for future research.²¹ A few studies have attempted to understand the networked effect of media connectivity on repression and dissent behavior. For instance, Hassanpour (forthcoming) shows that the decision in 2011 by former President of Egypt Hosni Mubarak to shut off Internet and mobile communication did not disrupt revolutionary activity. Rather he finds that it actually fomented protests, as protesters tapped into alternative/traditional social networks. King *et al.* (2013) examine mobilization from a different perspective: trying to figure out which type of blog posts are censored by China. Using automated text analysis of over three million blog posts on approximately 1,300 popular Chinese forums, they show that Chinese government censors allows users to post vitriolic criticism of the government, but squash any attempts to call for popular protests by censoring them.

All three of these papers (Bond *et al.*, 2012; Hassanpour, forthcoming; King *et al.*, 2013) provide compelling research designs for conflict scholars. It is interesting because they also signal a shift within our discipline. Conflict scholars are so used to complaining about “there not being enough good data” to test their theories. However the increasing use of social media and the large amount of data this affords researchers presents the opposite problem. There is more data available than there are good theories on what to do with it. This is especially acute for scholars wishing to make causal claims about the effect of social media on conflict or protest behavior. The truth is that our theories of war and bargaining (Fearon, 1995), protests and rebellion (Gurr, 2011), or riots (Horowitz, 2001) have not yet incorporated the networked effects that might be driving the social media phenomenon.

In conclusion, three observations and suggestions for conflict researchers will be made. First, scholars must always be cognizant of the selection process of who chooses to tweet, use Facebook, or make a blog post. By first modeling the selection process, we can start to harness social media to collect high-quality events data catalogs. In addition, it can potentially be used to see which users or group of users may better cover certain conflict events. For instance Palestinian news sources may have a better incentive or access to information to cover Israeli aggression against Palestinians. Conversely, Israeli news sources may have a better incentive or access to information for covering Palestinian aggression (Davenport, 2010). Additionally, the arrival of high-quality events data from automated text analysis of social media will most likely be due to advances in computer science and increasing the user base of social media. This has yet to occur, but most likely will.

Second, the most promising and best current use for social media may be as a tool to crowdsource or collect hard-to-gather data on conflict (van der Windt and Humphreys, 2012). Using SMS platforms in concert with best practices in survey sampling can be implemented now, and will give researchers access to accurate data from places and on topics previously

beyond our reach. Finally, a lot of theorizing needs to happen. We do not currently have fully formed theories for how states may use social media and other platforms to wage conflict such as Israel and Hamas did in the recent Gaza Conflict.²² From a micro-level perspective networked theories promise to help explain why individuals rebel or protest, but remain underspecified. Using theory to guide our empirical investigation of the use of social media for conflict, rebellion, and risky collective action will result in better use of the new social media data, and a better understanding of conflict.

Notes

- 1 For example ideal-point estimation scores for US House of Representatives and Senators via *D-W Nominate*: <http://voteview.com/dwnomin.htm>.
- 2 See this demographic breakdown of social media users <http://venturebeat.com/2012/08/22/social-media-demographics-stats-2012/>.
- 3 See <http://eventdata.psu.edu/> for an explanation of how the Textual Analysis By Augmented Replacement Instructions (TABARI) software codes events.
- 4 See www.theatlantic.com/technology/archive/2010/06/evaluating-irans-twitter-revolution/58337/.
- 5 Such as Social Flow www.socialflow.com and Morningside Analytics www.morningside-analytics.com.
- 6 See Golub and Jackson (2010) for a theoretical underpinning of wisdom of the crowds.
- 7 See Zeitzoff (2011).
- 8 A whole field of Crisis Mapping has grown around similar platforms. "Crisis Mappers leverage mobile and web-based applications, participatory maps and crowdsourced event data, aerial and satellite imagery, geospatial platforms, advanced visualization, live simulation, and computational and statistical models to power effective early warning for rapid response to complex humanitarian emergencies." See <http://crisismappers.net/>.
- 9 <http://blog.ushahidi.com/2009/01/02/al-jazeera-labs-is-testing-ushahidi/>
- 10 See <http://blog.ushahidi.com/2012/01/12/haiti-and-the-power-of-crowdsourcing/>.
- 11 See <http://whiteafrican.com/2008/05/23/mapping-xenophobic-attacks-in-south-africa/>.
- 12 See www.ssireview.org/articles/entry/open_source_for_humanitarian_action.
- 13 <http://blogs.law.harvard.edu/andresmh/2013/01/civic-media-curation-in-urban-warfare/>, synthesizing the research published in Monroy-Hernandez *et al.*, 2013.
- 14 See the Huffington Post Live Blog of the Conflict at www.huffingtonpost.com/rss/liveblog/liveblog-1213.xml.
- 15 See the actual text of the of the tweet at Hamas's Twitter feed <https://twitter.com/AlqassamBrigade/status/268791630583193600>.
- 16 The Israel Ministry of Foreign Affairs also had an active Twitter feed (@IsraelMFA).
- 17 See www.bbc.co.uk/news/technology-20339546.
- 18 The Hamas hashtag was more popular and had a greater number of mentions (Ashkenaz, 2013).
- 19 See Al-Jazeera <http://blogs.aljazeera.com/liveblog/topic/gaza-136>; Haaretz www.haaretz.com/news/diplomacy-defense/live-blog-day-3-of-israel-gaza-conflict-20121-1.478193; and Huffington Post www.huffingtonpost.com/rss/liveblog/liveblog-1213.xml.
- 20 This amounts to approximately 61 million users who logged in on election day 2010.
- 21 See the July 2012 "Special Issue: Networked Perspectives of International Relations" in *Conflict Management and Peace Science*.
- 22 I have not discussed another use of social media and Internet-based platforms: cyberwarfare. For instance see the hostilities and accusations of Israel and Iran over viruses and cyberattacks in relation to Iran's nuclear program www.npr.org/2012/08/24/159959300/massive-cyberattack-act-1-of-israeli-strike-on-iran.

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