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Helping a Friend or Supporting a Cause? Disentangling Active and Passive Cosponsorship Decisions in the U.S. Congress

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Extended Abstract

Motivation and Findings. Expressing political support through the cosponsorships of bills is essential for the proper execution of parliamentary activities. In the US Congress, cosponsorships can be categorised as active and passive depending on bill's stage during which they are made. Active cosponsorships entail involvement in the bill's creation in its initial stages, including drafting the bill text or gathering support. As such, it can be classified as a more resource-intense form of support. In contrast, passive cosponsorships are issued after the introduction of a bill to the house floor and are therefore comparatively less resource-intense. So far, most studies only aimed to explain whether or not legislators cosponsor bills Kessler and Krehbiel (1996); Campbell (1982); Fowler (2006). This work demonstrates that active and passive cosponsorship is driven by two different motivations. Active cosponsorship is people-centric and primarily signals the backing of the *sponsor* of the bill. In contrast, passive cosponsorship is driven by backing a bill's *content*. This result result yields implication for studies in political science. For instance, alliance formation studies can analyze personal networks by considering the active consponsorships. Similarly, studies in position taking can focus on passive consporships to analyze the alignment between legislators and political issues. Our work makes the following contributions:

- We curate a data set containing information on all bills and speeches from the 112th to 115th U.S. Congress, which we make available.
- We develop a novel encoder enabling us to learn single embeddings from long documents, exceeding current token limitations of state-of-the-art models.
- We propose a Relational Graph Convolutional Network (RGCN) learning legislator representations accounting for (i) the speeches they give, (ii) the bills they sponsor and cosponsor, and (iii) the other legislators they cite in their speeches. We show that the resulting legislator embeddings proxy the legislators' ideological positions.
- We train our model using three tasks from the political science domain: (i) cosponsorship, (ii) authorship, and (iii) citation prediction. Through a rigorous ablation study, we show the substantial benefits of such a multi-task learning procedure for the first time in a social science application.
- Through our representation we disentangle the underlying motivations behind active and passive cosponsorship. Active cosponsorship relates primarily to the backing of the *sponsor* of a bill, whereas passive cosponsorship relates primarily to the backing of the *content* of a bill.
- Finally, our representations achieve state-of-the-art performance for voting prediction. This is remarkable, as our result comes from a zero-shot prediction, i.e., our representation has not been trained on any voting data. This further emphasizes the value of our legislator representation as a general proxy for legislators' ideology.

Data and Methods. We show an overview of our methodological approach in fig. 1a). We collect transcripts of legislator's speeches from congress.gov and bills' texts and (co)sponsors from propublica.com. In total, we build a dataset containing 85,100 congressional speeches and 508,538 active and passive cosponsorship events in 31,415 bills over a total of eight years (Congresses 112 to 115). After, we train our model to classify cosponsorship decisions based on the legislator and bill data described in the previous section. Our model consists of two main elements, an Encoder and a Relational Graph Convolutional Network (RGCN). The Encoder computes high dimensional representations of legislators' bills and speeches based on their texts and transcripts, respectively. These representations are used by an RGCN and a downstream Feed-Forward Neural Network (FFNN) allowing us to predict how (i.e., active or passive) a cosponsor supports a bill.

Results. We test our model against seven baselines for our primary task (i.e., active/passive cosponsorship prediction). By reaching an F1-score of 0.88 our model outperforms of 10% all the candidate baselines. Our legislator representations, learned during the training of our model, can be further used to study other legislative decisions, such as voting. To do so, we use an additional FFNN that takes as input the representations of legislators and bills to predict the vote of a legislator on a bill ("yea", "nay"). We compare the results of this model with four models directly trained for the task of voting predictions. Our model achieves an F1-score of 0.907. To avoid leakage of information we predict the voting decisions on bills that were not cosponsored by the legislator voting.

Discussion. Given that our representations can explain multiple legislators decisions, we can interpret them as a proxy of legislators' ideology. In fig. 1c we plot a two-dimensional projection (using TSNE) of our legislator representations. We find a clear split between Republican and Democrat legislators. Interestingly, Republican and Democrat party leaders are located at the center of their respective party. Moreover, we highlight the so-called "Blue Dog Caucus", the group of conservative Democrats who our representations place between Republicans and Democrats. Finally, the trained representations that we get from the speeches and bill texts provide insights into the motivation behind active and passive cosponsorship. 1b shows that active cosponsors have a stronger alignment to the bill's sponsor compared to the bill's content. In contrast, passive cosponsors are primarily aligned to the bill's content. Our results show that legislators in the U.S. Congress use active and passive cosponsorship as two different instruments, (i) active cosponsorship is used to support a colleague and (ii) passive cosponsorship serves to support the content of a bill. Thus, future studies can make use of these separate motivations and efforts legislators exhibit to support others in the legislative process.

References

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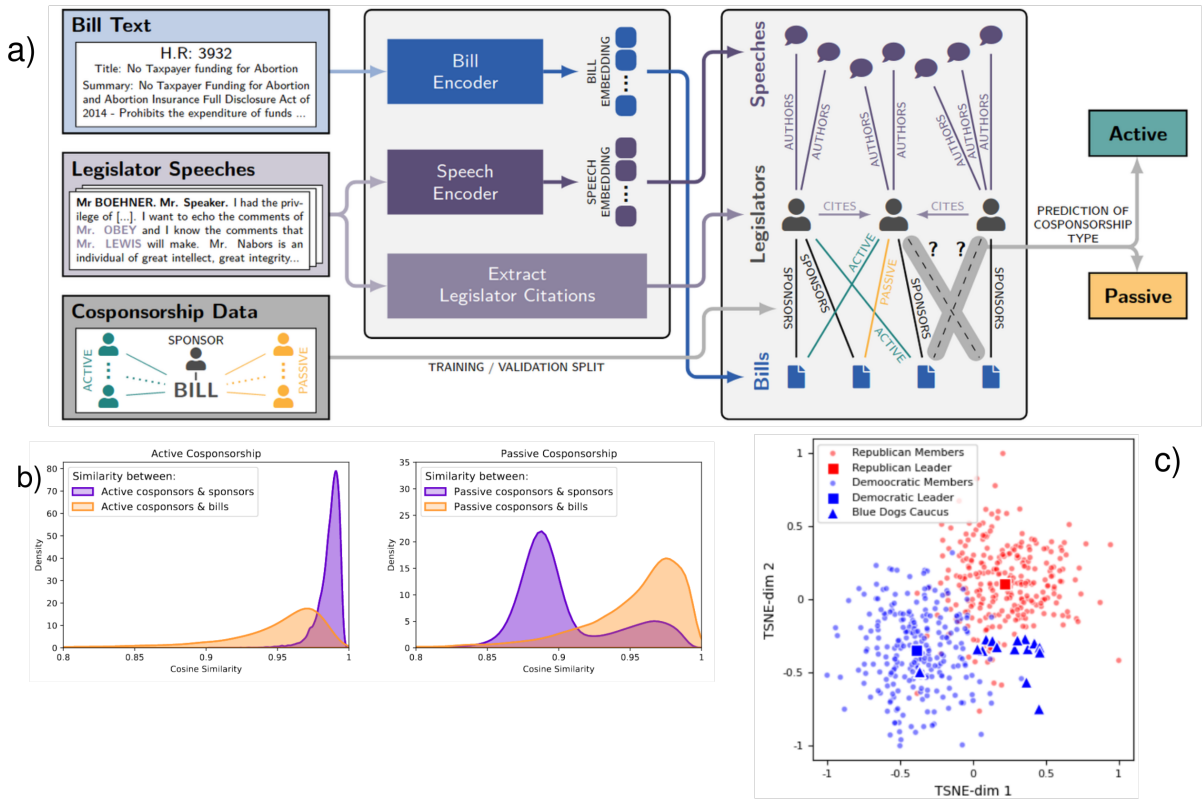

Figure 1: **a)** Overview of our methodological approach. **b)** Similarity in political alignment between cosponsors, sponsors, and bills. **c)** 2D ideological representations of legislators.