

# Online Appendix:

## Ideological Segregation Online and Offline

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### 1 Estimates of Statistical Precision

In table 2 we present standard errors for our main estimates. For estimates that come from MRI, the GSS or the CNES, we compute standard errors through a nonparametric bootstrap over samples of respondents. For estimates that come from comScore aggregate data, that is not an option. Instead we perform a parametric bootstrap in which we model the share conservative of each website as an independent binomial proportion with sample size determined by the size of the relevant comScore panel. (In the model appendix to the paper, we show that standard errors from a model that relaxes the independence assumption are on the same order of magnitude as those we present in table 2.)

### 2 Alternative Segregation Measures

We present estimates for two alternative measures of ideological segregation: the dissimilarity index (Cutler et al. 1999), and the symmetric Atkinson index (Frankel and Volij 2008). We also show how our main results change when we do not implement the small-sample correction discussed in the paper.

The dissimilarity index is defined as:

$$S_m^D = \frac{1}{2} \sum_{j \in J_m} \left| \frac{cons_j}{cons_m} - \frac{lib_j}{lib_m} \right|.$$

It can be interpreted as the share of conservative (or liberal) visits that would need to be redistributed across media for the share conservative to be uniform across outlets.

The symmetric Atkinson index is defined as:

$$S_m^A = 1 - \sum_{j \in J_m} \left( \frac{lib_j}{lib_m} \right)^{\frac{1}{2}} \left( \frac{cons_j}{cons_m} \right)^{\frac{1}{2}}.$$

Frankel and Volij (2008) shows that the ordering defined by this index is the unique measure of segregation satisfying a set of intuitive axioms, including scale invariance.

Table 1 presents the results. Because social networks do not partition the set of individuals, we cannot compute these indices for the acquaintance groups defined in the GSS and the CNES. The first column repeats our main results from the paper. The second column shows how the results change when we do not implement a finite-sample correction. Segregation increases as expected, especially for zipcodes and local newspapers where we have very small samples for each “outlet.” This column is the most relevant benchmark to compare to the alternative indices, since they are not corrected for finite-sample bias. The final two columns show that the qualitative pattern for the dissimilarity index and the symmetric Atkinson index is similar to that for the unadjusted isolation index. The only notable change is that cable news looks more segregated than the Internet on the dissimilarity measure.

### **3 Additional Robustness Checks and Results**

Table 3 presents results for MRI and GSS in which we weight all respondents equally instead of using recommended sample weights. (Unweighted estimates are not available for comScore data. The CNES is self-weighting.)

Table 4 presents results for the GSS in which we exclude respondents who answer that they know “10 or more” strong conservatives or strong liberals in the given social category. (In the main results we topcode these responses arbitrarily at 12.) We also present results for the CNES in which we exclude respondents who provide the maximum number of political discussants.

Table 5 presents results for the GSS and CNES in which we treat each respondent’s acquaintances /discussants as sample individuals. In the main results we only treat respondents as sample individuals for the purposes of calculating exposure and isolation.

Table 6 presents results comparing GSS and CNES estimates. The GSS estimates are the “People You Trust” estimates from the main paper. The CNES estimates are for all named discussants, rather than only political discussants as presented in the main paper.

Table 7 presents results comparing our main estimates to estimates that make alternative assumptions about the ideology of those who describe themselves as moderate or “middle of the road.” The first column presents our main estimates in which we treat such respondents’ ideology as missing and assume that the share conservative among moderates who visit a given outlet is equal to the share conservative among visitors to the same site who declare an ideology. The second column presents estimates in which we assume that moderates on all sites are “drawn at random” from the medium as a whole. That is, we assume that, for all outlets, the share conservative among moderate visitors is equal to the share conservative in the medium as a whole. The third column presents estimates in which we assume that moderates on all sites are half conservative and half liberal.

Table 8 presents results comparing our main estimates to alternative calculations that use Reardon’s (2009) ordinal variation ratio index, which is a generalization of the binary isolation index to ordinal data. In comScore and MRI data, we apply Reardon’s (2009) index to data on the shares of all five ideological categories (very conservative, somewhat conservative, middle of the road, somewhat liberal, very liberal). In CNES data, we construct five ideological categories from the underlying ideological index.

Table 9 lists the sites in our main sample—those sites for which the comScore aggregate data include both site size and site share conservative. Table 10 lists the sites in our expanded set of 391 sites included in the comScore microdata panel.

Figure 1 shows the relationship between the share of a site’s visitors who are conservative and the share who are politically active.

## References

- Cutler, David M., Edward L. Glaeser and Jacob L. Vigdor. 1999. The rise and decline of the American ghetto. *The Journal of Political Economy* 107, no. 3, 455-506.
- Frankel, David and Oscar Volij. 2008. Scale invariant measures of segregation. *Working Paper*.
- Reardon, Sean. 2009. Measures of ordinal segregation. *Research on Economic Inequality* no. 17, pp. 129-155.

**Table 1:** Alternative Segregation Measures

	Isolation Index	Isolation Index (Unadjusted)	Dissimilarity Index	Atkinson Index
Internet	.075	.079	.184	.048
<b>Offline Media</b>				
Broadcast News	.018	.019	.093	.010
Cable	.033	.033	.190	.021
Magazines	.047	.050	.127	.026
Local Newspapers	.048	.133	.310	.109
National Newspapers	.104	.109	.309	.056
<b>Face-to-Face Interactions</b>				
County	.059	.129	.297	.098
Zipcode	.094	.416	.564	.379

Notes: Internet data are from comScore. County, zipcode, and offline media data are from MRI. See paper for details on construction of isolation index.

**Table 2:** Standard Errors for Main Results

	Isolation Index	Standard Error
Internet	.075	.003
Offline Media		
Broadcast News	.018	.004
Cable	.033	.003
Magazines	.047	.007
Local Newspapers	.048	.012
National Newspapers	.104	.022
Face-to-Face Interactions		
County	.059	.007
Zipcode	.094	.011
Voluntary Associations	.145	.032
Work	.168	.036
Neighborhood	.187	.056
Family	.243	.044
People You Trust	.303	.033
Political Discussants	.394	.053

Notes: Internet data are from comScore. County, zipcode, and offline media data are from MRI. Voluntary associations, work, neighborhood, family, and “people you trust” data are from the GSS. Political discussants data are from the CNES. For the Internet, the standard error is calculated using a parametric bootstrap that assumes ideology is a binomial proportion and is independently distributed across sites. For all other measures, standard errors are calculated using a nonparametric bootstrap over respondents. Bootstraps use 100 replications.

**Table 3: MRI and GSS: Equal-weighted results**

	Conservative Exposure of		
	Conservatives	Liberals	Isolation Index
<b>Offline Media</b>			
Broadcast News	.654	.629	.024
Cable	.699	.656	.043
Magazines	.572	.508	.063
Local Newspapers	.686	.636	.050
National Newspapers	.596	.483	.112
<b>Face-to-Face Interactions</b>			
County	.668	.605	.063
Zipcode	.627	.541	.087
Voluntary Associations	.633	.462	.171
Work	.623	.447	.176
Neighborhood	.635	.473	.161
Family	.696	.479	.216
People You Trust	.661	.373	.288

Notes: County, zipcode, and offline media data are from MRI. Voluntary associations, work, neighborhood, family, and “people you trust” data are from the GSS. Estimates weight all respondents equally. (The estimates in the paper use recommended weights.)

**Table 4: GSS and CNES: Excluding Topcoded Responses**

	Conservative Exposure of		
	Conservatives	Liberals	Isolation Index
<b>Face-to-Face Interactions</b>			
Voluntary Associations	.593	.507	.086
Work	.573	.386	.187
Neighborhood	.612	.416	.196
Family	.645	.406	.239
People You Trust	.682	.381	.302
Political Discussants	.783	.425	.359

Notes: Voluntary associations, work, neighborhood, family, and “people you trust” data are from the GSS. Political discussants data are from the CNES. Estimates for GSS data exclude respondents who say that they know “more than 10” strong conservatives or liberals in the given social category. (The estimates in the paper treat these responses as topcoded and equivalent to “12.”) Estimates for CNES data exclude respondents who list 5 political discussants.

**Table 5: GSS and CNES: Treating Acquaintances as Part of the Sample**

	Conservative Exposure of		
	Conservatives	Liberals	Isolation Index
Voluntary Associations			
Excluding Respondent	.584	.488	.095
Including Respondent	.585	.478	.107
Work			
Excluding Respondent	.566	.475	.091
Including Respondent	.571	.474	.097
Neighborhood			
Excluding Respondent	.631	.443	.189
Including Respondent	.628	.447	.181
Family			
Excluding Respondent	.675	.432	.244
Including Respondent	.672	.425	.247
People You Trust			
Excluding Respondent	.627	.453	.174
Including Respondent	.640	.443	.197
Political Discussants			
Excluding Respondent	.820	.333	.486
Including Respondent	.766	.369	.398

Notes: Data are from the GSS except political discussants which are from the CNES. Calculations treat each respondent's acquaintances / discussants as exposed to one another, either including or excluding the respondent from the group of acquaintances / discussants. (The estimates in the paper treat each respondent as exposed to her acquaintances / discussants and ignore exposure of acquaintances / discussants to the respondent or to one another.)

**Table 6: Comparing GSS and CNES**

		Conservative Exposure of		
		Conservatives	Liberals	Isolation Index
GSS	People You Trust	.675	.372	.303
CNES	All Named Discussants	.790	.443	.347

Notes: Data are from the GSS and CNES. GSS estimates reproduce main estimates from paper for "People You Trust." CNES estimates are for all named discussants. (The estimates in the paper are for political discussants only.)

**Table 7:** Alternate Assumptions about Ideology of Moderates

Assumption about moderates	Missing data (Baseline)	Drawn at random (Alternative)	50-50 (Alternative)
Internet	.075	.047	.048
Offline Media			
Broadcast News	.018	.008	.006
Cable	.033	.014	.014
Magazines	.047	.025	.023
Local Newspapers	.048	.024	.026
National Newspapers	.104	.059	.055
Face-to-Face Interactions			
County	.059	.029	.029
Zipcode	.094	.070	.069
Political Discussants	.394	.347	.345

Notes: Internet data are from comScore. County, zipcode, and offline media data are from MRI. Political discussants data are from the CNES.

**Table 8:** Ordinal Segregation Measure

Isolation Index	Binary (Baseline)	Ordinal (Alternative)
Internet	.075	.066
Offline Media		
Broadcast News	.018	.006
Cable	.033	.015
Magazines	.047	.025
Local Newspapers	.048	.028
National Newspapers	.104	.055
Face-to-Face Interactions		
County	.059	.028
Zipcode	.094	.060
Political Discussants	.394	.230

Notes: Internet data are from comScore. County, zipcode, and offline media data are from MRI. Political discussants data are from the CNES. Ordinal index is the ordinal variation ratio index (Reardon 2009).

**Table 9: Websites in Main Sample**

ABC News	chicagotribune.com	newsbusters.org	tampabay.com
about.com news & issues	chron.com	newsmax.com	tbo.com
aclj.org	cnbc.com	newsobserver.com	technorati.com
aclu.org	cnn.com	newsrunner.com	The Mail Online
alternet.org	cnsnews.com	newsvine.com	theatlantic.com
AOL News	csmonitor.com	newsweek.com	theglobeandmail.com
ap.org	ctv.ca	newyorker.com	thehill.com
australian broadcasting corp.	dailykos.com	npr.org	thenation.com
azcentral.com	democraticunderground.com	nydailynews.com	theolympian.com
barackobama.com	drudgereport.com	nypost.com	thestate.com
BBC News	economist.com	nytimes.com	thinkprogress.org
billoreilly.com	foxnews.com	pbs.org	time.com
blackamericaweb.com	freerepublic.com	philly.com	today.com
blackvoices.com	ft.com	politico.com	topix.com
blogcritics.org	gallup.com	politicsdaily.com	topnews.in
blogtalkradio.com	glennbeck.com	politifact.com	townhall.com
boston.com	gop.com	postchronicle.com	treehugger.com
bostonherald.com	gopusa.com	propeller.com	upi.com
breitbart.com	heraldtribune.com	realclearpolitics.com	usatoday.com
businessweek.com	heritage.org	reddit.com	usnews.com
bvblackspin.com	hotair.com	rense.com	villagevoice.com
cagle.com	huffingtonpost.com	reuters.com	voanews.com
canada.com	humanevents.com	rollingstone.com	washingtonpost.com
Canoe	latimes.com	rushlimbaugh.com	washingtontimes.com
Capitol Advantage	metafilter.com	salon.com	whitehouse.gov
capitolconnect.com	michellemalkin.com	sfgate.com	wn.com
cartoonstock.com	moveon.org	Sina News	wnd.com
cbc.ca	msnbc.com	Sky News	wsj.com
cbn.org	myfoxtla.com	slate.com	Yahoo! News
cbsnews.com	nationalreview.com	stuff.co.nz	

Note: See data section in paper for the definition of the main sample.

**Table 10: Websites in Expanded (Microdata) Sample**

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24ahead.com	dominantoday.com	mensnewsdaily.com	regnum.ru
365gay.com	dr1.com	metafilter.com	rense.com
911truth.org	drudge.com	metro.us	rep-am.com
abs-cbnnews.com	drudgereport.com	michaelmoore.com	reuters.com
abugidainfo.com	dsc.org	michellemalkin.com	rockthevote.com
aclj.org	dvidshub.net	mikehuckabee.com	rollingstone.com
aclu.org	economist.com	militarycity.com	rt.com
actblue.com	einnews.com	militarytimes.com	rushlimbaugh.com
adbusters.org	El Mercurio	mises.org	salon.com
adl.org	emilyslist.org	mk.ru	semana.com
advocate.com	enn.com	modernghana.com	seneweb.com
afp.com	ethiopianreview.com	moonbattery.com	serbiancafe.com
airamerica.com	expert.ru	motherjones.com	sfgate.com
airforcetimes.com	factcheck.org	moveon.org	sindhoday.net
alertnet.org	fb.org	msnbc.com	slate.com
alipac.us	federaltimes.com	myfidnet.com	smacpolitics.com
allaboutpopularissues.org	finalcall.com	myfoxboston.com	sourcewatch.org
alternet.org	firechief.com	myfoxla.com	spectator.org
amadershomoy.com	firedoglake.com	myjoyonline.com	spiegel.de
americablog.com	firehouse.com	nagr.org	splcenter.org
americanprogress.org	firstamendmentcenter.org	nationalcenter.org	standeyo.com
americanthinker.com	fivethirtyeight.com	nationaljournal.com	stateline.org
aminata.com	focus.de	nationalreview.com	stoptheaclu.com
amnesty.org	foreignpolicy.com	nationmultimedia.com	stormfront.org
ananova.com	foreignpolicyblogs.com	nepa.org	stripes.com
anncoulter.com	foxnews.com	ndtv.com	svobodanews.ru

antiwar.com	frc.org	newint.org	swamppolitics.com
ap.org	freedomworks.org	news24.com	sweetness-light.com
apakistannews.com	freerepublic.com	newsbusters.org	tabnak.ir
arktimes.com	freshnews.in	newsdaily.com	talkingpointsmemo.com
armyrecognition.com	frontpagemag.com	newsflavor.com	talkleft.com
azcentral.com	ft.com	newsguide.us	tampabay.com
b4tea.com	gallup.com	newsinferno.com	tbo.com
barackobama.com	gamepolitics.com	newslink.org	technorati.com
bartcop.com	gazette.net	newsmax.com	theatlantic.com
bestsyndication.com	glennbeck.com	newsobserver.com	thecrimson.com
billingsgazette.net	globalpolicy.org	newsru.ua	thedonovan.com
billoreilly.com	globalvoicesonline.org	newstatesman.com	theglobeandmail.com
blackamericaweb.com	gmanews.tv	newsvine.com	thegreenpapers.com
blackfive.net	gop.com	newsweek.com	thehill.com
blackstarnews.com	gopusa.com	newswire.ca	thejakartapost.com
blackvoices.com	govspot.com	newswithviews.com	theloop21.com
blic.rs	govtrack.us	newszoom.com	themoderatevoice.com
blogcritics.org	greatandhra.com	newt.org	thenation.com
bloggernews.net	gzt.ru	newyorker.com	thenational.ae
blogtalkradio.com	hannity.com	nhatky.in	thenewamerican.com
bobmcdonnell.com	harpers.org	novoteka.ru	theolympian.com
boortz.com	havenworks.com	now.org	thestate.com
boston.com	heartland.org	nowtoronto.com	thinkprogress.org
bostonherald.com	hechos.tv	npr.org	thirdworldtraveler.com
breitbart.com	heraldtribune.com	nraila.org	time.com
brookings.edu	heritage.org	nrlc.org	tnr.com
businessweek.com	hicktownpress.com	nydailynews.com	today.com
buzzfed.com	homepagedaily.com	nypost.com	topix.com

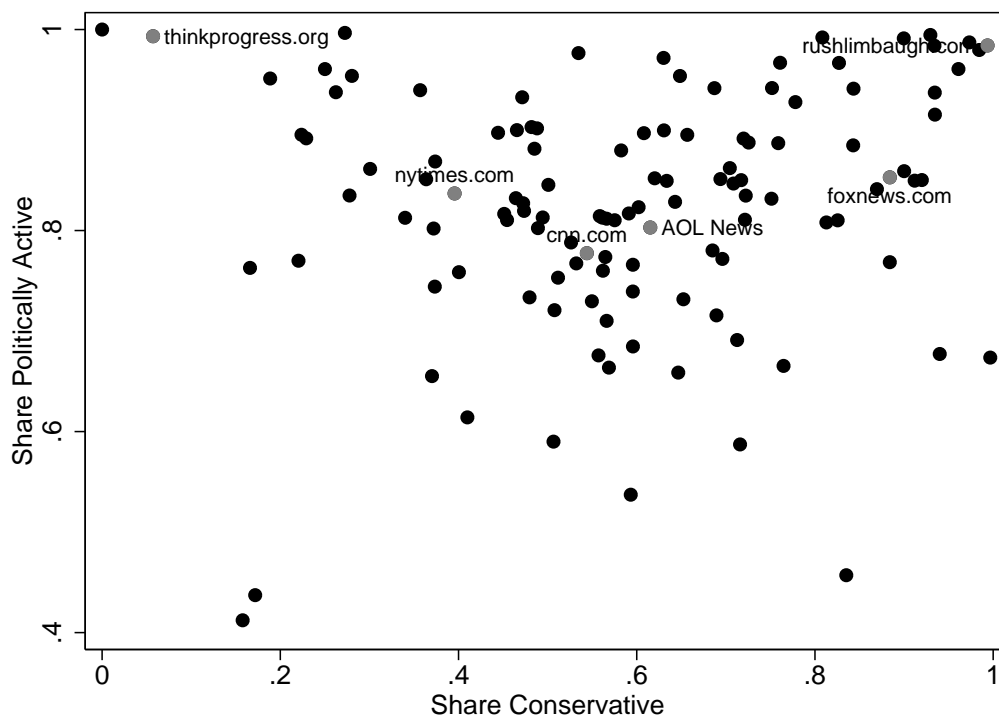
buzzflash.com	hotair.com	nytimes.com	topnews.in
cagle.com	hrc.org	oliverwillis.com	townhall.com
californiachronicle.com	huanqiu.com	on.cc	treehugger.com
campaignforliberty.com	huckpac.com	oneindia.in	tretoday.net
canada.com	huffingtonpost.com	onenewspage.com	truthdig.com
canadafreepress.com	humanevents.com	oneworld.net	truthin2008.org
capitalnews9.com	ifeng.com	opednews.com	truthout.org
Capitol Advantage	Impremedia Network	openleft.com	turkishweekly.net
capitolconnect.com	in.com	opensecrets.org	ucsusa.org
cartoonstock.com	independent.ie	opr.ru	upi.com
casafree.com	indianexpress.com	outsidethebeltway.com	urban.org
catholicvote.com	indymedia.ie	oyez.org	usatoday.com
cato.org	indymedia.org	pajamasmedia.com	usnews.com
cbc.ca	inews24.com	patriotpost.us	utne.com
cbsnews.com	infoniac.com	pbs.org	vdare.com
channel5belize.com	informationclearinghouse.info	Periodista Digital	villagevoice.com
chicagotribune.com	informationliberation.com	philly.com	vnexpress.net
chinasmack.com	inopressa.ru	plosone.org	voanews.com
chron.com	inosmi.ru	policyalmanac.org	volokh.com
cnbc.com	insidesomalia.org	politico.com	vosizneias.com
cnn.com	ipsnews.net	politicsunlocked.com	votesmart.org
cnsnews.com	ivarta.com	politifact.com	waltainfo.com
columbian.com	janes.com	postchronicle.com	washingtonindependent.com
commentarymagazine.com	japantoday.com	powerlineblog.com	washingtonmonthly.com
commondreams.org	jewishworldreview.com	poynter.org	washingtonpost.com
counterpunch.org	jihadwatch.org	precisenews.us	washingtontimes.com
credoaction.com	joecourtney.com	presstv.ir	wfcourier.com
crooksandliars.com	johnmccain.com	prisonplanet.com	webcommentary.com

csmonitor.com	judicialwatch.org	prisonplanet.tv	weeklystandard.com
cspan.org	kdhnews.com	progress.org	whatreallyhappened.com
ctv.ca	krqe.com	progressillinois.com	whdh.com
cubaencuentro.com	latercera.com	propeller.com	whitehouse.gov
cyberpresse.ca sites	latimes.com	propublica.org	wikinews.org
dailykos.com	lcv.org	prospect.org	wikio.fr
deepika.com	lenouvelliste.com	qkport.com	wiseto.com
deepikaglobal.com	lewrockwell.com	que.es	wizbangblog.com
delina.org	libcom.org	radio-canada.ca	wn.com
democracynow.org	lifenews.com	rawstory.com	wnd.com
democraticunderground.com	littlegreenfootballs.com	rcfp.org	wonkette.com
democrats.com	lucianne.com	realclearpolitics.com	wopular.com
democrats.org	macedoniaonline.eu	reason.com	worldmag.com
dispatchpolitics.com	marinecorpstimes.com	reddit.com	wsj.com
dissidentvoice.org	masshightech.com	redicecreations.com	wsws.org
dnevniavaz.ba	mediamatters.org	redstate.com	

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Note: Table lists the sites available in the comScore microdata panel and used as the extended sample in the section on “other robustness checks.”

**Figure 1:** Share Politically Active vs. Share Conservative



Notes: Data are from comScore. Share conservative is the estimated share of daily visitors who are conservative, and share politically active is the estimated share of daily visitors who are politically active. Data on Political Activity are from comScore Plan Metrix. To compute the share politically active we compute the average number of daily visitors who are politically active and the average number of daily visitors who are not politically active over the 12 months of 2009. We compute the share politically active as the ratio of the average number of politically active visitors to the sum of the average number of politically active and not politically active visitors. We define website visitors as politically active if they report that are registered to vote, voted in the most recent mid-term or presidential election, subscribe to a political publication, visit news websites for political information, visit political websites, or have done any of the following in the past three years: contacted an elected official, volunteered to help a candidate or political party, gone to a political rally/march/demonstration, donated money to a political candidate, or donated money to a special interest group.