

# Supplementary Material for “To Dog-Whistle or To Bark? Elite Communication Strategies when Invoking Conspiracy Theories” in *Government and Opposition*

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## Appendix A: Populist Engagement: Online versus Offline Actors

We visualize the extent to which populist elites engage in offline versus online discussions about the Smoleńsk plane crash. To do so, we read through the local newspaper articles included in the Wyborcza memorial dataset and coded each type of actor present at these events including specific political party leaders, civil society actors who organized these events, and religious leaders who blessed the monuments.

From this data, we create a network graph of elite attendance at the 474 in-person events commemorating those who died in the crash between 2010 and 2019. Figure 3 shows the relationships between organizers and participants of offline commemoration events. Attendees who are members of the ruling PiS party are in blue, with other named attendees in red. The nodes are sized according to their degree, or the number of connections an individual holds within the network. Some of the largest nodes include the former Ministers of Defense Antoni Macierewicz and Mariusz Błaszczak, PiS party chair Jarosław Kaczyński, and President Andrzej Duda.

The network map also helps us to understand the grassroots nature of these events. While many gatherings are coordinated with the input or participation of PiS elites, we note a number of smaller networks wherein gatherings are coordinated without national party oversight. The data indicate PiS party elites and religious officials play a central role in commemorating the crash offline.

To assess what types of actors participate in the online discourse about the Smoleńsk plane crash, we utilize the data collected by Blackington and Cayton, 2024 between August 2021 to July 2022. We describe the data collection protocol for these data further in Appendix B. Figure 4 visualizes Twitter users who conversed about the Smoleńsk plane crash in any way or participated in conversations about the crash by replying to Tweets. We plot the replies networks between users to show what types of users converse about the plane crash on Twitter. Figure 4 shows that while many non-PiS officials discuss the crash

Figure 3: Offline Elite Network Map

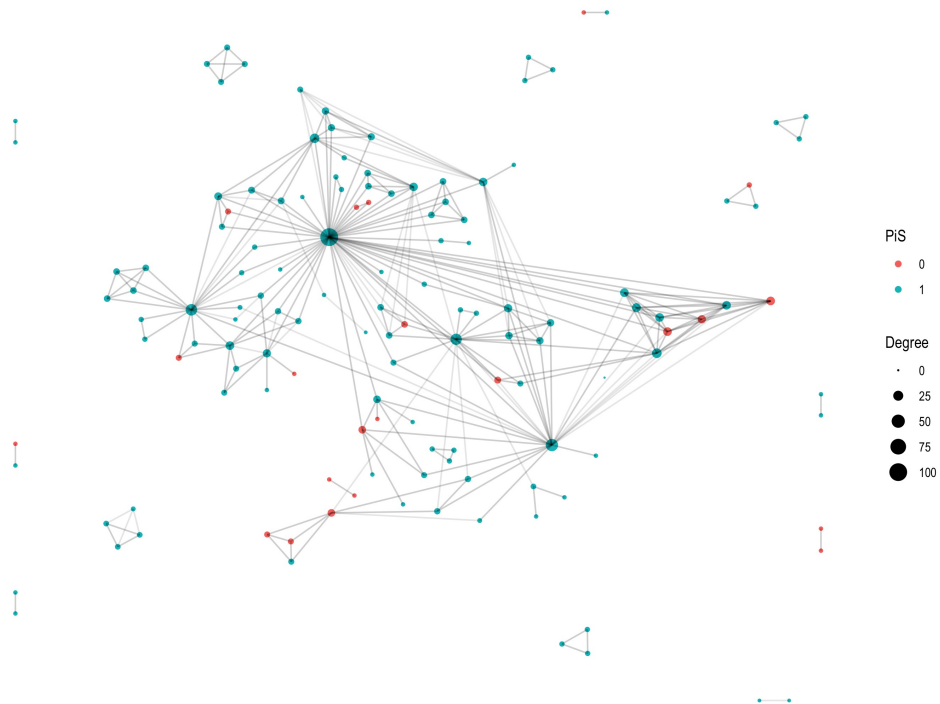
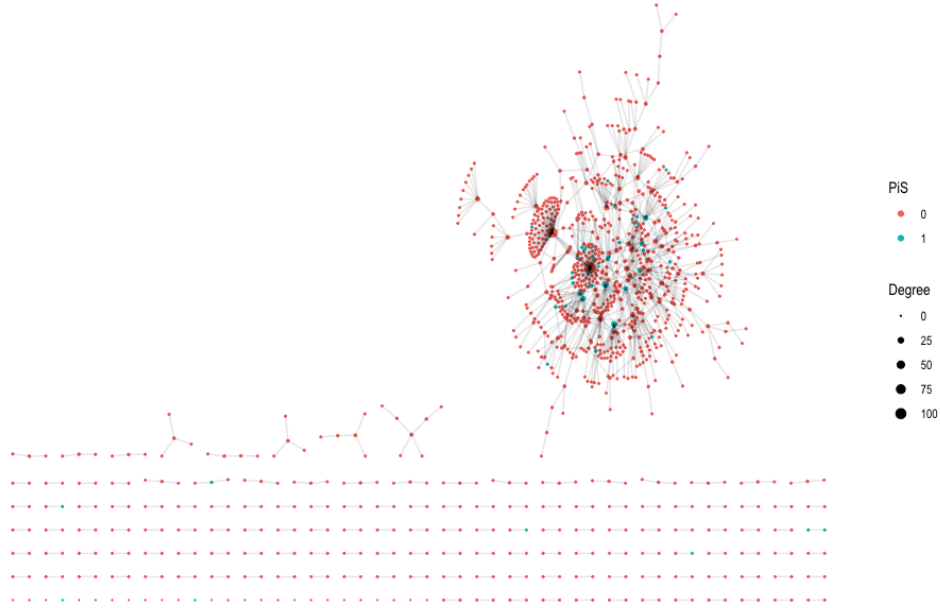


Figure 4: Online Network Map



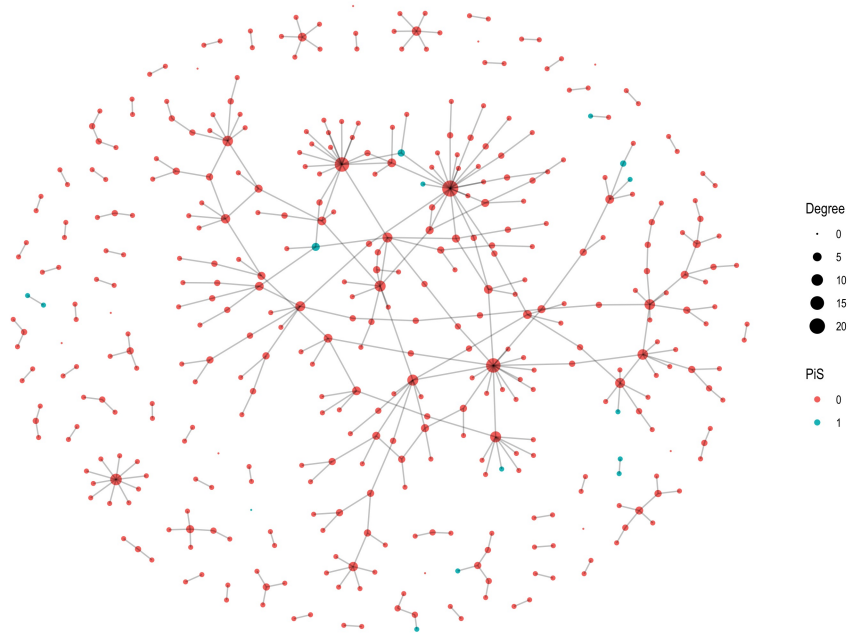
on Twitter and are central to these discussion networks, PiS politicians do play an active role in discussing the crash on social media.

As visualized by the degree of those PiS nodes, PiS officials are central to both offline and online networks. In both types of offline and online networks, PiS politicians figure prominently. Yet, PiS officials feature more prominently in the offline network than the online network. This reiterates our assertion that online audiences are more diverse than the party loyalist offline audiences. This discussion is further extended in Appendix E.

Still, we cannot discern from these network data how PiS officials discuss the plane crash. Thus, we also analyze the content of online and offline discussions of the plane crash to assess under what conditions officials dog-whistle or explicitly endorse conspiracies.

We next plot the network structure of those PiS-tweets that engage with the CT directly versus implicitly by dog-whistling. In Figure 5, each node is a person who tweeted CTs when discussing the Smolensk plane crash in our tweet corpus. The links represent cases where the individuals replied to each other's CT tweets. By contrast, in Figure 6, each

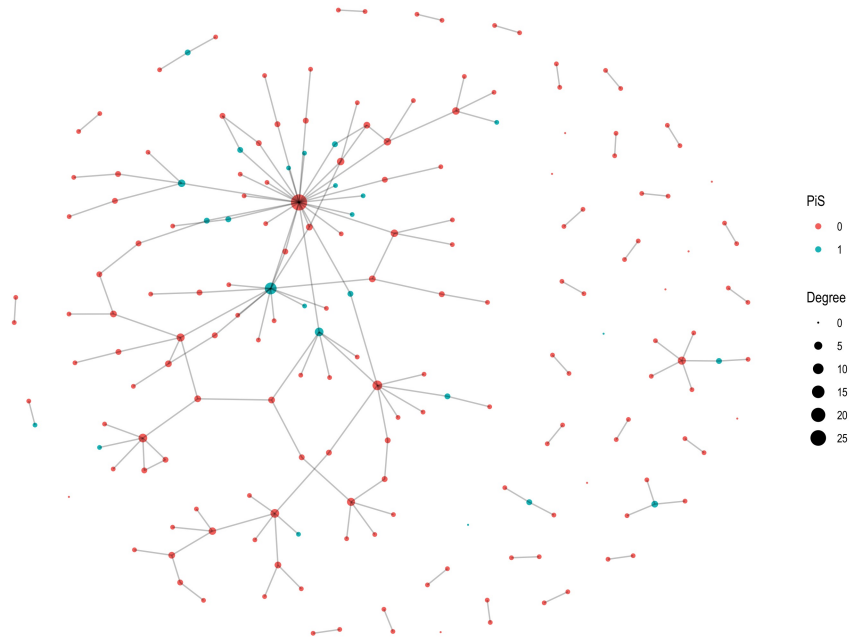
Figure 5: Networks of CT Twitter Rhetoric



node is a person who dog-whistled about a CT surrounding the Smolensk plane crash, with connections representing users replying to others. In both Figures 5 and 6, red nodes are non-PiS officials whereas blue nodes are PiS officials.

We can see that PiS officials are more frequently nodes in the network of tweets that invoke dog-whistles, but are less frequently nodes in the network of tweets that explicitly invoke CTs. What this means is that PiS officials are more actively engaging in rhetoric and networks that dog-whistle rather than rhetoric or networks that invoke CTs explicitly online. In other words, they are often dog-whistling online. Not only do PiS officials appear more frequently in the dogwhistle figure (Figure 6), but they are also more central in these networks. PiS users are better connected, have higher degree, and are more central in the network that dog-whistles when compared to the network that explicitly invoke CTs online.

Figure 6: Networks of Dog-Whistling Twitter Rhetoric



## Appendix B: Full Year Tweet Analysis

We limit our main analysis to those tweets from the official PiS party account from April 10 annually, as these correspond directly to our speech data. To assess whether our results hold for the monthly commemorations, we turn to another source of data, which scrapes tweets from PiS officials—rather than just the party account—over a one-year period.

### Data for Analysis

To complete this test, we utilize the data collected by Blackington and Cayton, 2024, which scrapes tweets based on a list of hashtags related to the Smoleńsk crash from August 2021 to July 2022 (see Table 4). Table 4 provides a list of translated hashtags. For more information, see Appendix A of Blackington and Cayton, 2024.

We subset this data to those tweets from PiS officials. This differs from our specification

in the main text, which focused on tweets from just the official PiS party account. The data from Blackington and Cayton, 2024 is different in scope from our main data. Their data offer insight into the tweets of individual PiS officials beyond the party as a whole, but only for a one-year period. Given our main theoretical expectations focus on the nature of one’s audience, we would expect that most individual politicians have a smaller reach on Twitter than an official party account. A local or regional PiS official would not have the same media following or general public following of an official party account. Thus, these PiS officials may be more likely to engage in conspiratorial rhetoric on their personal pages when compared to the PiS party’s account. Furthermore, in our main text, we focused on the party’s Twitter account, which is likely more constrained in messaging than most PiS politicians’ accounts. Having a diversity of actors speaking likely comes with a greater diversity in discourse on the Smoleńsk plane crash.

Table 4: Hashtags Streamed

<b>Polish Hashtag</b>	<b>English Translation</b>
#Smoleńsk,	Smolensk
#SmoleńskSabotage	Smolensk Sabotage
#SmoleńskPamiętamy	We Remember Smolensk
#KatastrofaSmoleńska	Smolensk Catastrophe
#10kwietnia	April 10th
#miesięcznica	Monthly commemoration
#10042010Fakty	April 10, 2010 Facts
#podkomisjasmoleńska	Smolensk Subcommittee
#Pamiętamy	We Remember
#Smolensk2010	Smolensk 2010
#LechKaczyński	(President) Lech Kaczyński
#LechaKaczyńskiego	Lech Kaczyński (declination)
#96ofiar	96 victims

## Results

Figures 8 and 9 show our results. We find that the results largely mirror those from the April 10 restricted sample.

References commemorating President Lech Kaczyński appear in over 20% of the corpora. Amongst the top words in each topic, none explicitly reference the crash. It is only when looking amongst those words used exclusively within each topic that we can discern the differences. There, we find that it is only in Topic 4—the least frequent of the five topics identified in our model—that CT references are explicitly endorsed by PiS politicians.

We then look at the overlap of vocabulary amongst PiS elites, comparing explicit discussions of the CT (Topic 4) and memorializations of the crash (Topic 5). As visible in Figure 9, common words are references to the crash location, the late President Kaczyński, and the “disaster.” These high-frequency references, which prominently overlap between the two groups, are dog-whistles to the CT. In turn, explicit references, such as calling the crash an “assassination” (zamach), are rarely used and only used within Topic 4. Finally, we observe that while the poles of dog-whistling and CT rhetoric are more polarized, the bulk of the discourse falls within the center, dog-whistling zone and appears less often. It appears that online elite rhetoric toward the crash is both murkier and less frequent. Indeed, when comparing Figure 7 and 9, CT endorsements and dog whistles alike are both more frequent online than offline.

Further, whereas the PiS party leader explicitly invokes CTs offline, we find that PiS officials are more likely to dog-whistle and less likely to explicitly invoke CTs online. Blackington and Cayton, 2024 identified all PiS and non-PiS users in the tweet corpus as well as every instance in which a CT or dog-whistle was invoked by these users. Figure 10 shows the percentage of tweets for ordinary users and for PiS users that either invoke a CT directly or dog-whistle the CT. We find that in sheer percentage terms, PiS users invoke dog-whistles at about twice the frequency of non-PiS users. By contrast, PiS users explicitly endorse CTs on Twitter at a lower rate than non-PiS users. This suggests further support for our theory



Figure 7: Overlap of Memorialization and CT References in Speeches

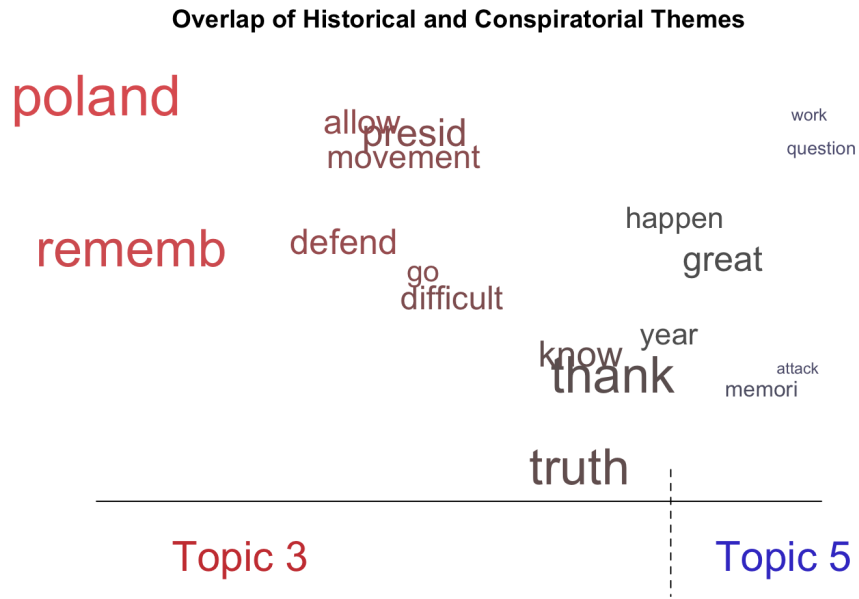


Figure 8: Proportion of Tweets Including Topic

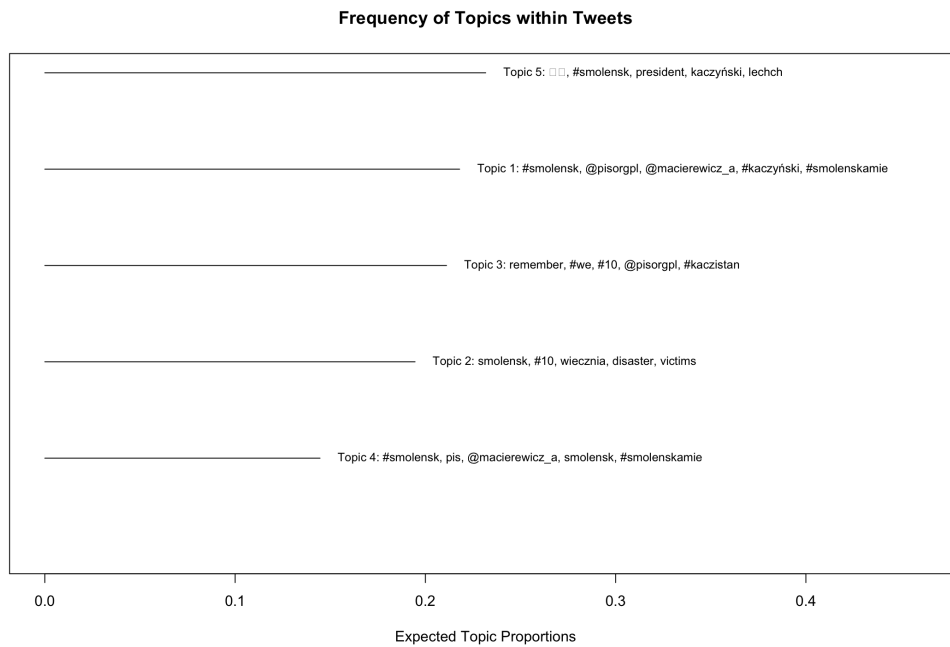
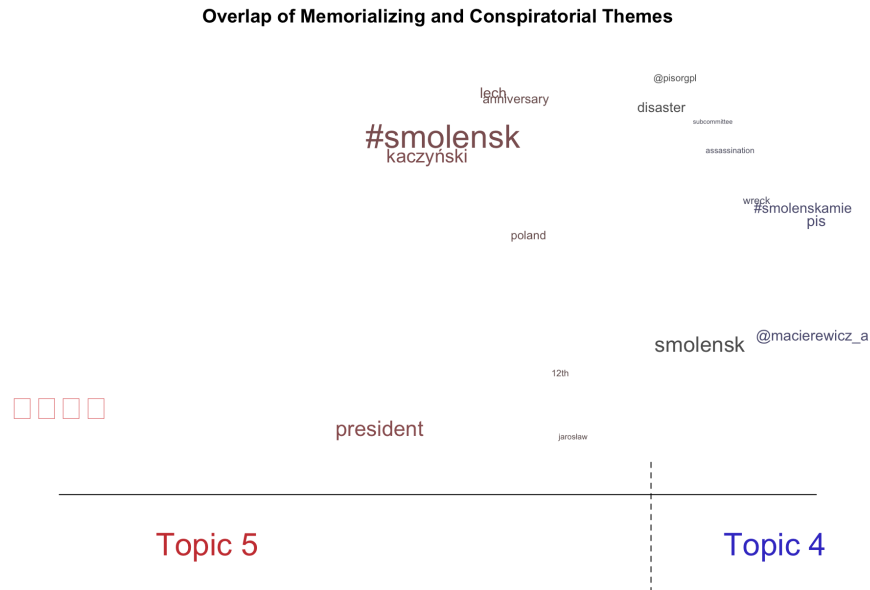


Figure 9: Overlap of Memorialization and CT References in Tweets



that PiS politicians dog-whistle more online, but not necessarily offline.<sup>12</sup>

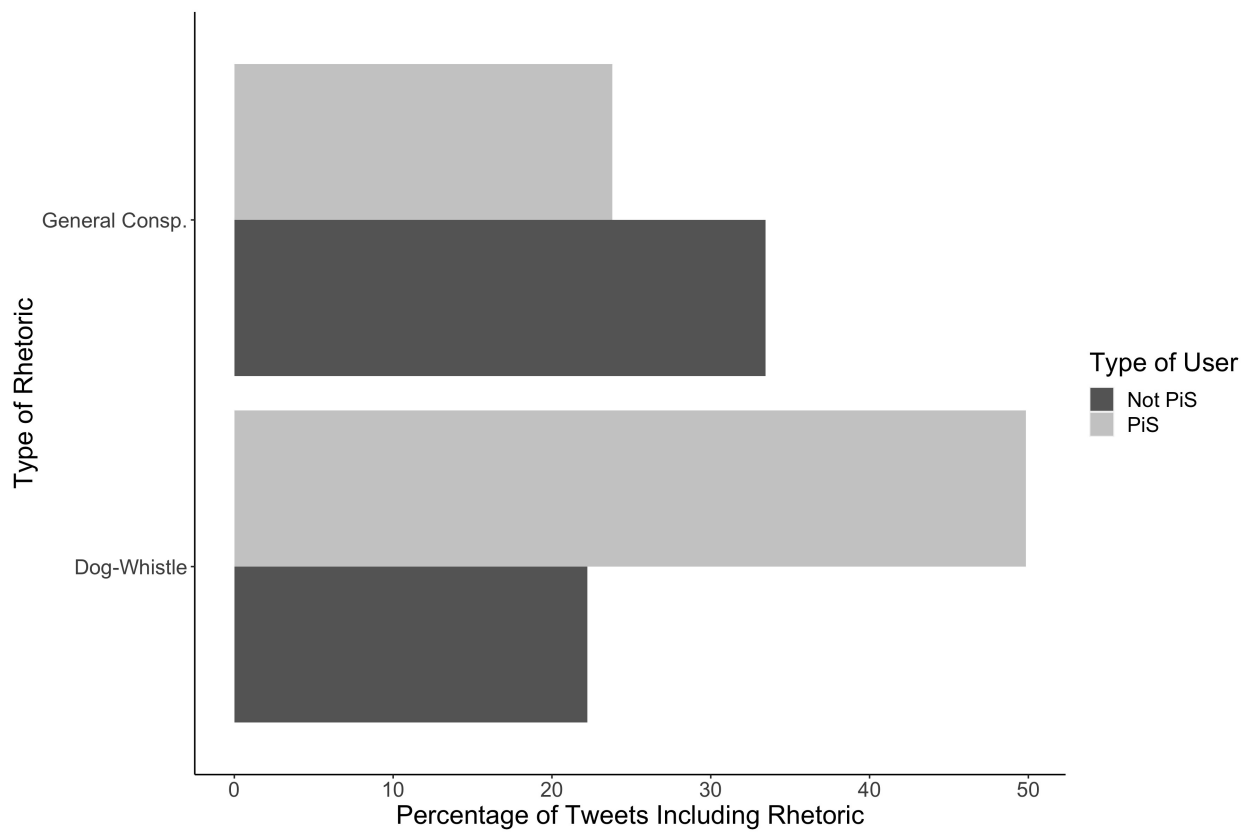
We thus find further support for our theory that populists use different strategies when invoking CTs online versus offline. Whereas offline, they explicitly invoked conspiracies, online, they tend to dog-whistle more frequently.

## Time Varying Effects

Blackington and Cayton (2024) argue that when a conspiracy theory’s central threat frames are salient, those CTs will earn more engagement on Twitter. Following that theory, we may expect that politicians will not only earn higher support for engaging conspiratorial rhetoric (as they find), but also that these politicians will invoke conspiracy theories more often. We evaluate this using the same method as Blackington and Cayton, analyzing whether PiS officials invoke CTs at different rates before and after the start of Russia’s full-scale invasion

<sup>12</sup>In Appendix A we show that PiS officials are also more central to those networks of tweets invoking dog-whistles than those invoking barks.

Figure 10: Twitter Rhetoric about Smoleńsk



of Ukraine in February 2022.

To do so, we run the same STMs as utilized in our main analysis on their tweet corpus. We note that the corpus we discuss in the “Data” section of this paper analyzes PiS party tweets over a 12-year period. By contrast, the STMs that we run on Blackington and Cayton’s data and present in this section assess PiS officials’ personal (not only the PiS party’s) tweets during a one year period.

We present the results from these robustness tests in Table 5. That table includes the topics identified by the model and each topic’s corresponding key words. There, it is visible that only Topic 2 (Crash Activism/CT) contains conspiratorial rhetoric. In both periods, PiS politicians discuss the crash investigation led by Minister Antoni Macierewicz. Yet clear appeals to an “explosion” and “zamach” (assassination attempt), as well as to “Putinism” appear following the start of the Russia’s full-scale invasion of Ukraine. Notably, this category also contains references to [counter-protesters at the monthly commemoration events \(“chicken”, “cat”, “characters”, and “tail,”\)](#). These reflect one month in which counter-protesters dressed up as different animals while protesting the events. Per *Gazeta Wyborcza*, police “chased the people in disguise and checked their IDs. They ripped off the cat’s tail.” The conspiratorial category thus merges CT discourse with discussions of the commemoration events, which offers further support for the idea that these discourses merge over time.

As shown in Figure 11, the Crash Activism/CT topic comprises only 16.2% of the corpus prior to Russia’s full-scale invasion of Ukraine. This rises to 36.79% of the corpus after the invasion. From these results, it is clear that—consistent with Blackington and Cayton (2024)—PiS politicians are not only are rewarded more for post-invasion CT usage, but they also may engage these CTs more explicitly following the invasion.

The sudden increase in conspiracy theory rhetoric after February 2022 observed in this robustness check maps onto a longer-term pattern that we observe over a 12-year period. Assessing the PiS party’s official Twitter account over the 12-year period, we observe an increased willingness on the part of PiS to explicitly invoke CTs on Twitter, perhaps as dog-

whistles lost their veiling power. Here, we see that at the tail-end of the period 2010-2022, PiS officials are more willing to engage CTs on Twitter. This pattern seems to accelerate following the invasion.

Does the increased use of CT rhetoric amongst this broader subset of PiS officials help explain the dual rise of memorialization and CT rhetoric in our main analyses? It provides additional support that there is an increase in “barks” or explicit CT usage over time.

Our main analysis, of the official PiS party Twitter account presented in main text Figures 1 and 2, indicates that memorialization and CT rhetoric increase together and merge over a 12-year period. When we analyze PiS officials’ Twitter accounts from August 2021 to July 2022 (rather the party’s account from April 2010-2022), we do not observe an increase in memorialization rhetoric. However, dog-whistles still comprise roughly two-thirds of all PiS tweets following the invasion.

Thus, in our main analysis, we find that dog whistles and CT usage increases *together*. In this robustness check, we see that while dog-whistles do not increase, they still comprise nearly two-thirds of tweets. In line with our theory, the dog-whistles may have become so understood that politicians no longer find it useful to invoke them at a higher rate, perhaps hitting a ceiling. We interpret the joint use of barks and such a large proportion of dog-whistles as further evidence of the “tuning” effect we observe in the main text.

## **Appendix C: Topic Labeling, Raw Topics, and FREX Words**

We now present the raw unlabeled topics and FREX words. Recall, STM models do not label the topics. Rather, labels are determined by researchers. To reflect the “pure” topics, we include the breakdowns of each here. These are divided by topic and then by year, illustrating the aspects of a topic category that change year-by-year as well as the more stable words that regularly occur within a topic. All words are lemmatized due to pre-processing, so they

Figure 11: Robustness Check of Twitter Topics Before-and-After Invasion

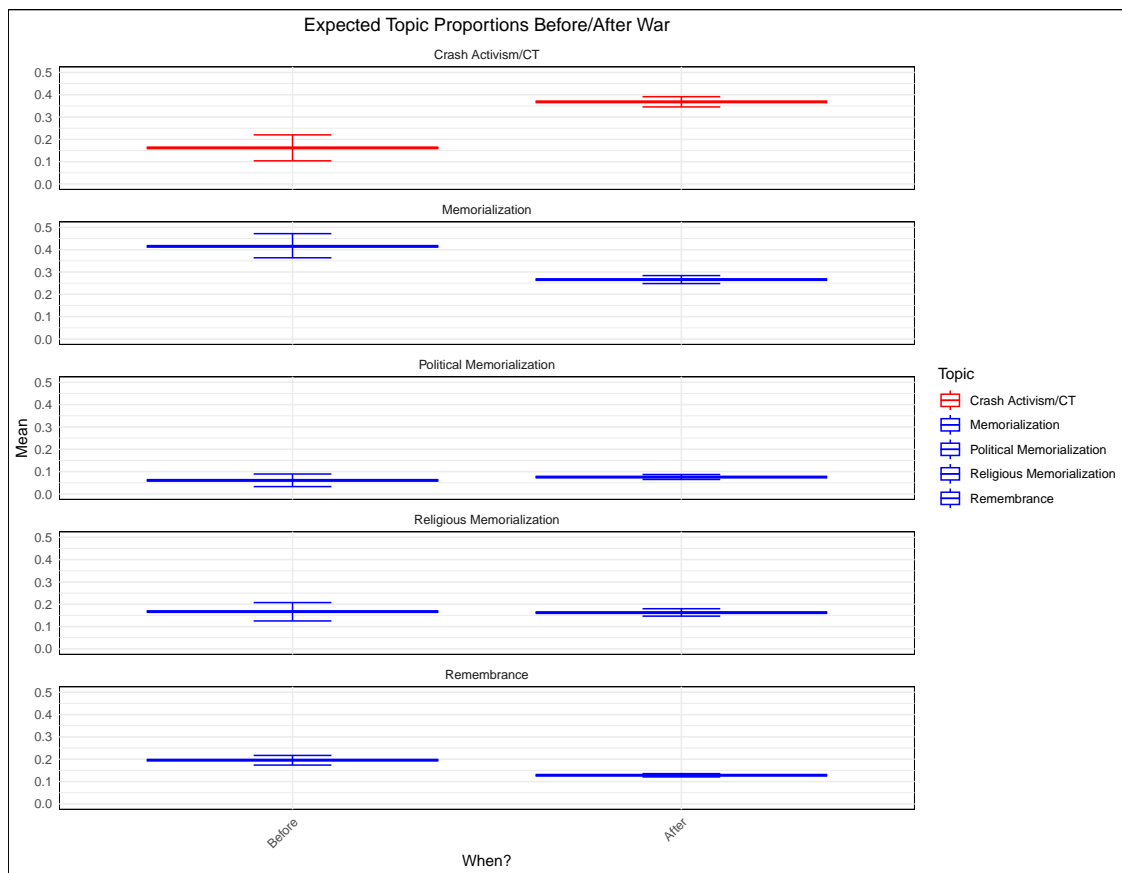


Table 5: PiS Officials’ Tweets Before and After Russia’s Full Scale Invasion

Topic	Topic Keywords	Pre-War Unique Words	Post-War Unique Words
Political Memorialization	#lechkaczynski, #silnirazm, bother, bringing, easier, hand, recover, effects, @elzbietawitek, question	5th, sun, wild, #hungarian, #memorial, polish-hungarian, months, #hungary, sign, friendship, truth, close, passengers	wreck, #silnirazm, bother, bringing, easier, hand, recover, #smolenskamie, sejm, @elzbietawitek, effects, marshal, question
Crash Activism/CT	#tvreplik, antoni, @toolekw, subcommittee, #fakty, #katastro, examination, @macierewicz_a, report, #pamiet, examining, #switch, macierewicz	#tomaszziemski, #mieściennica, cat, characters, chasing, chicken, dressed, fairy, identified, metro, shouted, success, tail	ideology, #pisism, explosion, jacyna-witt, #zamach, #putinism, real, #channel, #mark
Memorialization	#we remember, @szestka_anna, honor, memory, celebrated, moment, passed	#domojca, advice, conversations, stasia, desire, heartache, r.i.p, withdraw, #pamietamie, stanisław, @sabka87362928, sadness	celebration, appeal, wiecznia, #10, 12th, saint, anniversary, tribute, archcathedral, basilica
Remembrance	soul, #smolensk, #pamn	#pokojihdruz, pol, #niezapomil	attempt, polish flag smolensk, victims, 10kwienia, @pl1918, kotwicahistorii, women2010, pamietamy
Religious Memorialization	maria, lady, kaczyńska, lech, poland, prof, president, kaczyński, late, republic, katyn, representatives, people	september, choose, met, #piemodlitwy, visit, christmas, georgia, material, instantly, leaders, supported, #tu154m	grave, wife, laid, prime, flowers, commemorating, wreath, minister, speech, deputy

contain the English stem.

## Titling of Topics

As noted by Grimmer et al., 2022, labeling each topic is a researcher-driven process. To justify the topic title (column “Topic”) we reproduce Tables 1 and 2 in Tables 6 and 7. There, the column “Topic Discussion” discusses the labeling for each topic in greater depth.

Table 6: Speech Topics

Topic	Proportion	Topic Keywords	Topic Discussion
Crash Activism	33.21%	abov-, hard, imposs-, worth, everyon-, real, action, organ, marek, ani, tomasz, gazeta, polska	References to Marek Jedraszewski, Tomasz Sakiewicz, Gazeta Polska, and everyone correspond to thanking those people who organize the monthlies. By including word stems for action and organize, the category loops together those who take action. By mentioning how hard, impossible, yet worthy the actions are, this category represents Jarosław Kaczyński thanking those who organize the activism surrounding the crash.
CT/Investigation	22.06%	respons-, administr-, advantag-, drop, pursu-, spoke, true, care, establish, week, discuss, crime, accid-, mobil-, mind	Words in this category fall into two general categories. First, PiS’ goal of finding and speaking about the “true” causes of the crash (e.g. administration, response, drop, pursue, spoke, true, establish, discuss, mobilize, mind). Second, conspiratorial words that contrast the official causes of an “accident” with the so-called “true” causes, which he claims are a “crime.”
Memorialization	16.799%	signific-, terribl-, unit, path, memori-, presid-, determin-, import, win, relat-, moral, includ-, whi-, faith	Word stems for words like memorialize, path, president, important, unite, significant, moral, and faith suggest a memorialization of crash victims and a reminder of the loss of lives in the crash.
National Unity	14.091%	win, follow, refer, destroy, overcom, poland, rememb, day	Words suggesting that Poland will remember and overcome the day, destroy those responsible for the crash, and will emerge having won suggest a call for national unity behind the events of the day.
CT General	13.838%	attack, evil, activ-, overcom-	By specifically referencing an evil attack or activity that can be overcome, this category endorses CTs.



Table 7: Twitter Topics

Topic	Proportion	Topic Keywords	Topic Discussion
Memorialization	32.97%	anniversari-, kaczyński, disast-, lech, laid, presid-, prime, we, march, ministr-, speech	Words like anniversary, march, speech, and laid reference the monthly commemoration events that occur on the anniversary of the crash, correspond to a march of remembrance, include speeches given by a variety of people during the anniversary march, and involve laying flowers at monuments and graves. Keywords such as Lech, Kaczyński, President, Prime Minister, and Ministry represent individuals who either died or are taking part in anniversary events. The word disaster memorializes the plane crash but does not invoke a CT.
Katyn Memory	24.18%	rememb-, pis, monument, dure-, flower, @tvpinfo, katyn, media, politician	Phrases about remembrance, monument, flowers, and Katyń link aspects of Smoleńsk to memorializing Katyń by taking actions such as laying flowers in front of monuments. The media—including TVP—often covers PiS politicians participating in these commemorative events, which link these phrases with the Katyn memory category.
Broadcast Details	19.68%	April, poland, smolensk, broadcast, republ-, late, pis, victim, @morawiecki, plaqu-, pole	The station TVRepublika broadcasts different aspects of the annual Smoleńsk commemoration events that occur across Poland in April, including politicians visiting plaques. Morawiecki also participates in a variety of commemorative events, many of which are covered on stations like TVRepublika.
Kaczyński Speeches	12.304%	#10, rt, tribut-, dariusz,michałowski, grave, rememb-, @beataszydlo, deputi-, photo, wife, appeal	This category largely summarizes the speeches Jaroslaw Kaczynski gives where he frequently mentions Lech Kaczyński’s wife, a photo of Lech and his wife, appeals to Poles to remember or give a moment of tribute to them, and where he thanks prominent activists who organize these monthlies (e.g. Dariusz; Michałowski) or participate in them (e.g. Beata Szydło).
CT	10.866%	celebr, kaczyński, @szefernak, wreath, truth, memori, jarosław	Paweł Szefermaker’s Twitter account is tagged; he is “widely believed to be the mastermind behind” PiS online strategy, with suspicious Twitter accounts engaging on political issues even called “Szefermaker’s Eggs” (Gorwa, 2017, p. 16). The word “truth” also suggests the need to search for it. Yet other words lack conspiratorial undertones in this topic (e.g. Jarosław, Kaczyński, celebr-, wreath, and memori-. The most conspiratorial Twitter category is thus less conspiratorial than the corresponding speech category.

## Unformatted Topics

We now provide the full results from Tables 1 and 2, including words identified by each model as being correlated with a given topic in specific years (but are not used annually).

We title each topic using the following names (in order): ‘Kaczyński Speech Coverage’, ‘Conspiracy Theory’, ‘Broadcast Details of Offline Event’, ‘Memorialization’, ‘Katyn Memory’),

- **Topic Words:**

- **Topic 1:** #10, rt, tribut, dariusz, michałowski, grave, #pamieta, @beataszydlo, deputi-, photo, wife, appeal
- **Topic 2:** celebr, #kaczyński, @szefernak, wreath, truth, memori, jarosław
- **Topic 3:** April, poland, smolensk, broadcast, republ, late, pis, victim, @morawiecki, plaqu-, pole
- **Topic 4:** anniversari, kaczyński, disast, lech, laid, presid, prime, we, march, minist-, speech
- **Topic 5:** rememb, #pis, monument, dure, flower, @tvp\_info, katyn, media, politician

- **Covariate Words:**

- **Group 2011:** congress, hall, forev, live, broadcast
- **Group 2012:** recommend, current, photo, fold, album, facebook, return
- **Group 2013:** jan, pietrzak, garga, friend, recommend, beauti, common
- **Group 2014:** hour, lie, jk, human, heart, solidar, 4th
- **Group 2015:** #5, dri, movement, parliamentarian, cross, hour, held
- **Group 2016:** develop, 6th, moral, kaczyńska, fold, abl, #powazki

- **Group 2017:** #kprm, repair, 7th, min, @tulajew, prepar,  
@mon\_gov\_pl
- **Group 2018:** life, express, solemn, freedom, #tvp1, kill, @marekkuchcinski
- **Group 2019:** european, #parlamenteuropejski, strength, respons, hope, nation,  
law
- **Group 2020:** enter, @radioweynka, polici, 10th, histori, powazki, cemeteri
- **Group 2021:** club, lit, maciej, candl, 11th, warsaw, father
- **Group 2022:** deputi, choic, @elzbietawitek, minist, pay, maria,  
@kaminski\_m\_

- **Topic-Covariate Interactions:**

- **Topic 1, Group 2011:**
- **Topic 1, Group 2012:** photo
- **Topic 1, Group 2013:** photo
- **Topic 1, Group 2014:** tribut
- **Topic 1, Group 2015:** wife, tribut
- **Topic 1, Group 2016:** g.#gesicka, smońsk, lay, @beataszydlo, deputi, rt
- **Topic 1, Group 2017:** @beataszydlo, #10
- **Topic 1, Group 2018:** 8th
- **Topic 1, Group 2019:** lot, deputi, #10, rt
- **Topic 1, Group 2020:** #10
- **Topic 1, Group 2021:** deputi, #10

- **Topic 1, Group 2022:** @sop\_gov\_pl, command, @wpolscepl, tribut, deputi, rt
- **Topic 2, Group 2011:**
- **Topic 2, Group 2012:** celebr
- **Topic 2, Group 2013:** celebr
- **Topic 2, Group 2014:** reject, catastroph, celebr
- **Topic 2, Group 2015:** strong, truth
- **Topic 2, Group 2016:** #kaczyński
- **Topic 2, Group 2017:** #kprm, #kaczyński
- **Topic 2, Group 2018:** difficult, celebr, #kaczyński
- **Topic 2, Group 2019:** follow, wreath
- **Topic 2, Group 2020:** wreath, #kaczyński
- **Topic 2, Group 2021:** wreath, #kaczyński
- **Topic 2, Group 2022:** accid, catastroph, alway, @szefernak, deputi
- **Topic 3, Group 2011:** congress
- **Topic 3, Group 2012:** congress
- **Topic 3, Group 2013:** joint, anita, angelus, onli, broadcast, prayer
- **Topic 3, Group 2014:** broadcast, pis
- **Topic 3, Group 2015:** rydzyk, safe, radio, anita, matter, defend, pole
- **Topic 3, Group 2016:** categori, @mon\_pl, uw, #morawiecki, #warszawa, plaqu, ceremoni
- **Topic 3, Group 2017:** wassermann, friend, ceremoni, joint, govern, pis, late
- **Topic 3, Group 2018:** #pjk, @morawiecki, republ, victim, April, smolensk, poland

- **Topic 3, Group 2019:** exam,  
   @\_annazalewska,  
   student, @premierrp, #warszawa, @morawiecki, #kprm
- **Topic 3, Group 2020:** late, republ, April
- **Topic 3, Group 2021:** 11th, pis, republ, late, @morawiecki, April
- **Topic 3, Group 2022:** #warszawa, @morawiecki, pis, smolensk, republ
- **Topic 4, Group 2011:**
- **Topic 4, Group 2012:** album, facebook
- **Topic 4, Group 2013:** album, facebook, speech, live, kaczyński
- **Topic 4, Group 2014:** jk, 4th, held, speech, kaczyński
- **Topic 4, Group 2015:** @r\_czarnecki, transmiss, speech, lie, march, kaczyński
- **Topic 4, Group 2016:** unveil, maz, j.kaczyński, #gesicka, senat, deleg, commemor
- **Topic 4, Group 2017:** unveil, bust, gosiewski, prime, minist, march, presid
- **Topic 4, Group 2018:** unveil, loyalti, deleg, march, lech, #we, presid
- **Topic 4, Group 2019:** @beatamk, 9th, school, @men\_gov\_pl, support, deleg,  
   march
- **Topic 4, Group 2020:** 10th, lech, kaczyński, anniversari
- **Topic 4, Group 2021:** prime, minist, laid, lech
- **Topic 4, Group 2022:** evid, answer, prime, minist, anniversari, laid
- **Topic 5, Group 2011:**
- **Topic 5, Group 2012:** return, flower
- **Topic 5, Group 2013:** oratori
- **Topic 5, Group 2014:** faith, connect, word, import, truth, ident

- **Topic 5, Group 2015:** j.kaczyński, przedmieści, krakowski, book, creat, crowd, attack
- **Topic 5, Group 2016:** tabl, crowd, abl, rememb, #pis
- **Topic 5, Group 2017:** #koc, @pocztapolska, occasion, stamp, min.z.wassermann, vice, special
- **Topic 5, Group 2018:** month, @wassermann\_ma, @kanklariasmus, sejm, monument, flower, rememb
- **Topic 5, Group 2019:** #polskaserceuropi, list, regist, sens, mission, justic, @ac\_sobol
- **Topic 5, Group 2020:** #pis, rememb
- **Topic 5, Group 2021:** @aysawargocka, @rzecznikpi, #czerwińska, parlamentari, behalf, @piotr\_kalet\_, #legutko
- **Topic 5, Group 2022:** 12th, crime, ukrain, @piotr\_kalet\_, #legutko, flower, @elzbietaawitek

## Speeches

We use the following names (in order): ‘National Unity’, ‘Memorialization’, ‘Crash Activism’, ‘Crash Investigation and CT’, ‘Conspiracy Theory’.

### Topic Words:

- **Topic 1:** win, follow, refer, destroy, overcom, poland, rememb, day
- **Topic 2:** signific-, terribl-, unit, path, memori-, presid-, determin-, import, win, relat-, moral, includ-, whi-, faith
- **Topic 3:** abov-, hard, imposs-, worth, everyon-, real, action, organ, marek, ani, tomasz, gazeta, polska, abl-

- **Topic 4:** respons-,administr-, advantag-, drop, pursu-, spoke, true, care, establish, week, discuss, crime, accid-, mobil-, mind
- **Topic 5:** attack, evil, activ-, overcom-

**Covariate Words:**

- **Group 2012:** liquid, polit, polici, exampl, victori, power, independ
- **Group 2013:** press, throw, repres, evid, togeth, patriot, lie
- **Group 2014:** antoni, courag, telewizja, polit, count, futur, independ
- **Group 2015:** polici, play, lie, movement, creat, director, histori
- **Group 2016:** pressur, celebr, antoni, author, independ, play, film
- **Group 2017:** afraid, board, republ, reject, communiti, break, hear
- **Group 2018:** march, finish, mention, serv, bow, unveil, onc
- **Group 2019:** current, mission, strength, necessari, war, sens, power
- **Group 2022:** russia, answer, europ, consist, doubt, evid, close

**Topic-Covariate Interactions:**

- **Topic 1, Group 2012:**
- **Topic 1, Group 2013:** defend, patriot
- **Topic 1, Group 2014:**
- **Topic 1, Group 2015:**
- **Topic 1, Group 2016:**
- **Topic 1, Group 2017:**

- **Topic 1, Group 2018:**
- **Topic 1, Group 2019:**
- **Topic 1, Group 2022:**
- **Topic 2, Group 2012:**
- **Topic 2, Group 2013:**
- **Topic 2, Group 2014:**
- **Topic 2, Group 2015:**
- **Topic 2, Group 2016:**
- **Topic 2, Group 2017:** path, determin
- **Topic 2, Group 2018:**
- **Topic 2, Group 2019:** nation, understand, sens
- **Topic 2, Group 2022:**
- **Topic 3, Group 2012:**
- **Topic 3, Group 2013:**
- **Topic 3, Group 2014:** heart, abl, determin
- **Topic 3, Group 2015:** heart, movement
- **Topic 3, Group 2016:**
- **Topic 3, Group 2017:**
- **Topic 3, Group 2018:** serv, march, mass, realli, mention
- **Topic 3, Group 2019:**



- **Topic 3, Group 2022:**
- **Topic 4, Group 2012:**
- **Topic 4, Group 2013:**
- **Topic 4, Group 2014:**
- **Topic 4, Group 2015:**
- **Topic 4, Group 2016:**
- **Topic 4, Group 2017:**
- **Topic 4, Group 2018:**
- **Topic 4, Group 2019:**
- **Topic 4, Group 2022:** polici, respons, question
- **Topic 5, Group 2012:**
- **Topic 5, Group 2013:**
- **Topic 5, Group 2014:**
- **Topic 5, Group 2015:**
- **Topic 5, Group 2016:**
- **Topic 5, Group 2017:** attack
- **Topic 5, Group 2018:**
- **Topic 5, Group 2019:**
- **Topic 5, Group 2022:**

## Appendix D: Andrzej Duda’s Speeches

In the main text, we compare Kaczyński’s speeches at Smoleńsk commemoration events to online tweets from the PiS account. This choice invites the question of whether other PiS officials who give speeches at these commemoration events also invoke CTs. Not all PiS elites are invited to speak regularly at Smoleńsk commemoration events. Of those who regularly speak, we were unable to find consistent recordings of these speeches over time for all of them. However, we were able to transcribe, translate, and analyze speeches given by President Andrzej Duda from 2015-2023. We then run our STM analysis to parse the underlying themes in the Duda speeches, using the same process as described in the main text of our paper for Kaczyński’s speeches. Table 8 shows the words with the highest probability of being associated with each topic. Table 9 shows the covariate words by topic-year; we italicize conspiratorial words in that table.

We find that like Jarosław Kaczyński, President Duda also invokes and endorses conspiracy theories in his speeches at offline events over time. This finding suggests that other PiS elites beyond Kaczyński engage with conspiracy theories at offline events.

Table 8: Andrzej Duda’s Speech Topics

Topic	Topic Keywords	Topic Discussion
Memorialization	imagin, powazki, regret, caus, grave, continu, cemeteri, warsaw, devot, peopl, matter, power, kaczyński, lech, presid, alway, lot, sinc, mass, visit	These words describe memorialization events like visiting graves of crash victims at the Powazki Cemetery and attending masses. It includes words often used to describe the deceased President Lech Kaczyński such as devoted to the people and powerful. It also includes words frequently linked to commemorating crash victims, such as regretting the crash and always remembering the victims.
CT General	develop, rememb, bodi, katyn, wife, happen, flew, murder, patriot, countri, commemor, becaus, massacr, day, media, presid, special, plane, forget, moment	The words in this topic fuse commemorative words with conspiratorial overtones. Words in this topic describe crash events (e.g. flew, wife, patriot, president, plane) by using conspiratorial words like murder and massacre.
Crash Activism	servic, built, monument, whi, becaus, believ, warsaw, grave, color, cours, els, resid, simpli, marshal, decad, erect, featur, grate, law, root, tri, walk, worst, ani, trust, word, soldier, everyon, die, live	This category largely describes the creation of commemorative events associated with the plane crash. It describes building and erecting monuments, commemorating the lives of those who died, and walking to graves and monuments.
CT/National Unity	beauti, testimoni, uniti, task, affect, matter, event, govern, conduct, honest, import, led, dramat, togeth, mission, tragic, mutual, maria, societi, abov, histor, hero, elect, sometim	This category dog-whistles the causes of the crash by placing words calling for national unity (e.g. unity, together) alongside the need to find the true causes of the crash (e.g. conducting or leading investigations into the matter, being honest).
CT/Mourning	noth, coffin, lost, close, digniti, ourselv, protect, import, life, countri, pain, time, eye, god, pursu, replac, speech, victori, feel, follow, goodbye, determin, gather, candl, experienc, stood, extrem, complet, tear	This category invokes CTs by describing the need to protect life in the country, to protect Poland’s dignity, to determine the complete story of the events. It also describes the mourning process of losing important people, saying goodbye to them, laying candles to commemorate the lives lost, and invoking God.

Table 9: Andrzej Duda’s Speech Covariate Words

Year	Covariate Words
2016	author, forgiv, museum, alon, lawyer, local, uprising, warsaw, build, solidar, kaczyński, lech, minist, dramat, politician, presid, event, day, patriot, togeth, rememb, democrat, marta, pilgrimag, attitud, brought, command, deputi, achiev, anoth
2017	citizen, bow, respect, matter, reliabl, read, remain, espec, spirit, serv, power, <i>justic</i> , <i>respons</i> , krakowski, przedmieści, gentlemen, someon, person, grave, ladi, warsaw, republ, memori, <i>blood</i> , express, promot, unfortun, break, closest, defend
2018	unit, becom, creat, unveil, commemor, account, <i>bitter</i> , believ, belief, holi, common, <i>unknown</i> , public, terribl, becaus, left, squar, monument, krakow, divis, manag, sejm, voter, wisdom, father, daughter, servic, histori, pole, hope
2019	testament, faith, befor, leav, hand, <i>veri</i> , messag, citizen, life, alway, pain, countri, left, peopl, import, april, squar, <i>fail</i> , learn, nameless, freedom, ground, incred, john, paul, sacr, safe, street, war, woke
2020	challeng, lost, fall, disast, compatriot, hundr, coronavirus, fli, mayb, <i>repres</i> , dure, entir, anniversari, famili, ladi, day, time, communiti, aliv, befel, broadcast, care, central, christian, commit, crash, <i>crime</i> , <i>elit</i> , emerg, europ
2021	presenc, morn, <i>convinc</i> , <i>deep</i> , <i>doubt</i> , led, messag, communiti, sens, precis, april, matter, left, import, celebr, children, <i>death</i> , <i>disput</i> , fundament, journalist, daili, littl, lord, realli, talk, therefor, actual, pandem, perform, involv
2022	alway, mind, precis, specif, spoken, left, oblig, <i>veri</i> , flew, countri
2023	morn, alway, cemeteri, devot, peopl, tribut

## Appendix E: Audience Analysis Across Media Outlets

Our theory asserts that politicians adjust their discourse around conspiracy theories to the audience at hand. In this case, we argue that this varies such that politicians provide explicit CT rhetoric to party faithful at in-person events, and offer more generalized discourse to their Twitter audiences.

One concern this raises is that mainstream media may cover offline events, enabling these speeches to gain a similarly mass-based audience. To assuage these concerns, we check three of the top daily newspapers in Poland (BBC, 2012; Makarenko, 2022) for their coverage of the April 10 commemoration events for each year in our sample. Using the CrowdTangle Browser Extension (CrowdTangle, 2024), we collect the Facebook impressions for each article. These are presented in Tables 10 to 12. There, it is evident that while the offline memorials gain substantial in-person audiences, these do not translate to media coverage of these events.<sup>13</sup>

Furthermore, each magazine only included select quotes from the speeches. Since edited speeches are not directly from the politicians themselves, but rather are filtered through journalists and editors, the diluted coverage from the media is closer to the mass-audience language of the PiS party’s Twitter discourse. Indeed, we similarly see select quotes from speeches mentioned on the PiS party’s Twitter account rather than the full speech.

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<sup>13</sup>For Rzeczpospolita, pre-2022 articles were only included in the paper’s archive. We thus cannot check engagement statistics with CrowdTangle.

Table 10: Wyborcza Coverage of Events

Year	FB Reactions	FB Comments	FB Shares	Newspaper Comments
2022	2661	1113	57	237
2022	668	402	74	35
2019	0	0	0	135
2018	0	38	0	0
2018	0	0	0	80
2017	0	0	0	94
2016	0	0	0	10
2016	0	0	0	130
2015	0	0	0	9
2014	0	0	0	28
2014	0	0	0	23
2014	0	0	0	17
2013	0	0	0	198
2012	0	0	0	0
2011	0	0	0	0
2011	0	0	0	0

Table 11: Fakt Coverage of Events

Year	Reactions	Comments	Shares	Newspaper Comments
2022	0	0	0	n/a
2022	0	0	6	n/a
2019	0	0	1	n/a
2018	0	0	0	n/a
2018	0	0	0	n/a
2018	0	0	0	n/a
2017	0	0	0	n/a
2017	0	0	0	n/a
2016	0	0	0	n/a
2016	0	0	0	n/a
2015	0	0	0	n/a
2015	0	0	0	n/a
2014	0	0	0	n/a
2012	0	0	0	n/a
2011	0	0	0	n/a

Table 12: Rzeczpospolita Coverage of Events

Year	Reactions	Comments	Shares	Newspaper Comments
2022	0	0	8	12
2018	n/a	n/a	n/a	n/a
2017	n/a	n/a	n/a	n/a
2014	n/a	n/a	n/a	n/a
2013	n/a	n/a	n/a	n/a
2012	n/a	n/a	n/a	n/a
2011	n/a	n/a	n/a	n/a

## Appendix F: YouTube Transcription Protocol

Another concern could be that the offline speeches, which we transcribed from YouTube, circulated online to a larger audience. To assuage these concerns, we provide full CrowdTangle impression data in Table 13.<sup>14</sup> As evident from Table 13, YouTube coverage of speeches did not experience a major online afterlife. Indeed, the speech that circulated the furthest occurred in 2012, and even then only earned an additional 2,900 views. This still pales in comparison to in-person attendance. There is not official attendance data kept by the city or party, but according to coverage from *Gazeta Wyborcza*, in April 2022 there was a “crowd of several thousand people. [The street] Krakowskie Przedmieście is completely packed with people for 200-300 meters.” This is corroborated by videos from the protests, which show that multiple street blocks are closed outside the Presidential Palace and the streets are packed. Estimates based on CBOS public opinion polls from 2011 would place attendance at offline events in at least the tens, if not hundreds, of thousands (CBOS, 2011).

We take this opportunity to provide a brief overview of the data collection protocol. Both authors speak Polish. We searched YouTube for each year’s full event. For most years these were provided by the official PiS party channel. When not available, we looked for videos posted by attendees and went with the video with the highest quality audio. The authors transcribed the videos using the voice-to-text transcriptions from Microsoft Word. Both authors then checked the transcriptions directly with the speeches and corrected machine-

<sup>14</sup>2015 coverage was not posted on YouTube, but on TVN24.pl, and thus does not offer views data.

Table 13: Speech Imprints on Youtube

Year	Facebook Reactions	Facebook Comments	Facebook Re-posts	Views	Youtube Likes
2022	12	4	3	1900	79
2019	79	0	0	1800	79
2018	0	0	0	634	23
2017	1	0	11	1000	32
2016	1	0	6	491	35
2015	0	0	0	n/a	n/a
2014	0	0	0	215	12
2013	0	0	0	199	3
2012	0	0	0	2900	16
2011	0	0	0	177	3

Table 14: Speech Links

Year	Link
2022	<a href="https://www.youtube.com/watch?v=qLuJxr5PsGM">https://www.youtube.com/watch?v=qLuJxr5PsGM</a>
2019	<a href="https://www.youtube.com/watch?v=8Vh4b_t3BWk">https://www.youtube.com/watch?v=8Vh4b_t3BWk</a>
2018	<a href="https://www.youtube.com/watch?v=DXIznipdDzI">https://www.youtube.com/watch?v=DXIznipdDzI</a>
2017	<a href="https://www.youtube.com/watch?v=newozAoN13o">https://www.youtube.com/watch?v=newozAoN13o</a>
2016	<a href="https://www.youtube.com/watch?v=ZGDme0u-TMU">https://www.youtube.com/watch?v=ZGDme0u-TMU</a>
2015	<a href="https://tvn24.pl/polska/piata-rocznica-katastrofy-smolenskiej-obchody-rocznicy-katastrofy-ra532039-3298561">https://tvn24.pl/polska/piata-rocznica-katastrofy-smolenskiej-obchody-rocznicy-katastrofy-ra532039-3298561</a>
2014	<a href="https://www.youtube.com/watch?v=WunEDHtkHus">https://www.youtube.com/watch?v=WunEDHtkHus</a>
2013	<a href="https://www.youtube.com/watch?v=gmQS7WBluS4">https://www.youtube.com/watch?v=gmQS7WBluS4</a>
2012	<a href="https://www.youtube.com/watch?v=V98hf8cCyQ0">https://www.youtube.com/watch?v=V98hf8cCyQ0</a>
2011	<a href="https://www.youtube.com/watch?v=GBE6gKQpgXQ">https://www.youtube.com/watch?v=GBE6gKQpgXQ</a>

made mistakes, discussing if there were any questions. We then translated the speeches to English to facilitate the STM analysis. Links to all videos are included below in Table 14.

A final concern may be that there are other videos of the speeches, outside of those included in this corpus. These were the only complete videos of the speeches we could find on YouTube at the time of data collection.



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