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RESEARCH NOTE: DATASET

A new database for Italian parliamentary speeches: introducing the *ItaParlCorpus* dataset

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Abstract

A common challenge in studying Italian parliamentary discourse is the lack of accessible, machine-readable, and systematized parliamentary data. To address this, this article introduces the *ItaParlCorpus* dataset, a new, annotated, machine-readable collection of Italian parliamentary plenary speeches for the Camera dei Deputati, the lower house of Parliament, spanning from 1948 to 2022. This dataset encompasses 470 million words and 2.4 million speeches delivered by 5830 unique speakers representing 77 different political parties. The files are designed for easy processing and analysis using widely-used programming languages, and they include metadata such as speaker identification and party affiliation. This opens up opportunities for in-depth analyses on a variety of topics related to parliamentary behavior, elite rhetoric, and the salience of political themes, exploring how these vary across party families and over time.

Keywords: Italy; parliament; political parties; research methods; text analysis

Introduction

As big data and quantitative text analysis techniques have advanced, political scientists have identified in parliamentary speeches, rich data collections that explicitly illustrate policymakers' preferences, a valuable tool for analyzing political parties' stances on a wide range of issues (Rauh and Schwalbach, 2020; Sebők *et al.*, 2025). Among many different applications, parliamentary speeches have been found to provide an excellent source of data for examining policymakers' policy preferences, tracking shifts in political discourse over time, analyzing how elite rhetoric varies across party families, studying the salience of different policies, and conducting sentiment analyses (Proksch and Slapin, 2015). While parliamentary data are readily available for several countries, researchers focusing on Italian politics have often faced challenges due to the limited availability of machine-readable parliamentary texts.

This article introduces the *ItaParlCorpus* dataset, a new comprehensive, annotated, and machine-readable dataset of parliamentary speeches for Italy's lower house of parliament, the *Camera dei Deputati*, for the period 1948–2022. This new database, which covers the parliamentary plenary debates of 18 legislatures includes over 470 million words, 2.4 million interventions, from 5830 unique speakers representing 77 different political parties and parliamentary groups. Scholars of Italian politics, who have previously faced challenges when analyzing parliamentary debates due to the prevalence of non-machine-readable scans and poor data quality, can now benefit from this resource. The *ItaParlCorpus* provides structured .csv files, with each row containing information on the name of the speaker, party affiliation, and the date of each

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parliamentary intervention. Additionally, this corpus of parliamentary debates includes unique identifiers for parliamentarians, which can be linked to the frequently employed Comparative Legislators Database (Göbel and Munzert, 2022); a dataset, which provides extensive socio-demographic information on parliamentarians. The large .csv files which make up the *ItaParlCorpus* dataset can easily be processed and analyzed with common programming languages such as R and Python, allowing researchers to understand how the salience of different political themes has changed in time and between parties.

This article is structured as follows. First, I review various efforts to digitize and annotate parliamentary debates in Italy and other democracies and the range of research questions that have recently been addressed by using corpora of parliamentary debates. Second, I detail the data collection process for the *ItaParlCorpus* database and present the structure of the dataset. The third section illustrates a few concrete applications of what one can do with this new database. It does so by analyzing how the topics of abortion and the mafia have been discussed in Italian parliamentary debates, both over time and across different party groups. Finally, the last section concludes by summarizing the added value this database could provide to researchers studying Italian politics.

Parliamentary speeches in big data and natural language processing research

With the growing availability of digitized textual data, political science researchers seeking to assess policymakers' ideological positions can now draw on a wide range of empirical sources, from social media posts to electoral manifestos. Consequently, text data have also been widely used to analyze Italian politics. For instance, Ceron (2024) employs a text analysis of Italian presidents' investiture speeches and television addresses to explore how Italian presidents' ideological leanings manifest themselves in these settings. Quantitative text analysis has also been employed to investigate Italian social media texts and have helped address a variety of different research questions. These include exploring levels of intra-party conflicts (Ceron, 2017), analyzing immigration-related discussions (De Rosa *et al.*, 2021), and forecasting electoral outcomes (Caldarelli *et al.*, 2014). Additionally, scholars of Italian politics have employed newspaper corpora as a resource to analyze how policymakers adopted different policy narratives, for example during the Euro crisis (Bobba and Seddone, 2018) or the COVID-19 pandemic (Crabu *et al.*, 2021).

In this context, researchers have shown growing interest in leveraging collections of parliamentary speeches to study political actors' policy preferences. Using parliamentary speeches makes good sense as parliaments are crucial venues for the formulation of policy agendas, as they constitute the formal institution where parties compete to fulfill their representative mandates in between elections and thus a forum in which policymakers can not only signal policy positions toward other parties, but also to the electorate as a whole (Vliegenthart et al., 2013; Proksch and Slapin, 2015). However, researchers' ability to draw inferences on policymakers' positions on a range of political questions is predicated upon the ease with which it is possible to access and analyze these texts. Parliamentary speeches have proven to be a rather challenging source of textual data as parliamentary records are often not adequately digitized and data quality frequently deteriorates the further back in time one goes. As noted by Sebők et al. (2025) for several European democracies, there exist significant hurdles in obtaining data that can then be readily parsed and analyzed using commonly used programming languages. This means that researchers must invest significant efforts in scraping parliamentary debates from national parliaments' websites and even so, scraped files can often not be readily processed and analyzed because of poor data quality or inconsistent data infrastructures and naming conventions.

However, when accessible, legislative data from parliamentary corpora have become an increasingly valuable resource, widely applied in diverse studies utilizing various methodological designs. Thus, parliamentary corpora have been used to assess the salience of policy issues

(Greene and Cross, 2017; Cova and Schmitz, 2024), conduct sentiment analyses (Proksch et al., 2019), and investigate speech complexity in elite rhetoric (Osnabrügge et al., 2021), for example. Additionally, quantitative text analyses of legislative debates have explored how different parliamentary rules shape legislative behavior, both in comparative contexts and specifically for Italy (Giannetti and Pedrazzani, 2021). Researchers have also applied text analysis to corpora of parliamentary debates to investigate how the socio-demographic characteristics of parliamentarians influence the likelihood of certain policy themes being discussed. Numerous studies have thus illustrated the extent to which personal and socio-demographic factors, such as gender and socio-economic background, shape legislative behavior, including variations in speaking time and topic selection (Bäck and Debus, 2019; O'Grady, 2019).

Considering the numerous research questions that can be addressed using parliamentary speeches as well as the different automated text analysis methods that can be applied, recent years have seen increased efforts to publish machine-readable collections of parliamentary speeches, which have taken the form of country-specific as well as cross-national projects. For instance, Remschel and Kroeber (2022) released a comprehensive dataset on German parliamentary proceedings that includes not only parliamentary speeches but also other types of parliamentary data, such as bills, written responses, communications, requests, and replies. Beelen *et al.* (2017) have harmonized and standardized Canadian parliamentary archives, dating back to the 19th century, into machine-readable formats. Recent years have also marked the emergence of comparative projects, which have sought to map out and harmonize digital infrastructures, including parliamentary corpora (Erjavec *et al.*, 2023). Most notably, the widely used *ParlSpeech* dataset (Rauh and Schwalbach, 2020) contains full-text corpora of parliamentary speeches from various advanced democracies over the past two to three decades and has been extensively employed in comparative analyses of legislative activities and parliamentary behavior. However, Italy is not represented in the dataset.

As far as the Italian case is concerned, as part of the broader CLARIN project, which aims to collect machine-readable and annotated corpora of European countries' parliamentary proceedings, Agnoloni et al. (2022) have collected 79,000 speeches containing ca. 31 million words for the Senato for 2013-2020. While this constitutes an important achievement, the limited timespan offered by the database limits the possibility of conducting historical analyses. Within this context, it is also important to mention the Italian Legislative Speech Dataset: a historical collection (1946-2022) of investiture speeches delivered in Parliament during votes of confidence. The texts are segmented into quasi-sentences to facilitate classification of parliamentary interventions based on the salience of different policy themes. While this dataset is a valuable resource, its focus on investiture speeches restricts its scope, thus limiting opportunities to analyze a broader range of parliamentary speeches that are reflective of ordinary legislative interactions. Due to the challenges of obtaining machine-readable plenary speeches, researchers studying Italian parliamentary behavior and political practices have shifted their focus to other types of discourse recorded in parliament. To name a few examples, Cavalieri and Froio (2022) examine the behavior of populist parties through parliamentary questions, while Salvati (2021) analyzes prime ministers' speeches during votes of confidence from 1994 onward.

The dataset

The *ItaParlCorpus* dataset is a comprehensive, annotated, and machine-readable database of Italy's parliamentary speeches spanning from 1948 to 2022. It provides data on parliamentary plenary transcripts, which allows researchers to investigate a wide range of topics, including party positioning on various policy areas, elite rhetoric, and the salience of different issues within the Italian parliamentary context. The dataset as well as the codebook are open access and are

¹See, "ILSD: Italian Legislative Speech Dataset" (https://andreaceron.com/projects/ilsd/).

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precisazione che ho sentito il dovere di fare (Interruzione del deputato Villa). Si è arrivati a questo dibattito con una parola d'ordine; « Niente trattative ». VILLA. Quello che hai detto era atteso da tutto il paese! (Proteste del deputato Pinto). PRESIDENTE. Onorevole Pinto, ella ha a disposizione un tempo limitato: se ne serva per dire quello che hai da dire. PINTO. La parola d'ordine era: « Niente trattative ». Non sono d'accordo, in primo luogo per il modo cinico, che non è inconsapevole, ma che consapevole, con cui si rischia di determinane la morte dell'onorevole Moro. Può sembrare strano che lo, che vedevo e vedo ancora in Moro (perché spero che non sia morto) uno del leaders autorevoli e indiscussi di quel partito che voglio continuare a combattere fersamente e al quale voglio contribuire a togliere il potere, mi debba fare paladino e difensore della vita dell'onorevole Aldo Moro. un giornale scrive che forse si è scelta la strada più facilie: quella di mostrare al paese e al popolo che lo Stato democratico non viene sconfitto. Ma io penso che non in questo modo si eviti la sconfitta dello Stato democratico, che è stato più volte sconfitto, anche se non abbatuto. Non intendo, infatti, spazzar via le conquiste che la classe operaia ha saputo otterere in questi ternt'ami. Lo stato democratico, tuttavia, è stato sconfitto più volte: è stato sconfitto quando le libertà costituzionali sono state violate. Non è demagogia, non è populismo dire che esso è siato sconfitto gni volta che un emigrante lasciava ii sude u andava all'estero, quando i cospagni venivano mamzizati sulle strade, quando le leggi non venivano applicate, quando ivotri; sosteritori, colleghi della democrazia cristiana, portavano i soldi all'estero, quando morivano nelle fabbriche operai di cui non si ricorda il none, quando avvenivano il drama da fuoco al aluvioni o il trerremoto del Frivili, e si gestivano in un parti. colare modo anche della grazia e non penso che con questa risposta diamo un'immagine riabilitata e forte dello stato. No

Figure 1. Original .txt files of parliamentary discussions on April 4, 1978.

freely available on the Harvard dataverse.² In what follows, I briefly describe the construction of the database and the operationalization of the variables.

As discussed above, a significant hurdle for researchers studying historical parliamentary speeches is the poor quality of available material, which largely depends on existing digitization efforts and the availability of archival resources. In the Italian case, the *Camera dei Deputati* only offers images and scans for records prior to 1996. The further back one goes, the more unstructured do these files tend to be. The first necessary step is thus converting these scans and images into text files using optical character recognition (OCR) technology. This prior invaluable work was carried out by Frasnelli and Aprosio (2024), who made the .txt files available on a GitHub repository. However, these text files are unstructured as illustrated by the example (Figure 1) and therefore are not readily utilizable by researchers interested in substantive political science questions. Moreover, a common challenge when using OCR technology for text files is ensuring the accurate conversion of scans into readable text. In the Appendix, I assess data quality by employing the Italian Hunspell spellchecker to identify improperly converted words. As illustrated in Figure A2, the proportion of misspelled words in parliamentary interventions remains relatively low, typically ranging between 1 and 3% across most years.

The unstructured text files derived from the OCR scans present a challenge because they do not clearly separate the content of parliamentary speeches from the identities of the speakers. As illustrated in Figure 1, the speech content and the names of parliamentarians appear on the same line. Once the repository of these unstructured text files is downloaded, the task is thus to accurately differentiate between speakers' ID and the speech content that is associated to them. This distinction is essential for political science research, as correctly linking party affiliation to specific speeches is crucial for analyzing substantive policy discussions. As shown in Figure 1, parliamentarians are indicated in the text files using words which only contain capitalized letters. However, uncritically relying solely on words with capitalized letters to identify speakers is problematic because not all such words can be tied back to parliamentarians (e.g. acronyms or Roman numerals). Furthermore, inconsistent naming conventions add complexity: in some legislatures, only surnames are used, while in others, names may appear as "first name-surname" or "surname-first name". Another complication is that not all parliamentary interventions are from members of the Camera dei Deputati. Invited speakers, such as ministers, technocrats without parliamentary seats, and members of the Senato, also intervene in plenary debates.

To determine the party affiliations of speakers in the text files, I utilized a list of Italian legislators from the Comparative Legislators Database (Göbel and Munzert, 2022). This multinational dataset includes detailed information on national-level policymakers, such as their names, party affiliation as well as socio-demographic data. To ensure that I have accurately identified government members who do not serve in parliament, I supplemented this data by scraping

²See, ItaParlCorpus (https://dataverse.harvard.edu/dataset.xhtml?persistentId=doi:10.7910/DVN/KUARWD).

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Figure 2. Converted .csv files of parliamentary discussions on April 4, 1978.

the Italian government's website to collect the names of cabinet members across different governments.³ Additionally, I incorporated data from prior data collections on Italian technocrats (Improta, 2021). This comprehensive approach allowed me to compile a complete list of legislators, encompassing both parliamentarians and non-elected government officials, enabling precise separation of speakers from speech content. In order to address discrepancies between the text files and the compiled list of speakers, I conducted manual checks across legislative periods. Mismatches typically arose from differences in naming conventions, such as the use of middle names or maiden vs. married names in one source but not the other. The Appendix provides further information on how these manual checks were conducted.

The final output is a series of .csv files, in which every row corresponds to a parliamentary intervention/speech, recording the following information: the day in which the speech took place (date), the year (year), a document identifier (doc_id), a unique row identifier (row_id), the legislature (legislature), the speaker's name (speaker), the speaker's unique numerical identifier (pageid_wiki), which coincides with that used by the Comparative Legislators Database (Göbel and Munzert, 2022), the party name (party_name), the party family (party_family) to which the party belongs to as recorded in the ParlGov Database (Döring and Manow, 2024), the ParlGov unique numerical party identifier (party_id_parlgov), the ItaParlCorpus unique numerical party identifier (party_id_itaparl), a Boolean variable denoting whether the speaker is the chair (chair), another variable, which denotes whether the speaker is a cabinet member (cabinet) without being recorded as a member of the Camera dei Deputati (i.e. a member of the Senate or a technocrat), and finally the raw text (text). An example of the final output is shown in Figure 2.

Potential applications

The *ItaParlCorpus* database enables researchers to perform quantitative text analyses of Italy's parliamentary discourse, offering valuable insights for various subfields of political science and related disciplines. Beyond the raw text data, the database also provides contextual political information, such as party affiliation, which supports the development of more sophisticated research designs. Here, I present some brief examples to demonstrate potential applications of this new corpus of Italian parliamentary speeches. The analysis focuses on two particularly prominent and contentious topics in Italy's post-war republican history: abortion and the mafia. Specifically, it examines the salience of these topics in the parliamentary context, as well as the manner in which these issues have been debated by policymakers. To be clear, the purpose of this article is not to provide a substantive analysis of these well-studied topics, but rather to illustrate how this corpus can be used in ways that may be of interest to scholars of Italian politics.

In many European democracies, the struggle for women's reproductive rights, particularly access to safe and legal abortion, emerged as a pivotal civil rights issue in the latter half of the 20th century. In Italy, the introduction of abortion rights in 1978 through the *Legge* 194 marked a watershed moment, granting women the legal right to terminate a pregnancy within the first 12 weeks. At the time, this was a deeply contentious issue, influenced also significantly by the

³See, *Presidenza del Consiglio dei Ministri*, "I Governi nelle Legislature" (https://www.governo.it/it/i-governi-dal-1943-adoggi/i-governi-nelle-legislature/192).

Catholic Church's prominent role in Italian political life. While left-wing parties and lay, liberalcentrist groups such as the Partito Liberale Italiano and the Partito Repubblicano Italiano supported the legislation, the Christian Democrats (DC) faced internal divisions, and the far-right Movimento Sociale Italiano opposed it.

A very different, but very politically salient issue which significantly shaped Italy's post-war history is that of the mafia. For much of this period, the mafia was a topic rarely addressed publicly by political elites, who often downplayed the infiltration of organized crime in the upper echelons of power. However, escalating public displays of violence, culminating in the highprofile assassinations of judges and politicians during the 1980s and 1990s, forced a shift in political discourse and policy action.

To explore the changing salience of these two key terms using the ItaParlCorpus database, I examine the share of parliamentary interventions discussing the terms "abortion" and "mafia" in the period 1948–1992 (Figure 3). I operationalize salience as the share of parliamentary interventions discussing these topics as a share of the total number of parliamentary interventions made by party groups. Abortion emerges as a highly salient topic, with nearly 10% of parliamentary interventions addressing this topic at its peak. Notably, the center-left and the PCI (Italian Communist Party) demonstrated significantly higher salience on this issue compared to the DC. In contrast, discussions of the mafia exhibited low salience during the early decades, gradually increasing in prominence throughout the 1980s and 1990s. While this analysis is indicative of the parliamentary salience of these terms and which political party emphasized these issues more than others, the next step is to examine the way in which parliamentary discourse has changed. In this article, I showcase two different analytical approaches.

To analyze how discussions of the mafia evolved in parliamentary discourse, I conduct a descriptive analysis of the words most frequently employed in these debates. To do this, I extract sentences from parliamentary interventions that explicitly mention the mafia and conduct my analysis across four distinct historical periods: 1948-1959, 1960-1979, 1980-1999, and 2000–2022. As highlighted in Figures 4 and 5, one can observe notable temporal shifts in the most frequently used nouns and adjectives in sentences in which politicians discuss the mafia

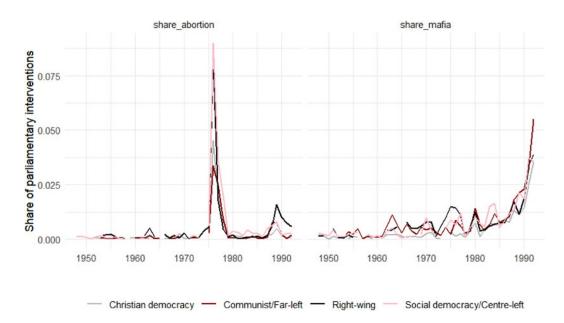


Figure 3. Share of parliamentary interventions discussing abortion (left) or the mafia (right) as a share of all parliamentary interventions by party (1948-1992).

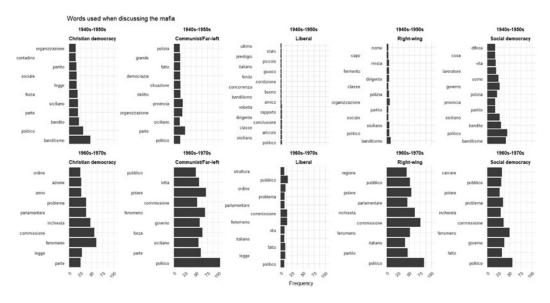


Figure 4. Most common nouns and adjectives used by political party families when discussing the mafia (1948-1979).

in parliament. During the initial period under analysis (1948–1959), parliamentary discussions frequently associated the mafia with banditry (*banditismo*) while also highlighting possible political connections. As the 1960s and 1970s unfolded, possibly mirroring a heightened awareness of the mafia, discussions across party lines increasingly incorporated terms such as "phenomenon," "enquiry," and "problem." In the 1980s and 1990s, as the mafia emerged as a more prominent and widely discussed topic, there seems to have been greater alignment in the terminology

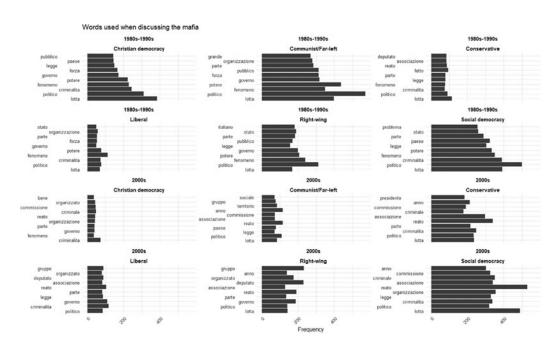


Figure 5. Most common nouns and adjectives used by political party families when discussing the mafia (1980–2022).

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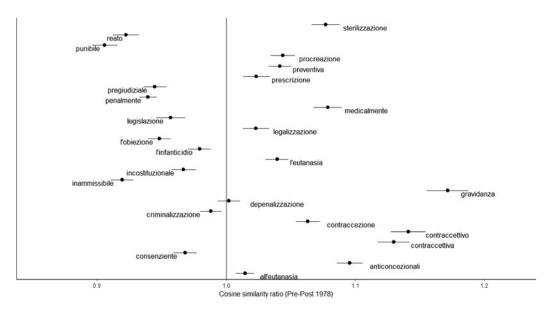


Figure 6. Cosine similarity for speeches discussing abortion before and after the introduction of the Legge 194 (1978).

employed by various political groups. This period also saw a growing emphasis on the term "public," possibly reflecting increased awareness about the mafia's impact on society. Finally, in the 2000s, parliamentary language shifted toward a more legalistic framework, with terms like "criminality," "laws," and "criminal offense" becoming more prominent, signaling a possible focus on institutional and judicial responses to organized crime.

While the analysis presented above has relied on frequency-based methods, in recent years, political scientists have increasingly adopted more sophisticated text analysis techniques. Leveraging advances in natural language processing (NLP), such as word embeddings, researchers can in fact examine semantic relationships within large text corpora, capturing subtler connections and meanings that simple word counts or co-occurrence metrics might miss. As highlighted in the recent work of Rodriguez *et al.* (2023), one specific application is the use of cosine similarity, which leverages word embeddings to identify the most distinctive words across different groups or categories.

In this context, a cosine similarity analysis of parliamentary interventions on abortion before and after the introduction of Law 194 in 1978 highlights the most distinctive terms of each period. Interestingly, as illustrated in Figure 6, parliamentary discourse prior to 1978 often emphasized topics and frames related to crime and morality. In contrast, post-1978 discussions shifted toward a medicalized vocabulary, focusing on terms such as contraceptives and sterilization, as well as broader bioethical issues like euthanasia.

Conclusion

This article introduces the *ItaParlCorpus* database, a new resource for studying Italian politics. The dataset covers Italy's post-war republican period (1948–2022) and consists of a machine-readable corpus of parliamentary plenary speeches, which can be easily processed and analyzed using popular programming languages, such as R and Python. The *ItaParlCorpus* is an extensive dataset, featuring over 2.4 million parliamentary speeches across 18 different legislatures, along with metadata that includes speaker identification and party affiliation.

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As large text corpora gain prominence in empirical political science, digitized records of parliamentary debates have become essential for exploring key questions about party positioning on policy issues. Beyond assessing the salience of political topics and tracking the evolution of discourse, this corpus can be integrated with other datasets, such as the Comparative Legislators Database, which provides detailed socio-demographic and electoral data on parliamentarians. Such integration would for example enable investigations into how parliamentarians' socio-demographic profiles influence their legislative activities.

The *ItaParlCorpus* dataset also facilitates research into how party positioning (e.g. on the left-

The *ItaParlCorpus* dataset also facilitates research into how party positioning (e.g. on the leftright or the GAL-TAN dimension of political competition) affect parties' emphasis on particular policy issues. Moreover, advanced NLP tools can be employed to analyze levels of party conflict over time, both within and between parties, thus offering insights into the changing dynamics of parliamentary discourse (see e.g. Rheault and Cochrane, 2020). Beyond political science, the large-scale digitization of texts and the computational, quantitative study of texts has become an emerging trend in cultural studies and linguistics (Michel *et al.*, 2011). In recent years, comparative political scientists have increasingly turned to parliamentary debates to explore questions of political representation and examine how issue salience evolves over time. For these analyses, researchers have relied on comparative datasets of parliamentary corpora, such as *ParlSpeech* (Rauh and Schwalbach, 2020) and *ParlaMint* (Erjavec *et al.*, 2023). However, Italy is either absent or has a limited time series in these datasets. As such, the *ItaParlCorpus* dataset emerges as a valuable resource, holding relevance across multiple disciplines and offering rich potential for scholarly investigations into Italy's post-war political language.

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 $\label{lambda} \begin{tabular}{ll} \textbf{Data.} & The $ItaParlCorpus$ dataset is available at: $https://dataverse.harvard.edu/dataset.xhtml?persistentId=doi:10.7910/DVN/KUARWD and the replication files are available at: $https://dataverse.harvard.edu/dataverse/ipsr-risp. \end{tabular}$

Supplementary material. The supplementary material for this article can be found at https://doi.org/10.1017/ipo.2025.6.

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