

**Online Appendix for:
Big Data, Social Media, and Protest:
Foundations for a Research Agenda**

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Abstract

Following the Arab Spring, a debate broke out among both academics and pundits as to how important social media had been in bringing about what may have been the least anticipated political development of the 21st century. Critics of the importance of social media pointed in particular to two factors: (a) the proportion of social media messages that were transmitted in English; and (b) the proportion of Arab Spring related social media posts that originated from outside the Arab world. In our chapter, we will test whether two important subsequent unanticipated protests - Turkey's 2013 Gezi Park protests and Ukraine's 2013-14 Euromaidan protest - also are susceptible to such criticisms. To do so, we draw on millions of tweets from both protests - including millions of geolocated tweets from Turkey - to test hypotheses related to the use of Twitter by protest participants and, more generally, in-country supporters of protest movements, effectively refuting the idea that emerged after the Arab Spring that Twitter use during protests only reflects international attention to an event.

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1 Online Appendix

Figure A1: Turkish Facebook Activity Over Time

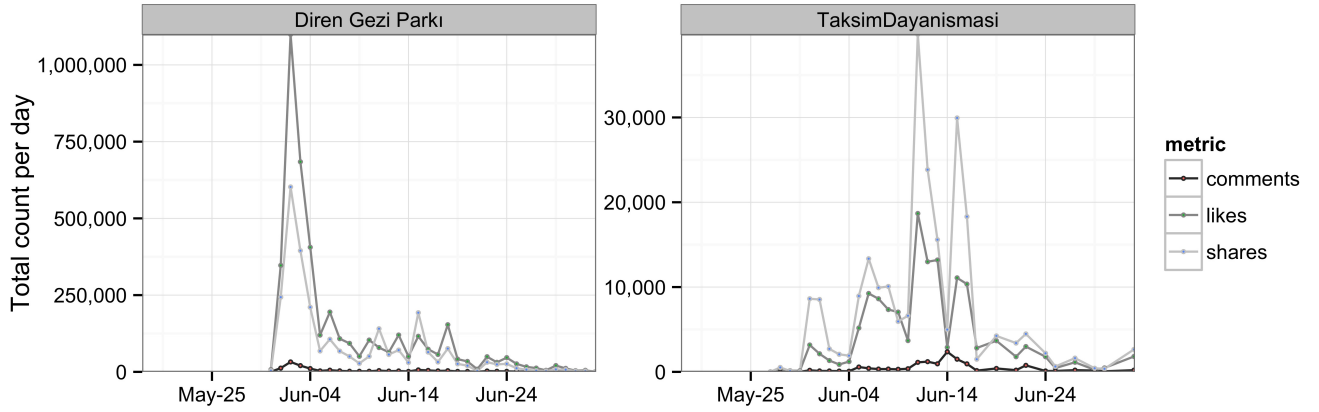


Figure A2: Ukrainian Facebook Activity Over Time

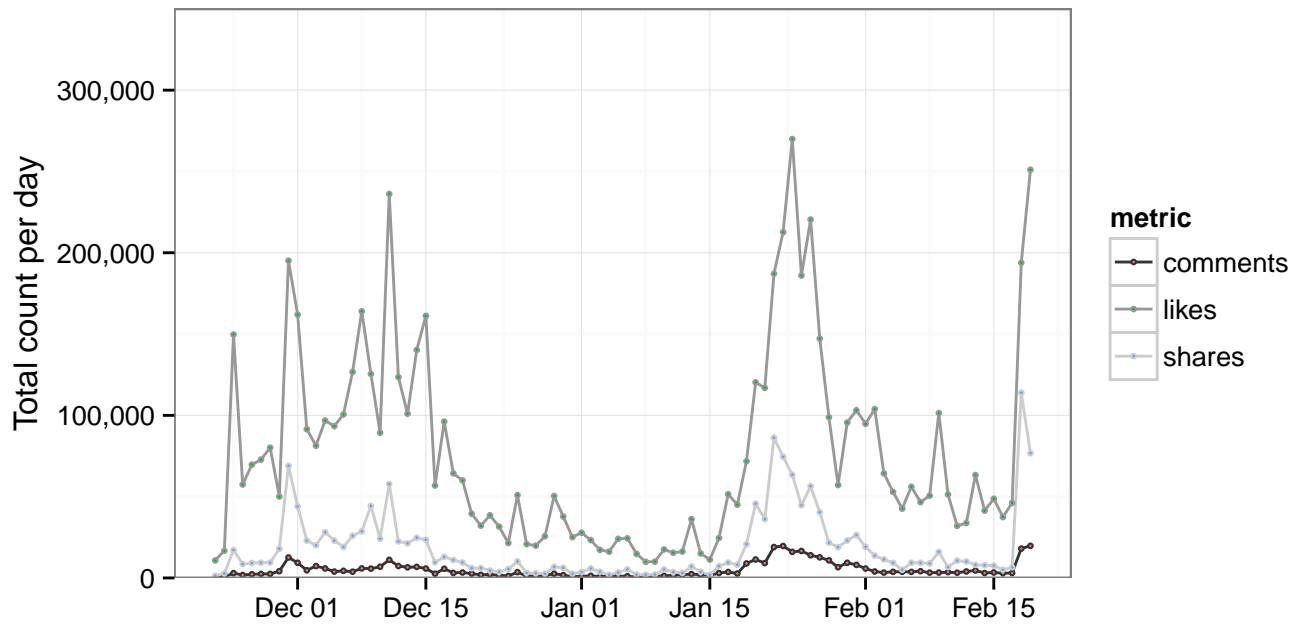


Figure A3: User Creation Dates - Turkey

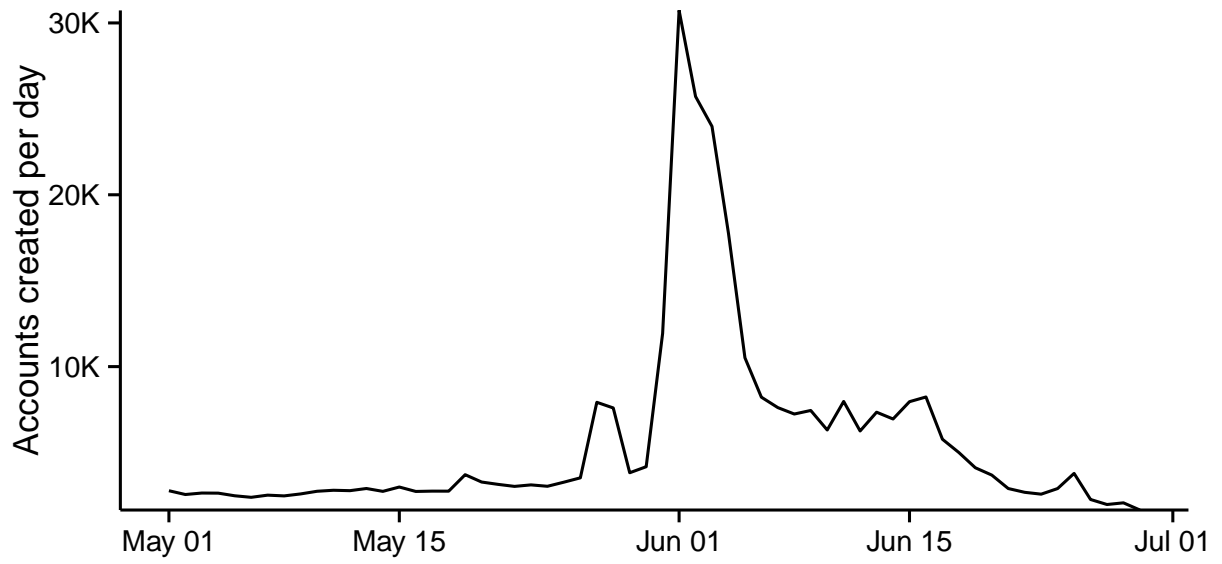


Figure A4: User Creation Dates - Ukraine

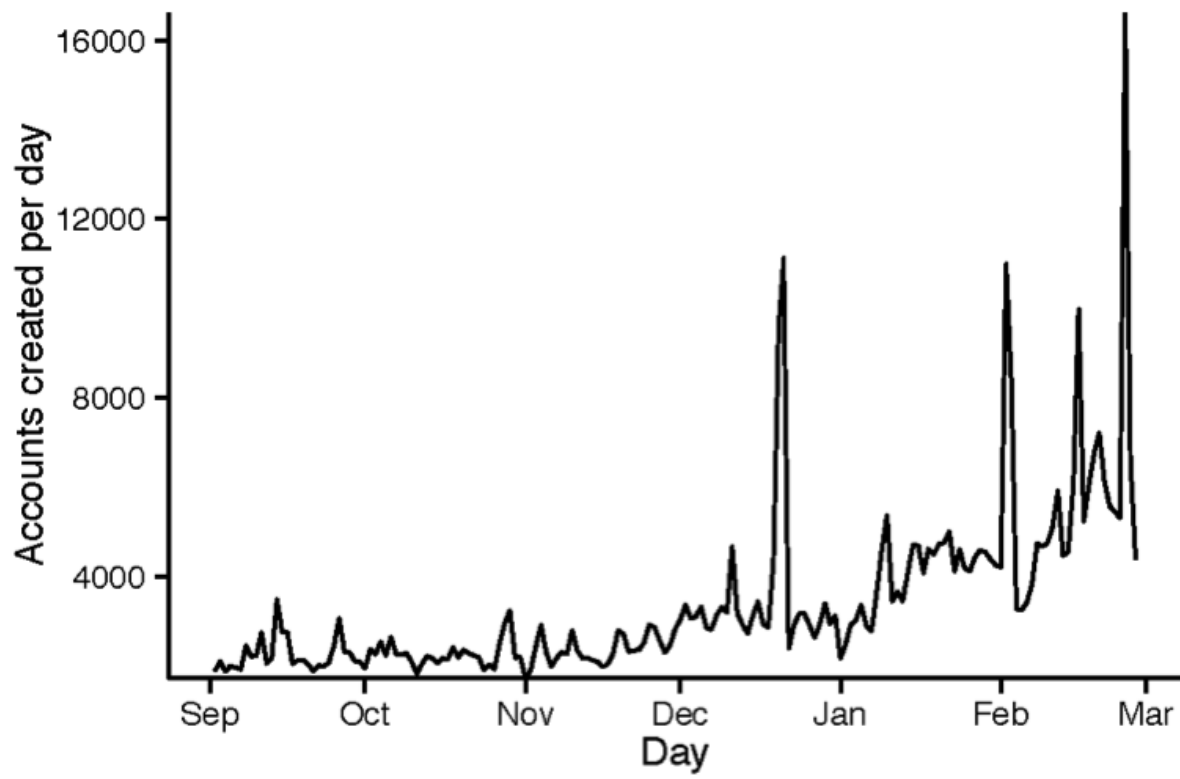


Figure A5:

Turkey - Tweets per day by tweet language

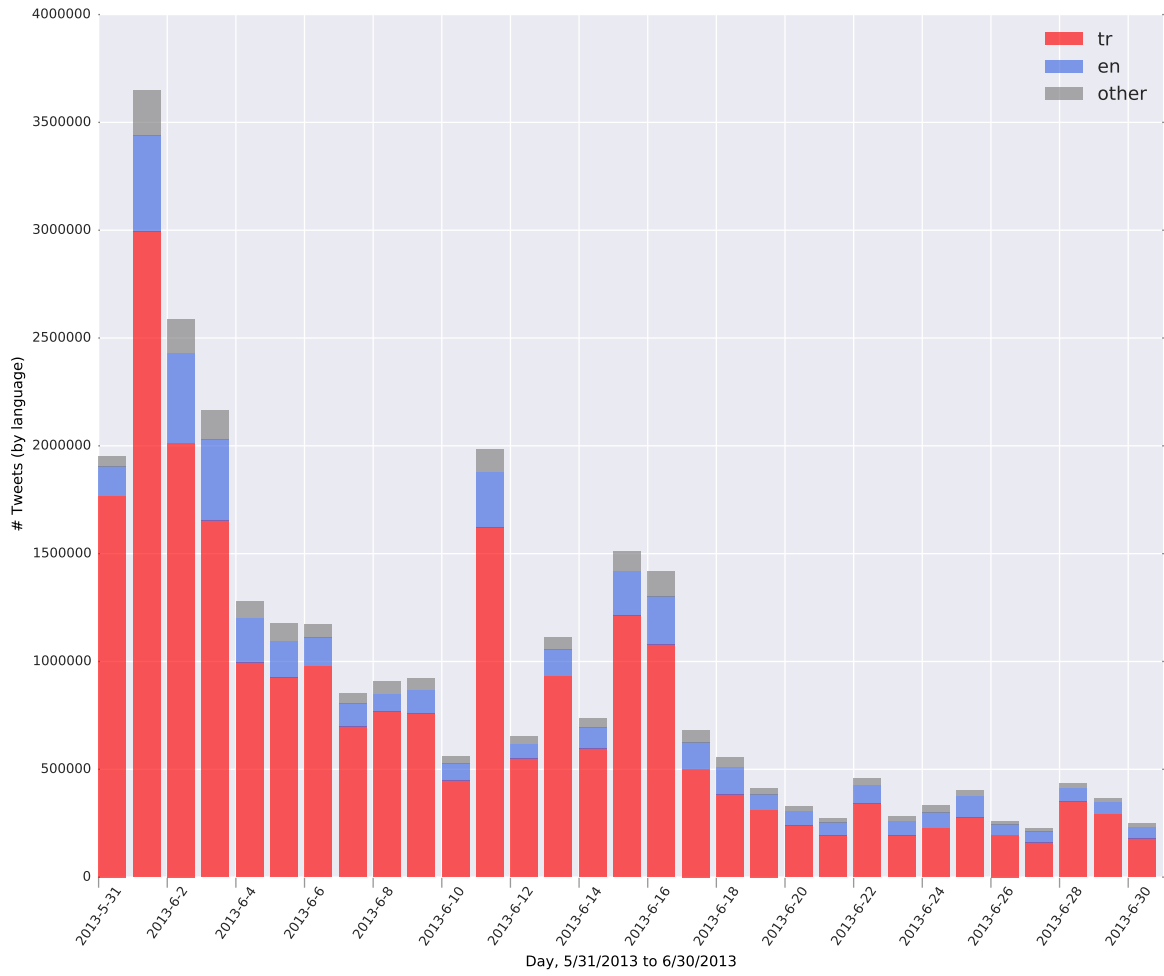


Figure A6:

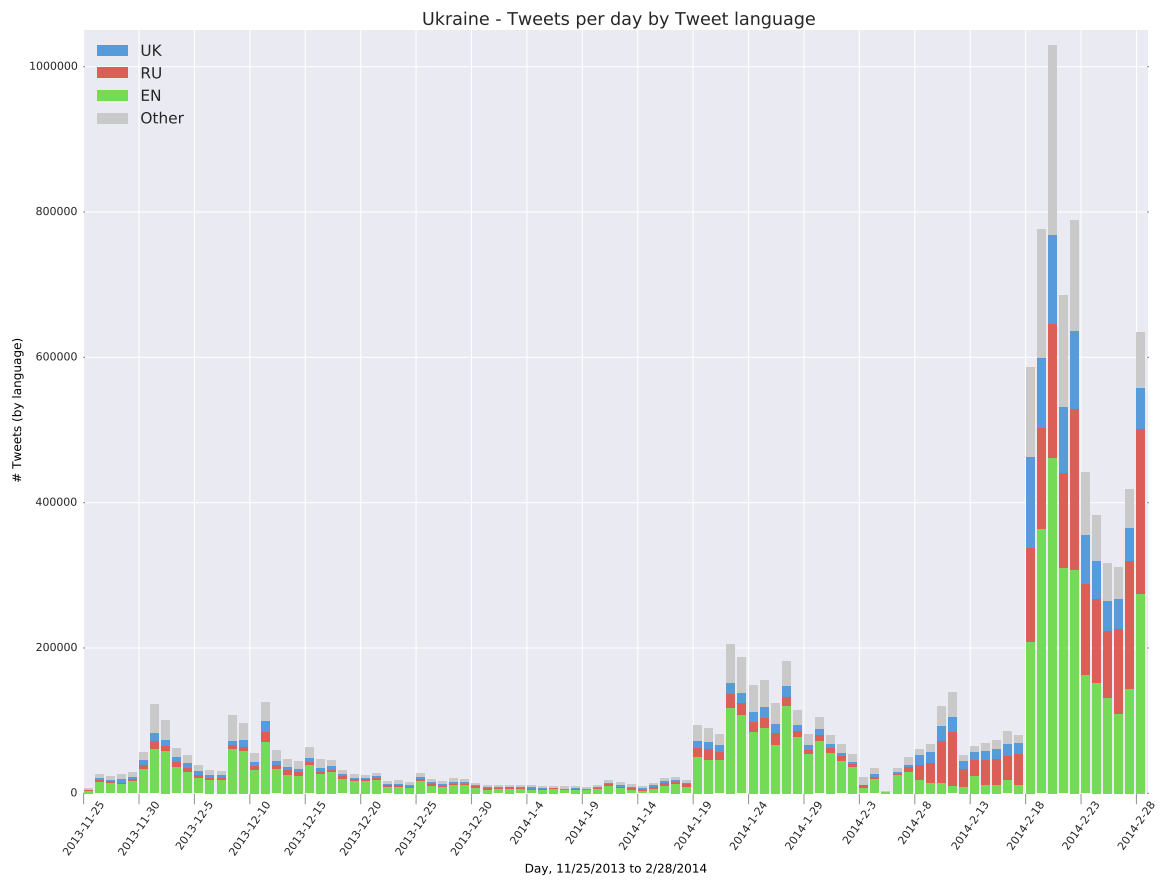


Table A1: Turkey Key Words and Hashtags

Date Added	Key Word	Date Added	Key Word
9/10/2013 0:00:00	ahmetatakan	5/15/2014 17:26:34	#UlusalYasGenelGrev
9/10/2013 0:00:00	polissiddetidursun	5/15/2014 17:26:24	#DualarımızSomaİcin
6/2/2013 0:00:00	direnizmir	5/15/2014 17:26:11	#kazadegilcinayet
6/2/2013 0:00:00	direnankara	5/15/2014 17:25:58	#İsKazasıDeğilCinayet
6/1/2013 0:00:00	TribünlerTekYürek	5/15/2014 17:25:31	#SomaMineAccident
6/1/2013 0:00:00	gezibizimistanbulbizim	5/15/2014 17:25:18	#AğıtYakmayaDegilHesapSormaya
6/1/2013 0:00:00	turkiyebahari	5/15/2014 17:25:03	#GünKömürKarası
6/1/2013 0:00:00	SesVerTürkiyeBuÜlkeSahipsizDeğil	5/15/2014 17:24:43	#soma
6/1/2013 0:00:00	provokasyonaGELMİYORUZ	None	direnizmir
6/1/2013 0:00:00	TürkiyemDireniyor	None	direnankara
6/1/2013 0:00:00	turkishmediacensorship	None	ahmetatakan
6/1/2013 0:00:00	direngaziparki	None	polissiddetidursun
6/1/2013 0:00:00	prayforturkey	None	internetimedokunma
6/1/2013 0:00:00	erdogan	None	internetime
5/31/2013 0:00:00	geziparkı	None	dokunma
5/31/2013 0:00:00	gezi park	None	internetcensorshipinturkey
5/31/2013 0:00:00	occupygez	None	BerkinElvanÖlümsüzdür
5/31/2013 0:00:00	occupygezi	None	ŞehitVatanUğrunaCanVerendir
5/31/2013 0:00:00	gezipark	None	HoşçakalBerkinim
5/31/2013 0:00:00	istanbul	None	ÖlümsüzBerkinElvan KatilErdoğan
5/31/2013 0:00:00	turkey	None	TwitterisbannedinTurkey
5/31/2013 0:00:00	taksim None	Twitterisblockedinturkey	
5/31/2013 0:00:00	direngaziparki		
5/31/2013 0:00:00	geziparki		
5/31/2013 0:00:00	direngaziparkı		
5/31/2013 0:00:00	akp		
5/31/2013 0:00:00	gazi park		
5/31/2013 0:00:00	gezi		
5/31/2013 0:00:00	direnis		
5/31/2013 0:00:00	diren		
5/31/2013 0:00:00	direnmek		
5/31/2013 0:00:00	dayan		
5/31/2013 0:00:00	dayanis		
5/31/2013 0:00:00	dayanisma		
5/31/2013 0:00:00	buguntelevizyonlarikapat		

Table A2: Ukraine Key Words and Hashtags

Date Added	Key Word	Date Added	Key Word
9/1/2014 0:00:00	#NATOforUkraine	1/28/2014 0:00:00	титущке
8/28/2014 0:00:00	#RussiaInvadedUkraine	1/28/2014 0:00:00	титущкам
8/28/2014 0:00:00	#UkraineUnderAttack	1/28/2014 0:00:00	титущек
7/17/2014 21:15:20	#stoprussianterrorism	1/28/2014 0:00:00	титущкой
7/17/2014 21:15:04	#StopRussianTerrorism	1/28/2014 0:00:00	титущками
7/17/2014 20:28:20	#flightmh17	1/28/2014 0:00:00	титущках
7/17/2014 20:28:12	#FlightMH17	12/15/2013 0:00:00	громайдан
7/17/2014 20:09:01	#prayformh17	None	kyiv
7/17/2014 20:08:38	#mh17	None	kiev
7/17/2014 20:01:52	#PrayforMH17	None	ukraine
7/17/2014 20:01:29	#MH17	None	евромайдан
5/20/2014 20:39:37	#ГОЛОСУЮ	None	eugomadan
5/17/2014 4:24:20	#выборы	None	Eugomaidan
5/17/2014 4:24:03	#vybory2014	None	Eugomaydan
5/17/2014 4:23:49	#выборы2014	None	Евромайдан
5/17/2014 4:23:32	#Виборипрезидента	None	Евромайдан
5/16/2014 18:53:53	#UkraineVotes	None	евромайдан
5/16/2014 18:53:06	#UkraineElections	None	евромайдан
5/15/2014 19:03:16	#UkraineElections	None	Євромайдан
5/15/2014 19:02:53	#Українаголосує	None	ЄвроМайдан
5/9/2014 17:46:14	#колорад	None	Майдан
5/4/2014 18:20:41	#вибори14	None	Європа
5/4/2014 18:20:33	#вибори	None	Batkivshchyna
5/4/2014 18:20:24	#порушення	None	тимошенко
5/4/2014 18:20:18	#elect_ua14	None	яценюк
5/3/2014 3:23:16	одесса	None	кличко
5/3/2014 3:23:02	#одесса	None	УДАР
5/3/2014 3:20:34	Одеса	None	кабмин
5/3/2014 3:20:20	Odessa	None	беркут
5/3/2014 3:19:41	#Odessa	None	янукович
5/1/2014 17:16:52	#единаяукраина	None	азаров
5/1/2014 17:16:41	#ЕдинаяУкраина	None	Майдан
5/1/2014 17:16:33	#UnitedForUkraine	None	революция
5/1/2014 17:16:11	#unitedukraine	None	революція
4/30/2014 22:09:43	золотой запас	None	StopEU
3/3/2014 0:00:00	#SaveUkraine	None	СтопЕС
2/25/2014 0:00:00	мобилизация	None	Міліція
2/25/2014 0:00:00	Севастополь	None	Беркут
2/25/2014 0:00:00	крым	None	eugomaydan
2/25/2014 0:00:00	ялта	None	evgomaidan
2/25/2014 0:00:00	керчь	None	maidan
2/25/2014 0:00:00	симферополь	None	Berkut
2/25/2014 0:00:00	антифашизм	None	Буркут
2/25/2014 0:00:00	Евпатория	None	UkraineProtests
2/25/2014 0:00:00	Кличко	None	prayforukraine
1/30/2014 0:00:00	DigitalMaidan	None	Таможенный
1/28/2014 0:00:00	titushki	None	йолка
1/28/2014 0:00:00	титущки	None	ёлка
1/28/2014 0:00:00	титущка	None	стопмайдан
1/28/2014 0:00:00	титущки	None	антимайдан