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Polarization Reconsidered: Bipartisan Cooperation through Bill Cosponsorship

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Although the literature on congressional change has established that the parties in Congress have become increasingly polarized over time, this conclusion is limited to the study of members' voting behavior. The analysis of another legislative practice, bill cosponsorship, reveals that while House members have associated increasingly with their same-party colleagues, senators continue to build bipartisan relationships through bill cosponsorship. I attribute this difference to the unique structure of each chamber and the influence that institutional rules and norms exert on legislators' decision-making processes. While House members rely on across-the-board party loyalty to get ahead, senators must maintain connections to colleagues from both parties in order to achieve their career goals.

Keywords *U.S. Congress; party polarization; bill cosponsorship; legislative networks; congressional development*

The traditional story of polarization in the U.S. Congress during the post-war period is a familiar one: members of the House of Representatives and the Senate have become sharply divided along party lines. Although this perspective is offered widely in media reports and the academic literature, we also occasionally hear stories about legislators who build strong working relationships with their partisan opponents. For example, in 2006 Senators John McCain (R-Ariz.) and Lindsey Graham (R-S.C.) worked with the late Senator Ted Kennedy (D-Mass.) to enact immigration reform, and McCain and Graham continued their efforts on immigration policy in 2013 as members of the bipartisan "Gang of Eight."[1] In 2009, Graham cosponsored an energy bill with Senators John Kerry (D-Mass.) and Joe Lieberman (I-Conn.) and worked with

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1. Seung Min Kim, "Senate Passes Immigration Bill," *Politico*, June 27, 2013, at http://www.politico.com/story/2013/06/immigration-bill-2013-senate-passes-093530.

President Obama on climate change.[2] In 2001, the White House tapped Senator Judd Gregg (R-N.H.) to work with Kennedy and Lieberman to reach a compromise on the No Child Left Behind Act, which led to the bill's passage. Finally, in 2012, amidst the squabbling over the weak economy and the debt crisis,[3] "a senior Republican, Sen. Saxby Chambliss (Ga.), even stopped by a fundraising event for a Democrat, Sen. Mark R. Warner (Va.), to show his support, an extremely rare display of bipartisanship during which the two promoted their work together on a substantial debt-reduction package." What do all of the Republicans mentioned here have in common? They are members of a group known as the Gingrich senators, a class of hyper-partisan Republicans who were elected to the House after 1978 and hence served in that chamber with Newt Gingrich.[4]

Another well-publicized example of bipartisan cooperation occurred during the 114th Congress (2015–16). Senators Cory Booker (D-N.J.) and Rand Paul (R-Ky.), freshmen from opposite sides of the ideological spectrum, introduced the REDEEM Act, legislation to reform the criminal justice system in a way that would cut government spending and make it easier for non-violent criminals eventually to secure a job.[5] The pair, joined by Senator Kirsten Gillibrand (D-N.Y.), also introduced a bill to end the federal prohibition on medical marijuana and expand access to patients who live in states where its use for medicinal purposes has been legalized.[6]

Likewise, in March 2015, Senator Mark Udall (D-N.M.) introduced the Frank R. Lautenberg Chemical Safety for the 21st Century Act, a compromise bill named for a former Democratic senator from New Jersey. While in office, Lautenberg spent ten years working with his fellow Democrats to update the 1976 Toxic Substances Control Act, "a landmark law that environmentalists, public health advocates and chemical companies all agree has failed to effectively regulate the tens of thousands of chemicals in use today."[7] His efforts went nowhere until he negotiated a deal with Senator David Vitter (R-La.) in 2013, two weeks before Lautenberg's death. Udall's bill is modeled after this agreement and would reform the Toxic Substances Control

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2. Jay Newton-Small, "Lindsey Graham: New GOP Maverick in the Senate," *Time*, December 23, 2009.

3. Paul Kane, "Farm Bill Politics Mutes Partisanship in Senate," *Washington Post*, June 20, 2012.

4. Sean Theriault, *The Gingrich Senators: The Roots of Partisan Warfare in Congress* (New York: Oxford University Press, 2013).

5. Seung Min Kim, "Paul, Booker Team Up for Justice," *Politico*, July 8, 2014, at http://www.politico.com/story/2014/07/cory-booker-rand-paul-team-up-108640.

6. Niraj Chokshi, "Sens. Booker, Gillibrand and Paul Unveil Federal Medical Marijuana Bill," *Washington Post*, March 10, 2015. Booker was even spotted having dinner with Senator Ted Cruz (R–Texas) in a Capitol Hill restaurant, stating that he plans to meet with all of his Republican colleagues in the Senate. He described the meeting with Cruz as a three-hour "intellectual discussion" in which the pair was "looking for common ground." See Tal Kopan, "Booker: My Dinner with Ted Cruz," *Politico*, March 20, 2014, at http://www.politico.com/story/2014/03/cory-booker-ted-cruz-dinner-104845.

7. Darren Goode, "Chemical Safety Bill Strains the Senate," *Politico*, November 12, 2015, at http://www.politico.com/story/2015/11/toxic-chemical-bill-lautenberg-environment-215703.

Act to "direct the Environmental Protection Agency (EPA) to base chemical safety regulations solely on health and safety risks, leaving out industry costs altogether."[8]

Hailed as a "bipartisan breakthrough," the Udall-Vitter bill is supported by industry advocates such as the American Chemistry Council, as well as green groups, including the Environmental Defense Fund.[9] While industry groups support the legislation because it creates predictability, makes it easier for businesses to follow federal safety standards, and restores consumer confidence in industry products, environmentalists applaud the bill's efforts to strengthen EPA oversight of industry and mandate safety reviews for all chemicals. Senator James Inhofe (R-Okla.), Chair of the Environment and Public Works Committee, which quickly held hearings on the bill and reported it out to the full chamber, expressed his commitment to steering the bill through to final passage.[10] The legislation had more than 55 Senate cosponsors, 35 of whom were Republicans. What is perhaps most interesting is that two of the bill's lead supporters (Vitter and Inhofe), one original cosponsor (Senator Mike Crapo, R-Idaho), and seven cosponsors (Senators Burr, Coats, Graham, Isakson, Roberts, Thune, and Wicker) are all Gingrich senators. Despite their disparate ideological positions, polarized voting patterns, and, in the case of Inhofe, well-publicized antics on the Senate floor,[11] these Gingrich senators and Democrats led by Udall worked together to iron out their differences and reach a compromise.[12] On December 17, 2015, the Senate passed the bill by voice vote with no debate, and the legislation is currently waiting on a vote from the House.[13]

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8. Lydia Wheeler, "Senators Push for Floor Vote on Chemical Reform Bill," *The Hill*, July 20, 2015, at http://thehill.com/regulation/248487-senators-push-for-floor-vote-on-chemical-reform-bill.

9. Goode, "Chemical Safety" (see note 7 above).

10. Wheeler, "Senators Push for Floor Vote" (see note 8 above).

11. Phillip Bump, "Jim Inhofe's Snowball Has Disproven Climate Change Once and For All," *Washington Post*, February 26, 2015.

12. Of the eleven Gingrich senators serving in the 114th Congress (2015–2016), John McCain (R-Ariz.) is the only member who has not signed on in support of Udall's bill. Additional recent examples of bipartisan Senate partnerships include collaborations between: Inhofe and Senator Barbara Boxer (D-Calif.) on the DRIVE Act, see Keith Laing, "Boxer 'Heartened' by House Highway Bill Markup," *The Hill*, October 14, 2015, at http://thehill.com/policy/transportation/256918-boxer-heartened-by-house-highway-bill-markup; between Senators Lamar Alexander (R-Tenn.) and Patty Murray (D-Wash.), Chair and Ranking Member of the Health, Education, Labor, and Pensions Committee, on the Every Child Achieves Act, a proposed overhaul of No Child Left Behind, see Lyndsey Layton and Emma Brown, "Senate Passes No Child Left Behind Rewrite, Would Shrink Federal Role," *Washington Post*, July 16, 2015); and between various pairs of female senators who have gotten to know each other during monthly dinners and experienced much success in terms of cosponsoring and passing more bipartisan bills compared to their male colleagues, see CBS News, "Female Senators Upending the Old Boys' Club," *CBS News.com*, July 31, 2015.

13. Eric Wolff, "Congress Gets Down to Omnitaxibusbender Business, Tees Up Speedy Votes," *Politico: Morning Energy*, December 18, 2015, at http://www.politico.com/tipsheets/morning-energy/2015/12/morning-energy-211840.

Although these anecdotes suggest that senators who are ideological opposites are often capable of finding common ground, these informal connections between legislators and their influence on the policy-making process are typically missed by academic studies of party polarization that rely solely on the analysis of roll call votes.[14] Moreover, if party polarization and animosity pervade Congress as thoroughly as the literature and media reports suggest, how do these collaborative relationships come about? Answering this question requires that scholars dig deeper than legislators' voting records and examine their personal networks, both formal and informal.

As a starting point, this article explores the extent of party polarization within the connections made by members of Congress through bill cosponsorship during the 96th through 110th Congresses (from 1979 to 2008). While roll call votes represent legislators' issue positions, the decision to cosponsor legislation can signify that a collaborative relationship or partnership exists between colleagues. Observing a legislator's pattern of cosponsorship across numerous bills captures the types of interactions, either partisan or bipartisan, in which they tend to engage over time. Approaching the study of party polarization from this angle reveals results that are unexpected based on the literature. First, I find that while party opponents in the House became more polarized in their cosponsorship behavior during recent decades, senators maintained what I call "50–50" cosponsorship networks in which about half of their connections were made with their same-party colleagues and half were made with their partisan opponents. This suggests that, although the Senate is deeply divided in terms of its members' voting decisions, this division does not pervade every aspect of daily life in the Senate.

Second, drawing on the congressional literature, which highlights inter-chamber differences in rules, procedure, and norms, I argue that the unique institutional context of the Senate requires senators to collaborate on policy – by cosponsoring each other's bills – in advance of a vote. To illustrate how these institutional differences play out in the practice of bill cosponsorship, I examine: (1) how a legislator's patterns of cosponsorship change when they move from the House to the Senate; and (2) how the cosponsorship patterns of the Gingrich senators compare to those of their Senate colleagues. I seek to discover whether or not legislators who served in the House prior to serving in the Senate practice similar patterns of cosponsorship in both chambers. I find that, rather than retaining the strict partisan loyalty they learned during their time in the House, newly elected senators adapt their cosponsorship behavior to fit the decision-making structure created by the institutional rules and norms of the upper chamber. This suggests that the organization and rules of the Senate may continue to foster a more

14. For a recent qualitative study of bipartisanship in Congress, see Ross K. Baker, *Is Bipartisanship Dead? A Report from the Senate* (Boulder, Colo.: Paradigm Publishers, 2015).

collaborative working environment compared to the House, despite recent polarization of voting behavior in the Senate.

Finally, the results presented here suggest that bipartisan collaboration exists even among the Gingrich senators.[15] Specifically, I find that while they maintain their reputations as aggressive partisan warriors in terms of their roll call voting, the Gingrich senators are often neither more nor less partisan than their Senate colleagues when it comes to their patterns of bill cosponsorship. This class of legislators represents perhaps the most rigorous test of the theory that, despite the prevalence of highly polarized voting behavior and public demonstrations of hyper-partisanship, the practice of finding common ground still occurs behind the scenes in the Senate. If the rules and norms of the chamber can mold Gingrich's former House protégés into senators capable of bipartisan cooperation, then the institution likely can influence almost anyone to collaborate across party lines.

While the study of roll call voting has taught us much about ideology and representation, it is important also to consider what goes on behind the scenes in Congress, and particularly the personal working relationships between members. This is especially important to our understanding of the legislative process in the Senate because, without a willingness to collaborate in some capacity, it is highly unlikely that a bill will reach the floor for a vote. Contrary to the popular narrative that "Congress is broken," I argue that the structure, rules, and norms of the U.S. Senate shape senators' cosponsorship behavior and lead them to consistently make connections with members across the aisle. Measuring party polarization in bill cosponsorship, I find that bipartisan collaboration, at least in the Senate, is alive and well, a conclusion that is contrary to the existing literature and that suggests avenues for future research.

Traditional Explanations of Party Polarization in Congress

The traditional view of polarization in Congress is that legislators in both the House and the Senate have become sharply divided along party lines over time. This movement is often measured using standardized scores, known as DW-NOMINATE scores, that calculate each legislator's ideological position on a scale from −1 (extremely liberal), to +1 (extremely conservative) based on the roll call votes they cast during each congressional session.[16] Since the late 1970s, the ideological distance between the parties has grown steadily. From 1977 to 2014, the mean

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15. Theriault, *The Gingrich Senators* (see note 4 above).

16. For an explanation of congressional party polarization and these scores, see Nolan McCarty, Keith Poole, and Howard Rosenthal, *Polarized America: The Dance of Ideology and Unequal Riches* (Cambridge, Mass.: MIT Press, 2006); Keith Poole and Howard Rosenthal, *Ideology and Congress*, 2nd rev. ed. (New Brunswick, N.J.: Transaction Publishers, 2012); and Christopher Hare, "Polarization in Congress Has Risen Sharply: Where Is It Going Next?" *Washington Post*, February 13, 2014.

DW-NOMINATE score for House Republicans increased from 0.2 to over 0.7 on the –1 to +1 scale. Among House Democrats, by contrast, the mean was basically stable, decreasing only slightly from about –0.3 to about –0.4 during this time period. In the Senate, the pattern of change was similar. The mean ideological score for Republicans increased from about 0.25 to nearly 0.6, while the mean for Democrats decreased only slightly, from –0.3 to –0.4, over the same period.[17] These changes in the mean ideological placement of the parties shows that the distance between the parties in Congress has increased because Republicans have become more conservative in terms of their roll call voting.

Some scholars explain this trend by pointing to partisan realignment in the electorate. Since the 1960s, many voters have changed their party identification and "sorted" themselves into the political party that better represents their ideology; today, liberals primarily identify as Democrats, and conservatives as Republicans. A result of these changes in the behavior and distribution of voters has been the development of homogeneous and polarized party bases.[18] Other scholars suggest that, in recent years, voters have elected fewer moderate candidates to Congress, choosing instead to "replace" members of the ideological middle with those who are more loyal to their party.[19] Some have argued that societal changes, such as the growth of income inequality, have exacerbated party polarization by placing the interests of low and high income citizens, represented by the Democratic and Republican parties, respectively, into direct competition with one another.[20] Most recently, Sean Theriault has found that the highly polarized atmosphere of the House spread to the Senate with the election of the Gingrich senators.[21] These Republicans, who were elected to the House after 1978, took their hyper-partisan behavior with them when they moved to the Senate, transforming the institution in the process. Finally, other scholars have

17. For the most recent estimates of party polarization in the House and Senate, visit Poole and Rosenthal's website at http://www.voteview.com.

18. Gary Jacobson, "Party Polarization in National Politics: The Electoral Connection," in *Polarized Politics: Congress and the President in a Partisan Era*, ed. Jon R. Bond and Richard Fleisher (Washington, D.C.: CQ Press, 2000); Jeffrey M. Stonecash, Mark D. Brewer, and Mack D. Mariani, *Diverging Parties: Social Change, Realignment, and Party Polarization* (Boulder, Colo.: Westview Press, 2003); Matthew Levendusky, *The Partisan Sort: How Liberals Became Democrats and Conservatives Became Republicans* (Chicago: University of Chicago Press, 2009), 38–77; Daniel M. Butler, "The Effect of the Size of Voting Blocs on Incumbents' Roll-Call Voting and the Asymmetric Polarization of Congress," *Legislative Studies Quarterly* 34 (August 2009): 297–318; Sean Theriault, *Party Polarization in Congress* (New York: Cambridge University Press, 2008). Recent work has also shown that individuals have tended to move to communities with more like-minded residents; see, for example, Bill Bishop, *The Big Sort: Why Clustering of Like-minded America Is Tearing Us Apart* (Boston: Houghton Mifflin, 2008).

19. Richard Fleisher and Jon R. Bond, "The Shrinking Middle in Congress," *British Journal of Political Science* 34 (July 2004): 429–51; Keith Poole and Howard Rosenthal, "The Polarization of American Politics," *Journal of Politics* 46 (November 1984):1061–79; Sean Theriault, "Party Polarization in the U.S. Congress: Member Replacement and Member Adaptation," *Party Politics* 12 (July 2006): 483–503.

20. James C. Garand, "Income Inequality, Party Polarization, and Roll-call Voting in the U.S. Senate," *Journal of Politics* 72 (October 2010): 1109–28; McCarty, et al., *Polarized America* (see note 16 above).

21. Theriault, *The Gingrich Senators* (see note 4 above).

used the method of social network analysis to provide a richer picture of party polarization in the House and Senate, measured using roll call votes.[22]

Because these studies measure polarization using only roll call votes, they do not illustrate or explain the numerous interactions among members that take place before a bill reaches the floor. By studying which legislators work together in advance of voting, we can begin to uncover details about the working relationships (from bipartisan to highly polarized) that are formed throughout the legislative process in each chamber.

Polarization Reconsidered: House and Senate Differences

Institutional differences between the House and Senate are widely demonstrated in the literature.[23] What is also well-known is that the institutional structures of each chamber can produce different outcomes in members' behavior. First, the House exhibits a relatively rigid hierarchy consistent with the Conditional Party Government model.[24] With power resting solidly in the hands of the Speaker and the majority leadership, the chamber is highly structured and there is little uncertainty about how the legislative process will play out on a day-to-day basis, making it relatively easy for members to make sense of their roles.[25] In addition, House members spend most of their two-year terms focused on winning re-election rather than on building relationships with each other.[26] Beginning during freshmen orientation, they are taught that "each side socializ[es] only with like-minded members…[and] compromise equate[s] to selling out to the 'enemy.' "[27] This provides few opportunities to

22. See, for example, James Moody and Peter J. Mucha, "Portrait of Political Party Polarization," *Network Science* 1 (April 2013): 119–21; Andrew Scott Waugh, et al., "Party Polarization in Congress: A Social Network Approach," working paper, 2009, at http://jhfowler.ucsd.edu/party_polarization_in_congress.pdf.

23. See, for example, Ross K. Baker, *House and Senate* (New York: W.W. Norton & Company, 2008); David W. Brady and Matthew D. McCubbins, *Party, Process, and Political Change in Congress* (Stanford, Calif.: Stanford University Press, 2002); Roger H. Davidson, et al., *Congress and Its Members* (Washington, D.C.: CQ Press, 2014); Lawrence C. Dodd, "Making Sense Out of Our Exceptional Senate: Perspectives and Commentary," in *U.S. Senate Exceptionalism*, ed. Bruce I. Oppenheimer (Columbus: The Ohio State University Press, 2002), 325–38; Steven S. Smith and Gerald Gamm, "The Dynamics of Party Government in Congress," in *Congress Reconsidered*, 9th ed., ed. Lawrence C. Dodd and Bruce I. Oppenheimer (Washington, D.C.: CQ Press, 2009),141–64; Charles Stewart, III, *Analyzing Congress*, 2nd ed. (New York: W.W. Norton, 2011).

24. John Aldrich and David Rohde, "The Logic of Conditional Party Government: Revisiting the Electoral Connection," in *Congress Reconsidered*, 7th ed., ed. Lawrence C. Dodd and Bruce I. Oppenheimer (Washington, D.C.: CQ Press, 2001), 269–92; David Rohde, *Parties and Leaders in the Postreform House* (Chicago: University of Chicago Press, 1991).

25. Dodd, "Making Sense" (see note 23 above).

26. Eric Uslaner, "Is the Senate More Civil than the House?" in *Esteemed Colleagues*, ed. Burdett Loomis (Washington, D.C.: Brookings, 2000), 32–55, at 35–36.

establish connections with members of the opposing party,[28] and legislators find little reason to stray from their party's path because following these norms in the House is an effective way to achieve their individual goals.

In the Senate, power is retained by the full membership on the floor, rather than "being lodged disproportionately in party leadership or in standing committees."[29] Senators seeking to pass legislation face obstacles such as the filibuster, the need for unanimous consent agreements, and non-germane amendments, which create an unpredictable working environment and give rank-and-file senators the power to obstruct. This fits a "collegial pattern," rather than one dominated by a hierarchy,[30] and forces senators of both parties to work together before bringing legislation to a vote.[31] Furthermore, with only one hundred members and six-year terms, it is easier for senators to get to know their colleagues. These connections, which can develop into friendships or even "kinships," are "based upon a track record of trust derived from shared experiences…[and] enable senators to save time in gathering information and cues and reduce transaction costs in their dealings with colleagues."[32] During Senate orientations, new members associate with senators from both parties and are instructed in the importance of maintaining bipartisan working relationships.[33] I draw on the existing literature that highlights these differences between the House and Senate to explain the variation in the patterns of bill cosponsorship among legislators in each chamber.

Why Cosponsorship?

As an alternative to studying congressional voting behavior, I examine the extent to which party polarization has developed in legislators' patterns of bill

27. John Carney and Jim Renacci, "A Bipartisan Path for Congress," *Washington Post*, November 18, 2011.

28. Daniel Lipinski, "Navigating Congressional Policy Processes: The Inside Perspective on How Laws are Made," in *Congress Reconsidered*, 9th ed., 337–60, at 344 (see note 23 above).

29. Smith and Gamm, *Dynamics*, 144 (see note 23 above).

30. Ibid.

31. Dodd, "Making Sense" (see note 23 above); Jeffery A. Jenkins, "The Evolution of Party Leadership," in *The Oxford Handbook of the American Congress*, ed. George C. Edwards, Frances E. Lee, and Eric Schickler (New York: Oxford University Press, 2011); Barbara Sinclair, "The 60-Vote Senate," in *U.S. Senate Exceptionalism*, 241–61 (see note 23 above); Barbara Sinclair, *Party Wars: Polarization and the Politics of National Policy Making* (Norman: University of Oklahoma Press, 2006).

32. Ross Baker, *Friend and Foe in the U.S. Senate* (La Jolla, Calif.: Copley, 1999), 7. For more on the importance of legislators' friendships, see Gregory Caldeira and Samuel Patterson, "Political Friendship in the Legislature," *Journal of Politics* 49 (November 1987): 953–75.

33. Richard Baker, *The New Members' Guide to Traditions of the U.S. Senate* (Washington, D.C.: GPO, 2006), 2; Robert Byrd, "Remarks by Senator Byrd at the Orientation of New Senators," *United States Senate*, December 3, 1996, at http://www.senate.gov/artandhistory/history/common/generic/Feature_Homepage_ByrdOrientation.htm.

cosponsorship. The importance of bill cosponsorship as a legislative tool has been well-established in the literature,[34] and legislators and their staff invest significant time recruiting colleagues to cosponsor their bills using personal contacts and "Dear Colleague" letters.[35] While some cosponsorships reflect support for a non-controversial piece of legislation, such as a bill honoring an athlete or recognizing a war hero, often soliciting cosponsorships requires social interaction and collaboration among members,[36] perhaps through conversations held following a committee hearing or markup or on the floor during a vote. In many cases, agreeing to cosponsor a bill is an indication that legislators trust one another.[37]

Moreover, recent work has found that examining patterns of bill cosponsorship across congressional sessions ("congresses") is necessary in order to understand the extent of legislative cooperation that goes on behind the scenes. Specifically, although roll call voting studies have consistently found that the level of party polarization has increased over time in the House and Senate, the agenda set by the House majority party leadership has exacerbated the appearance of polarization by prioritizing highly partisan bills over those that present an opportunity for bipartisan cooperation (and would result in bipartisan votes).[38] As a result, studies that focus solely on roll call voting patterns fail to capture the bipartisan nature of the negotiation process – measured by the analysis of bill cosponsorship – that takes place before the leadership selects which bills will go to the floor.

Cosponsorship can also be used as a signaling device to influence other legislators,[39] and it can be affected by a variety of individual,

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34. See, for example, William Bernhard and Tracy Sulkin, "Commitment and Consequences: Reneging on Cosponsorship Pledges in the U.S. House," *Legislative Studies Quarterly* 38 (November 2013): 461–87; James Campbell, "Cosponsoring Legislation in the U.S. Congress," *Legislative Studies Quarterly* 7 (August 1982): 415–22; James Fowler, "Connecting the Congress: A Study of Cosponsorship Networks," *Political Analysis* 14 (June 2006): 456–87; James Fowler, "Legislative Cosponsorship Networks in the U.S. House and Senate," *Social Networks* 28 (October 2006): 454–65; Daniel Kessler and Keith Krehbiel, "Dynamics of Cosponsorship," *American Political Science Review* 90 (September 1996): 555–66; Gregory Koger, "Position Taking and Cosponsorship in the U.S. House," *Legislative Studies Quarterly* 28 (May 2003): 225–46.

35. Campbell, "Cosponsoring Legislation" (see previous note).

36. Kathleen Bratton and Stella Rouse, "Networks in the Legislative Arena: How Group Dynamics Affect Cosponsorship," *Legislative Studies Quarterly* 36 (August 2011): 423–60; Wendy Tam Cho and James Fowler, "Legislative Success in a Small World: Social Network Analysis and the Dynamics of Congressional Legislation," *Journal of Politics* 72 (January 2010): 124–35; Lipinski, "Navigating" (see note 28 above).

37. Fowler, "Legislative Cosponsorship Networks" (see note 34 above).

38. Laurel Harbridge, *Is Bipartisanship Dead? Policy Agreement and Agenda-setting in the House of Representatives* (New York: Cambridge University Press, 2015).

39. Kessler and Krehbiel, "Dynamics of Cosponsorship" (see note 34 above); Michelle Swers, *Women in the Club: Gender and Policy Making in the Senate* (Chicago: University of Chicago Press, 2013); Rick Wilson and Cheryl Young, "Cosponsorship in the U.S. Congress," *Legislative Studies Quarterly* 22 (February 1997): 25–43.

electoral, and institutional factors.[40] The ability to establish a network of supportive colleagues often determines one's capacity in the policy-making process,[41] and evidence suggests that legislators who are "better connected" through bill cosponsorship are more successful in passing their amendments to bills.[42] I argue that the pattern of bill cosponsorship across a legislator's tenure sheds light on a number of important characteristics, including their willingness to work with members of the other party.[43]

Some research on bill cosponsorship has begun to identify inter-chamber differences in the personal networks of legislators. For example, scholars have found that Congress possesses the qualities of a "small-world network,"[44] where "the Senate cosponsorship network is much more densely interconnected than the House."[45] While most House members are typically connected through cosponsorship to less than 25% of their colleagues, most senators are connected to more than 75% of their fellow senators. Another study of cosponsorship networks illustrates that while party polarization increased in both the House and the Senate from the 98th through 104th Congresses (1983–1996), it diminished slightly during the 106th Congress (1999–2000), and the reduction in polarization during the 1990s and 2000s was larger in the Senate than in the House.[46] Although these scholars note that there are important differences in the cosponsorship networks formed in each chamber of Congress, they do not offer a clear explanation of those differences. By contrast, in this article, I present evidence

40. Bratton and Rouse, "Networks in the Legislative Arena" (see note 36 above); Joseph Cooper and Cheryl Young, "Bill Introduction in the Nineteenth Century: A Study of Institutional Change," *Legislative Studies Quarterly* 14 (February 1989): 67–105; Koger, "Position Taking" (see note 34 above); James C. Garand and Kelly Burke, "Legislative Activity and the 1994 Republican Takeover," *American Politics Research* 34 (March 2006): 159–88; Brian Harward and Kenneth Moffett, "The Calculus of Cosponsorship in the U.S. Senate," *Legislative Studies Quarterly* 35 (February 2010): 117–43; Michael Rocca and Gabriel Sanchez, "The Effect of Race and Ethnicity on Bill Sponsorship and Cosponsorship in Congress," *American Politics Research* 36 (January 2008): 130–52.

41. Lipinski, "Navigating" (see note 28 above).

42. Fowler, "Connecting the Congress" (see note 34 above); Fowler, "Legislative Cosponsorship Networks" (see note 24 above); Cho and Fowler, "Legislative Success" (see note 36 above).

43. Recently, the Lugar Center, a think tank founded by former Senator Richard Lugar (R–Ind.), released a Bipartisan Index that ranks members of Congress based on how frequently they cosponsor together. The Center provides two reasons for using cosponsorship as a measure of bipartisanship: "First, they allowed us to construct a highly objective measure of partisan and bipartisan behavior. Second, sponsorship and co-sponsorship behavior is especially revealing of partisan tendencies. Members' voting decisions are often contextual and can be influenced by parliamentary circumstances. Sponsorships and co-sponsorships, in contrast, exist as very carefully considered declarations of where a legislator stands on an issue." See Richard Lugar, "Senator Lugar's Introduction to the Bipartisan Index," *The Lugar Center*, 20 May 2015, at http://www.thelugarcenter.org/ourwork-Bipartisan-Index.html.

44. Cho and Fowler, "Legislative Success" (see note 36 above); Duncan J. Watts and Steven H. Strogatz, "Collective Dynamics of 'Small-World' Networks," *Nature* 393 (June 1998): 440–42.

45. Fowler, "Connecting the Congress," 460 (see note 34 above).

46. Yan Zhang et al., "Community Structure in Congressional Cosponsorship Networks," *Physica A* 387 (March 1, 2008): 1705–12.

indicating that while patterns of bill cosponsorship in the House have polarized since the 1970s, U.S. senators continue to establish bipartisan connections with their colleagues through bill cosponsorship, despite the increasing party polarization in roll call voting that has taken place in both chambers of Congress. I explain this difference by connecting my findings on bill cosponsorship with the broader literature on the institutional differences between the House and Senate.

Measuring the (Bi)Partisan Nature of Cosponsorships

To investigate bill cosponsorship, I use a database compiled by James Fowler and his colleagues that uses the Library of Congress's THOMAS database on congressional activity. They collected data on all public and private bills, resolutions, and amendments introduced in the House and Senate during the 93rd through the 110th Congresses (from 1973 to 2008).[47] Although private bills and amendments receive fewer cosponsorships relative to public bills, Fowler includes them "because each document that has a sponsor and a cosponsor contains information about the degree to which legislators are socially connected.... In general, the observation that a piece of legislation of any type has a cosponsor is in and of itself a latent indicator of its importance."[48] Because cosponsorship was not allowed in the House until the 91st Congress (1969–1970) and was restricted to 25 cosponsors per bill until the 96th Congress (1979–1980), I limit my analysis to the 1979–2008 period in order to ensure that cosponsorship rules (and the potential for building relationships through cosponsorship) are the same across all Congresses in the study.[49]

To construct a measure of the connections established through bill cosponsorship, I focus on the partisan nature of the complete set of relationships entered into by each legislator. I create two composite measures that serve as the dependent variables in the analysis. First, *total network partisanship* is defined as the percentage of same-party colleagues to whom a legislator is connected through cosponsorship. In other words, of all the people to whom a legislator is connected through incoming and outgoing cosponsorships, what percentage of them are members of the legislator's own party?[50] For example, during the 107th Congress (2001–2002),

47. Fowler, "Connecting the Congress"; Fowler, "Legislative Cosponsorship Networks" (see note 34 above for both sources).

48. Fowler, "Connecting the Congress," 460 (see note 34 above).

49. For more on the basic characteristics of bill cosponsorship, see ibid., Table 1.

50. For any given legislator, a cosponsorship can be given (outgoing) or it can be received (incoming). An outgoing cosponsorship may represent a legislator's position on an issue, an intention to help a trusted colleague, a signal that the bill is "worthy" of passage, or an attempt to win the favor of a party leader. Incoming cosponsorships indicate the sources of a legislator's support: from whom does this legislator receive support, or who trusts and respects this legislator? Although considering the direction of the cosponsorship tie is outside the scope of this study, it should be considered in future research.

Representative Nancy Pelosi cosponsored 447 bills that were written by 180 of her House colleagues; 128 of these individuals were her fellow Democrats. Of the 13 bills that Pelosi authored, she received at least one cosponsorship from 170 of her House colleagues; 154 of these cosponsors were fellow Democrats. Therefore, her *total network partisanship* value for the 107th Congress is 80.6%, or (128 + 154) divided by (180 + 170).

Second, *total cosponsorship partisanship* is defined as the number of cosponsorships that connect a legislator to one of their fellow party members, as a percentage of all cosponsorships given and received by the legislator. This represents the extent to which a legislator chooses to work with their same-party colleagues during a given Congress. Returning to the previous example, Pelosi cosponsored 447 bills during the 107th Congress (of which 351 were written by her Democratic colleagues); she also received 251 cosponsorships (of which 234 came from her fellow partisans) on the 13 bills she authored. Therefore, Pelosi's measure of *total cosponsorship partisanship* for the 107th Congress is 83.8%, or (351+234) divided by (447+251).

In short, *total network partisanship* allows us to focus on the relationships (either partisan or bipartisan) established among the individuals serving in each Congress, while *total cosponsorship partisanship* helps us to account for how frequently legislators cosponsor each other's bills.[51]

Hypotheses

This research proceeds in three parts. First, I test the hypothesis that bill cosponsorship patterns vary by chamber of Congress. Based on work suggesting that the hierarchical structure of the House leads its members to rely more on party loyalty, while the fluid structure of the Senate encourages its members to utilize informal strategies of networking,[52] I expect that:

> **Hypothesis 1:** During the 96th through 110th Congresses (1979–2008), *total network partisanship*, or the percentage of same-party House members to whom each legislator is connected through cosponsorship, has increased. Likewise, *total cosponsorship partisanship*, or the percentage of cosponsorships that connect same-party House members, has also increased.

51. Although other scholars who study bill cosponsorship patterns in Congress have used Fowler's data, as far as I know, no other researchers have measured "cosponsorship networks" or "cosponsorship partisanship" using the percentage of partisan cosponsors (or cosponsorships) the way the measures are used in this article.

52. Dodd, "Making Sense" (see note 23 above).

> **Hypothesis 2:** During the 96th through 110th Congresses (1979–2008), bill cosponsorship patterns in the Senate have not reflected the increase in party polarization observed in patterns of Senate roll call votes. Instead, senators have continued to cosponsor bills with approximately equal numbers of their same-party and opposite-party colleagues.

Second, with the rise of party government in the House, lawmakers have learned that practicing party loyalty can help them achieve their goals. Having learned this hyper-partisanship during their House service, how do former House members behave when they are elected to the Senate? To answer this, I compare the cosponsorship patterns of senators, controlling for whether or not they previously served in the House. If senators with prior House experience exhibit more partisan patterns of bill cosponsorship compared to senators with no House service, this would suggest that the patterns of behavior learned in the House stay with members when they move to the Senate. However, I expect that former House members will associate primarily with their same-party colleagues once they enter the Senate only if this helps them achieve their goals in the new chamber. Because the literature suggests that the two chambers exert different pressures on legislative behavior, I expect that these legislators replace their past decision-making processes with more bipartisan patterns of cosponsorship that meet the needs of the Senate's more fluid structure. Therefore, I embrace the null hypothesis:

> **Hypothesis 3:** During the 96th through 110th Congresses (1979–2008), senators with prior House experience will not be significantly different from their colleagues who were elected directly to the Senate, in terms of their total network and cosponsorship partisanship.

For the next analysis, I include only senators with prior House service. Given the existing literature on House-Senate institutional differences, I expect that legislators who have served in both chambers will have practiced more partisan cosponsorship behavior while serving in the House and later moderated their cosponsorship choices to include more of their partisan opponents when they served in the Senate. Such a pattern would reflect the influence that House and Senate rules, procedures, and norms exert on members during their service in each chamber. Moreover, this should rule out the possibility that bipartisan cosponsorship is an individual-level proclivity in which people who are simply more inclined to be bipartisan self-select into the Senate. If a self-selection bias were present, the individuals in this analysis would exhibit moderate cosponsorship behavior during both periods of their service in Congress (House and Senate). However, I do not expect this to be the case. Instead, I offer the following hypothesis:

> **Hypothesis 4:** Examining the cosponsorship patterns of legislators who served in the House and were later elected to the Senate during the 96th through 110th Congresses (1979–2008), I expect that the mean values on both measures of partisanship will be higher (i.e., more partisan) during their service in the House compared to the values on both measures for their service in the Senate.

As a final test, I observe patterns of cosponsorship among the Gingrich senators. To be classified as a Gingrich senator, a legislator must have served in the House and subsequently in the senate; he must be Republican; and he must have been elected to the House after 1978, the year during which former Representative (and former Speaker) Newt Gingrich was elected. Theriault argues that "the experience of these representatives serving in the House…exert[s] a real and substantial effect on their voting behavior in the Senate."[53] As a result, "the increasing party polarization in the Senate since the 1970s lies overwhelmingly at the feet of previous House Republican members who started serving in the House after 1978."[54] A list of the 33 Gingrich senators is included in Table 1.[55]

Theriault clearly shows that the Gingrich senators vote differently than their Senate colleagues, including their fellow (non-Gingrich) Republican senators. [56] The final analysis here tests whether or not the hyper-partisan patterns of voting practiced by the Gingrich senators extend to their bill cosponsorship. If Senate structure influences legislators' cosponsorship behavior in the ways that I have argued, we would expect these effects to be exerted on all senators, including the Gingrich senators. Therefore, the final hypothesis again embraces the null hypothesis:

> **Hypothesis 5:** Despite their unique voting patterns, the Gingrich senators practice patterns of bill cosponsorship that are neither more nor less partisan than those practiced by their fellow senators, Republicans and Democrats, alike.

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53. Sean Theriault and David Rohde, "The Gingrich Senators and Party Polarization in the U.S. Senate," *Journal of Politics* 73 (October 2011): 1011–24.

54. Ibid., 1019.

55. This table has been adapted from Table 1 in Theriault and Rohde, "The Gingrich Senators" (see note 53 above). While Theriault's book, *The Gingrich Senators* (see note 4 above), includes an updated list of 40 Gingrich senators, the seven additions were first elected to the Senate during either the 111th or 112th Congress (i.e., in either 2008 or 2010); these Congresses are beyond the scope of the data used in this analysis.

56. "Non-Gingrich Republicans" refers to Republican senators who either were elected to the House in 1978 or earlier before moving to the Senate or were elected directly to the Senate without previously serving in the House.

Table 1
The Gingrich Senators

Name	State	Congresses served in Senate	Congresses served in House of Representatives
Allard	Colorado	105th-110th	102nd-104th
Allen	Virginia	107th-109th	102nd
Brown	Colorado	102nd-104th	97th-101st
Brownback	Kansas	105th-111th	104th
Bunning	Kentucky	106th-111th	100th-105th
Burr	North Carolina	109th-present	104th-108th
Chambliss	Georgia	108th-113th	104th-107th
Coats	Indiana	101st-105th, 112th-present	97th-100th
Coburn	Oklahoma	109th-113th	104th-106th
Craig	Idaho	102nd-110th	97th-101st
Crapo	Idaho	106th-present	103rd-105th
DeMint	South Carolina	109th-112th	106th-108th
DeWine	Ohio	104th-109th	98th-101st
Ensign	Nevada	107th-112th	104th-105th
Graham	South Carolina	108th-present	104th-107th
Gramm	Texas	99th-107th	98th
Grams	Minnesota	104th-106th	103rd
Gregg	New Hampshire	103rd-111th	97th-100th
Hutchinson	Arkansas	105th-107th	103rd-104th
Inhofe	Oklahoma	104th-present	100th-103rd
Isakson	Georgia	109th-present	106th-108th
Kyl	Arizona	104th-112th	100th-103rd
Mack	Florida	101st-106th	98th-100th
McCain	Arizona	100th-present	98th-99th
Roberts	Kansas	105th-present	97th-104th
Santorum	Pennsylvania	104th-109th	102nd-103rd
Smith	New Hampshire	102nd-107th	99th-101st
Sununu	New Hampshire	108th-110th	105th-107th
Talent	Missouri	108th-109th	103rd-106th
Thomas	Wyoming	104th-110th	101st-103rd
Thune	South Dakota	109th-present	105th-107th
Vitter	Louisiana	109th-present	106th-108th
Wicker	Mississippi	110th-present	104th-110th

Note: Gramm was first elected as a Democrat to the 96th Congress (1979–1980). In January 1983, he resigned his seat, switched parties, and won re-election as a Republican. The data include only his service as a Republican.
Source: Sean Theriault and David Rohde, "The Gingrich Senators and Party Polarization," 1017 (see note 53 above).

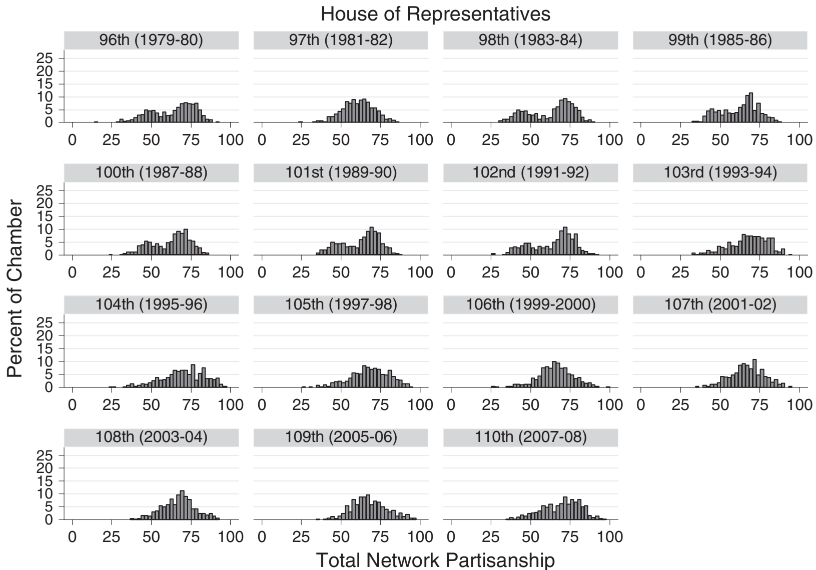
Results

Party Polarization in Bill Cosponsorship: House and Senate Differences

Graphing the distributions of *total network partisanship* for each chamber reveals that the parties in the House have polarized, while those in the Senate have not. In the figures below, the *x*-axes range from 0 percent (no cosponsors were fellow partisans) to 100% (all cosponsors were fellow partisans). First, consider the House. Figure 1a illustrates the growing levels of party loyalty in bill cosponsorship exhibited in the House during the 96th through 110th Congresses (1979–2008), and the mode of the data increases over time. During the 96th through 102nd Congresses (1979–1992), the distributions are bimodal. The larger cluster of legislators falls at the more partisan end of the distribution; of the cosponsors connected to these individuals, about 60–80% were members of their own party. House members in the smaller cluster maintained more bipartisan cosponsorship networks during these years. Beginning in the 103rd Congress (1993–1994), the bimodal pattern disappears; by the 110th Congress (2007–2008), a majority of House members fall around the 75% partisan mark.

Figure 1a

Distribution of Total Network Partisanship Values in the House, by Congress



These observations fit with the traditional polarization argument, and in the House, bill cosponsorship associations seem to have gone the same way as roll call voting patterns.

The results for the Senate, however, are very different (see Figure 1b). The less partisan group tends to have cosponsorship networks in which fewer than half of the members are fellow partisans; members of the more partisan group have networks in which 50–60% are fellow partisans. As with the House, the bimodal nature of the distribution disappears during the 104th through 110th Congresses (1995–2008); unlike the House, the new mode for the Senate sits only slightly above 50%.

This demonstrates an important inter-chamber difference: senators' networks have not moved in tandem with the networks of House members over the last thirty years. Rather than gradually shifting toward the highly partisan range as they did in the House, senators have continued to build cosponsorship relationships with almost equal numbers of their fellow partisans and partisan opponents. Moreover, the results of a mean comparison test (see Table 2) indicate that, for each Congress studied, the mean *total network partisanship* value for the House is significantly higher than the value for the Senate ($p<0.001$), and the difference between the

Figure 1b

Distribution of Total Network Partisanship Values in the Senate, by Congress

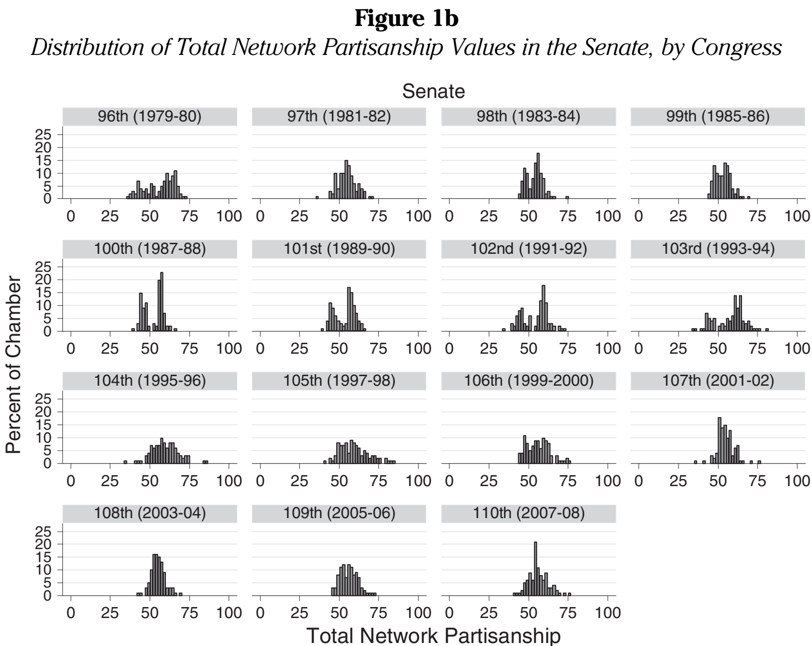


Table 2

Mean Comparison Test of House and Senate Total Network Partisanship

Congress (years)	*N* in Senate	*N* in House	Senate mean	House mean	Senate-House difference	p-value
96th (1979–1980)	101	440	56.39	63.88	–7.49	0.000
97th (1981–1982)	101	440	55.03	60.86	–5.83	0.000
98th (1983–1984)	101	439	53.89	62.93	–9.04	0.000
99th (1985–1986)	100	439	53.38	62.06	–8.68	0.000
100th (1987–1988)	101	441	52.61	62.26	–9.65	0.000
101st (1989–1990)	100	447	53.70	62.52	–8.82	0.000
102nd (1991–1992)	101	442	54.37	63.92	–9.55	0.000
103rd (1993–1994)	101	442	57.91	67.91	–10.00	0.000
104th (1995–1996)	101	438	59.58	70.23	–10.65	0.000
105th (1997–1998)	100	444	59.66	68.04	–8.38	0.000
106th (1999–2000)	102	442	56.19	65.78	–9.59	0.000
107th (2001–2002)	101	446	55.01	67.09	–12.08	0.000
108th (2003–2004)	100	443	55.27	67.24	–11.97	0.000
109th (2005–2006)	100	443	56.30	67.92	–11.62	0.000
110th (2007–2008)	101	450	56.00	69.44	–13.44	0.000

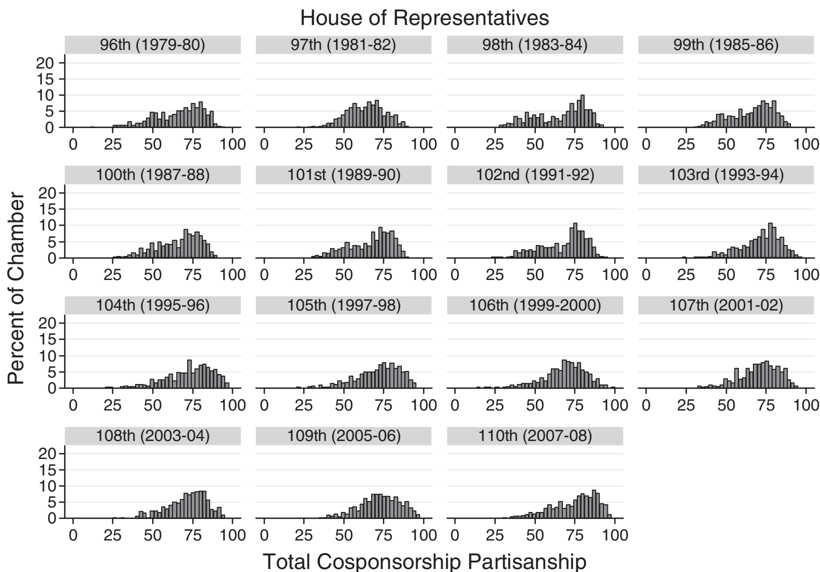
Note: Significance tests are two-tailed.
Source: Data from Library of Congress, 1979–2008.

chamber means grows over time. This is contrary to what we would expect given the literature showing that both the House and Senate have become more polarized over time (see notes 16–19 above). While the parties have polarized in terms of their roll call voting, the evidence presented here in support of Hypotheses 1 and 2 indicates that the trend in bill cosponsorship patterns is different from roll call voting patterns, at least in the Senate.

Using the measure of *total cosponsorship partisanship* provides further support for Hypothesis 1 (see Figure 2a). Over time, the percentage of cosponsorship connections made with same-party colleagues has increased sharply. By the 110th Congress (2007–2008), a majority of House members had 75–90% of their cosponsorships with fellow partisans. Note that the *network partisanship* ranges for the House (60–80%) are slightly lower than the *cosponsorship partisanship* ranges (70–90%). This suggests that, as House members' cosponsorship *networks* have become increasingly more partisan, they have also tended to cosponsor *bills* more frequently with their fellow partisans. Essentially, the polarization that has occurred in the House is two-fold: legislators have been establishing cosponsorship connections to a larger proportion of their same-party colleagues *as well as*

Figure 2a

Distribution of Total Cosponsorship Partisanship Values in the House, by Congress



cosponsoring with those colleagues more frequently, all at the expense of building connections to House members across the aisle.

Moving again to the Senate (Figure 2b), the bulk of the distributions of *cosponsorship partisanship* remain in the 50–75% range, which is much lower than for the House. Cosponsorship patterns gradually become more partisan beginning with the 100th Congress (1987–1988), but even during the 104th and 105th Congresses (1995–1998), which were legislative sessions known for their high levels of inter-party conflict, the Senate distributions remained fairly stable. While there are some senators for whom 75% of their cosponsorships connect them to fellow partisans (making their behavior look more like that of House members), there are similar numbers of senators who maintained 50–50 cosponsorship networks, that is, equivalent proportions of connections to their same-party and opposite-party colleagues during that highly polarizing time. Again, a mean comparison test (see Table 3) between the two chambers shows that the mean *total cosponsorship partisanship* for the House was consistently higher than in the Senate ($p<0.10$ for the 97th Congress, $p<0.01$ for the 106th Congress, and $p<0.001$ for all other congresses). In sum, despite the increasingly polarized political

Figure 2b

Distribution of Total Cosponsorship Partisanship Values in the Senate, by Congress

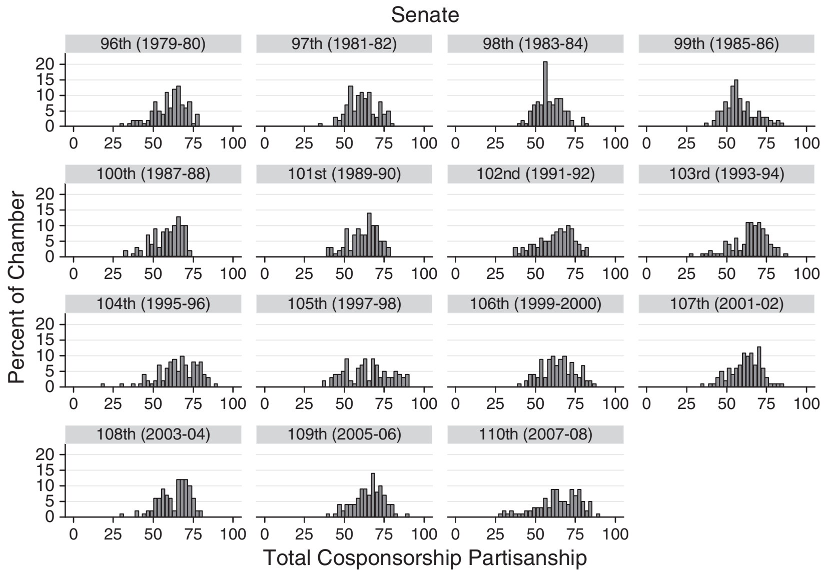


Table 3
Mean Comparison Test of House and Senate Total Cosponsorship Partisanship

Congress (years)	*N* in Senate	*N* in House	Senate mean	House mean	Senate-House difference	p-value
96th (1979–1980)	101	440	60.27	66.44	–6.17	0.000
97th (1981–1982)	101	440	61.35	63.60	–2.25	0.079
98th (1983–1984)	101	439	58.98	66.03	–7.05	0.000
99th (1985–1986)	100	439	58.49	65.87	–7.38	0.000
100th (1987–1988)	101	441	58.89	66.32	–7.43	0.000
101st (1989–1990)	100	447	61.75	66.92	–5.17	0.000
102nd (1991–1992)	101	442	62.60	68.25	–5.65	0.000
103rd (1993–1994)	101	442	64.57	71.57	–7.00	0.000
104th (1995–1996)	101	438	65.53	73.05	–7.52	0.000
105th (1997–1998)	100	444	64.78	71.51	–6.73	0.000
106th (1999–2000)	102	442	64.29	68.65	–4.36	0.002
107th (2001–2002)	101	446	62.09	70.92	–8.83	0.000
108th (2003–2004)	100	443	63.35	71.60	–8.25	0.000
109th (2005–2006)	100	443	65.31	72.55	–7.24	0.000
110th (2007–2008)	101	450	64.29	74.80	–10.51	0.000

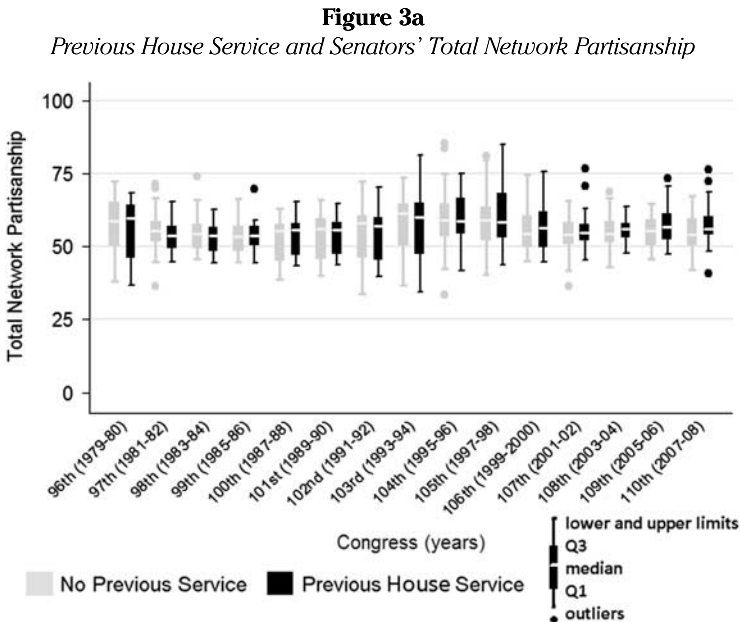
Note: Significance tests are two-tailed.
Source: Data from Library of Congress, 1979–2008.

atmosphere in which senators operate, the Senate's structure leads its members to continue to build cosponsorship connections with their partisan opponents, a pattern that is strikingly different from their voting behavior.

Prior House Service and Adaptation to Senate Norms

Hypothesis 3 concerns whether or not former House members moderate their cosponsorship practices once they enter the Senate. Comparing senators according to whether or not they previously served in the House, we find that, for most of the 1979–2008 period, there is little difference between the two groups. Figure 3a illustrates the range of values for the *total network partisanship* of senators with no prior House service (in gray) and those with previous House service (in black).[57] Each bar represents the interquartile range, or the values that fall between the 25th and 75th percentile of each variable, with the median value denoted by the notch in each bar. The lines, or "whiskers," extend to include all data within 1.5 times the interquartile range of the end of

Figure 3a
Previous House Service and Senators' Total Network Partisanship



57. Because no legislators in the data set served in the Senate prior to being elected to the House, it was not possible to test the reverse effect.

the nearer quartile; any data points that fall outside this range are shown individually as solid dots. Across all Congresses, the median values for *total network partisanship* fall within the 55–60% range. There is little variation in these values over time, and the values for senators with and without previous House service are almost identical. Moreover, the ranges of values for each Congress are almost identical, suggesting that all senators (not only those at the median) have very similar networking patterns regardless of their status as previous House members. A mean comparison test (see Table 4) of the mean values of *total network partisanship* by whether or not a senator previously served in the House reveals no statistically significant differences between the two groups until the 109th and 110th Congresses. During these years (2005–2008), mean network partisanship values were significantly higher for senators who previously served in the House compared to those with no prior House service ($p<0.05$ for both). The difference in the network partisanship values between these two groups of senators during each of the two Congresses is small (about 2.4 percentage points for each), and it is not clear from this analysis whether these differences are outliers or the beginning of a trend. In any case, prior to 2005, the cosponsorship network patterns of senators did not vary significantly based on whether or not they previously served in the House.

I find similar results for *total cosponsorship partisanship* (Figure 3b). The cosponsorship patterns of senators with and without prior House service are nearly identical, with the exception of the 104th Congress (1995–1996) and the 108th through 110th Congresses (2003–2008). This is supported by the mean comparison test shown in Table 5.[58] During the 104th Congress (1995–1996), there is a significant difference ($p<0.10$) between the two groups of senators, such that senators who previously served in the House have higher *cosponsorship partisanship* values compared to their colleagues. The same is true for the 108th through 110th Congresses (2003–2008; $p<0.10$ for these). With the exception of the more recent congresses, these findings support Hypothesis 3 and suggest that, when legislators enter the Senate, the institution has a powerful effect on shaping their cosponsorship behavior beyond any influence that previous service in the House may have had.

Still, it is important to consider possible explanations for the differences observed during the 104th Congress and the 108th through 110th Congresses. During these sessions, the cosponsorship patterns of senators with prior House service were between 3.5 and 5 percentage points more partisan than the cosponsorships of their colleagues who never served in the House. Perhaps the mean values for senators with prior House service increased due to an influx of

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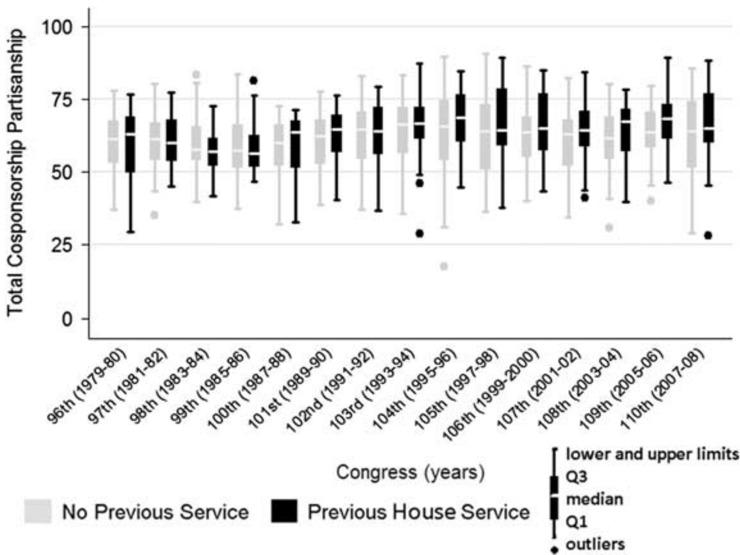
58. Because the box plots in Figure 3b show the median values for each Congress, they do not match up exactly to the values in Table 5, which show the means for each Congress.

Table 4
Mean Comparison Test of Total Network Partisanship, by Previous House Service

Congress (years)	*N* with no previous House service	*N* with previous House service	No previous House service mean	Previous House service mean	No previous minus previous difference	p-value
96th (1979–1980)	70	31	56.84	55.36	1.48	0.468
97th (1981–1982)	69	32	55.44	54.15	1.29	0.311
98th (1983–1984)	69	32	54.39	52.81	1.58	0.162
99th (1985–1986)	67	33	53.32	53.49	–0.17	0.875
100th (1987–1988)	62	39	52.34	53.03	–0.69	0.591
101st (1989–1990)	62	38	53.62	53.83	–0.21	0.877
102nd (1991–1992)	62	39	54.67	53.89	0.78	0.648
103rd (1993–1994)	66	35	57.97	57.78	0.19	0.925
104th (1995–1996)	61	40	59.05	60.39	–1.34	0.446
105th (1997–1998)	57	43	58.60	61.05	–2.45	0.190
106th (1999–2000)	56	46	55.40	57.15	–1.75	0.232
107th (2001–2002)	52	49	54.36	55.71	–1.35	0.221
108th (2003–2004)	51	49	54.98	55.57	–0.59	0.523
109th (2005–2006)	48	52	55.04	57.46	–2.42	0.033
110th (2007–2008)	50	51	54.76	57.23	–2.47	0.045

Note: Significance tests are two-tailed.
Source: Data from Library of Congress, 1979–2008.

Figure 3b
Previous House Service and Senators' Total Cosponsorship Partisanship



new members during these Congresses (e.g., 64% of Senate freshmen elected in 1994 had previously served in the House). If it takes time for new legislators to adapt to Senate norms, the mean values for cosponsorship partisanship could be skewed upward during these years by the larger proportion of new members who had prior House experience. In any case, this question deserves further investigation in future research.

Finally, I test the power of Senate norms to shape the behavior of senators who previously served in the House. I plot the mean value of *total network partisanship* for the duration of each legislator's House service (the *x*-axis) against these values for their Senate service (the *y*-axis). The *network partisanship* values for legislators range from about 40–100% during their time in the House (standard deviation = 11.0). However, when these legislators serve in the Senate, they begin to practice similar patterns of cosponsorship, at least in terms of the partisan makeup of their cosponsorship networks; in this case, the *network partisanship* values range from about 50–75%, and the standard deviation falls to 5.9. If House *network partisanship* is a good predictor of Senate *network partisanship*, the relationship would be strongly positive; however, this is not what the data show (see Figure 4a). Rather, the regression fit line is flat; a 1 percentage point increase in a legislator's mean network partisanship while serving in the House corresponds to an increase of only

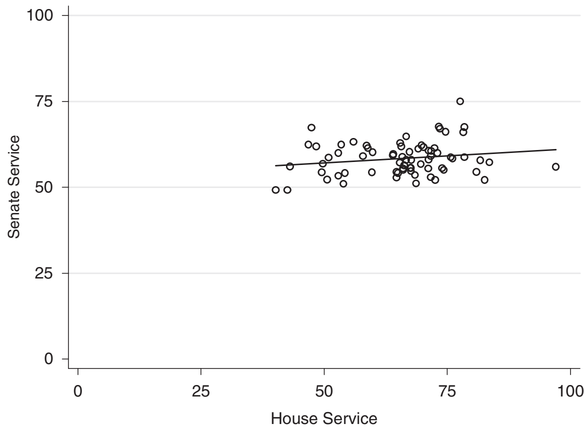
Table 5
Mean Comparison Test of Total Cosponsorship Partisanship, by Previous House Service

Congress (years)	*N* with no previous House service	*N* with previous House service	No previous House service mean	Previous House service mean	No previous minus previous difference	p-value
96th (1979–1980)	70	31	60.43	59.91	0.52	0.811
97th (1981–1982)	69	32	61.68	60.66	1.02	0.606
98th (1983–1984)	69	32	59.71	57.42	2.29	0.213
99th (1985–1986)	67	33	58.74	57.98	0.76	0.720
100th (1987–1988)	62	39	58.49	59.52	–1.03	0.601
101st (1989–1990)	62	38	61.24	62.57	–1.33	0.492
102nd (1991–1992)	62	39	62.38	62.94	–0.56	0.805
103rd (1993–1994)	66	35	64.07	65.52	–1.45	0.545
104th (1995–1996)	61	40	63.59	68.49	–4.90	0.057
105th (1997–1998)	57	43	63.26	66.79	–3.53	0.206
106th (1999–2000)	56	46	62.88	66.01	–3.13	0.136
107th (2001–2002)	52	49	60.69	63.58	–2.89	0.135
108th (2003–2004)	51	49	61.70	65.07	–3.37	0.076
109th (2005–2006)	48	52	63.41	67.07	–3.66	0.054
110th (2007–2008)	50	51	61.86	66.68	–4.82	0.082

Note: Significance tests are two-tailed.
Source: Data from Library of Congress, 1979–2008.

Figure 4a

Comparing Mean Total Network Partisanship in the House and in the Senate



0.08 percentage points when that legislator moves to the Senate. In fact, the lack of statistical significance (p = 0.123, $R^2 = 0.03$)[59] suggests that there is no relationship between a legislator's cosponsorship practices in each chamber. Regardless of whether a senator's mean *total network partisanship* value was 50 or 100% when they served in the House, most legislators' network partisanship once they are elected to the Senate falls slightly above the 50% mark. Even legislators who cosponsor most exclusively with their same-party colleagues while serving in the House regularly build cross-party connections through cosponsorship once they enter the Senate.

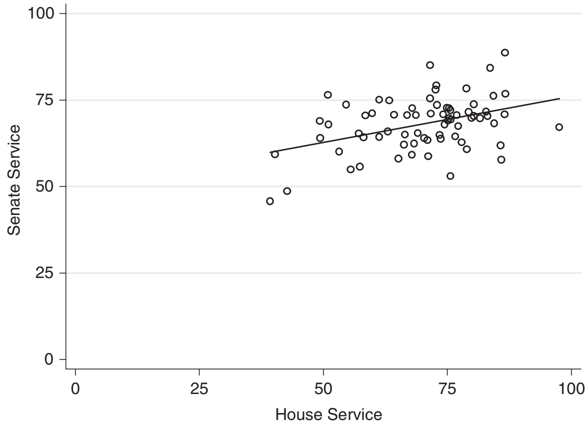
As shown in Figure 4b, when we consider a legislator's mean *total cosponsorship partisanship*, we also observe a greater degree of variation across legislators when they serve in the House compared to the Senate. When they serve in the House, the mean values for their *cosponsorship partisanship* range from about 40–100% (standard deviation = 12.0); in the Senate, the range shrinks, though only slightly, to between about 45 and 90% (standard deviation = 9.4).

Although I find a positive and significant correlation between a given legislator's House and Senate *total cosponsorship partisanship*, it is substantively very small. A 1 percentage point increase in the mean percentage of bills a legislator cosponsored with fellow partisans while serving in the House corresponds to a 0.26 percentage point increase in the mean percentage of partisan bills

59. The test is two-tailed; $N = 71$.

Figure 4b

Comparing Mean Total Cosponsorship Partisanship in the House and in the Senate



a legislator cosponsored when they moved to the Senate (p = 0.000, $R^2 = 0.17$). In other words, if Legislator Y has a mean *total cosponsorship partisanship* value that was 10 percentage points more partisan than Legislator X while the two served in the House, we would expect Legislator Y's mean *total cosponsorship partisanship* value to be only about 2.6 percentage points more partisan than that of Legislator X when the two later served together in the Senate. While this relationship is statistically significant, it is substantively small and much weaker than what we would expect if the Senate's institutional structure exerts no influence on a legislator's cosponsorship behavior. Indeed, the data suggest that about 74% of the difference in *total cosponsorship partisanship* is reduced when members move from the House to the Senate. Overall, these findings support Hypothesis 4 and suggest that, while House members form more partisan patterns of cosponsorship, those who go on to serve in the Senate adjust their behavior when they operate in the upper chamber.

The Gingrich Senators

Finally, Hypothesis 5 states that, despite their unique voting patterns, the Gingrich senators practice patterns of bill cosponsorship that are neither more nor less partisan than those practiced by their fellow senators, Republicans and Democrats alike. If any senators are likely to exhibit highly partisan patterns of cosponsorship, we would expect the Gingrich senators to do so. To test this hypothesis,

I conducted a mean comparison test of *total network partisanship* for Gingrich senators and non-Gingrich senators (i.e., all other senators). The results, reported in Table 6, show that, during seven of the eleven congresses in the analysis, the cosponsorship networks of the Gingrich senators were not significantly more partisan than those of their colleagues. Specifically, the Gingrich senators tended to be more partisan in their cosponsorship choices relative to their non-Gingrich counterparts (Republicans and Democrats) during the 104th through 106th Congresses (1995–2000), and again during the 109th Congress (2005–2006). During these years, the cosponsorship networks of the Gingrich senators were between 6 and 12 percentage points more partisan than those of non-Gingrich senators ($p = 0.000$ for these four Congresses). The results in Table 7 show a similar pattern for *total cosponsorship partisanship*.

Why these congresses differ from the others remains unclear. Perhaps the influx of a large number of freshmen Gingrich senators during the 104th Congress (1995–1996) combined with the highly polarizing atmosphere brought about by the Gingrich speakership and the “Republican Revolution” temporarily countered the moderating effects that Senate norms have on new senators. Whatever the reason, in spite of the increasing polarization in the House and of the broader political atmosphere of Washington, the Gingrich senators often practice moderate patterns of bill cosponsorship. For example, as shown in Table 6, even at peak levels of partisanship during the 99th and 105th Congresses, approximately 30% of the average Gingrich senator’s cosponsorship network was composed of colleagues from the opposing party; during five of the Congresses in the analysis, the Gingrich senators’ network partisanship was below 55%. This suggests that members of this group, who are known for their hyper-partisan roll call voting and combative behavior, can be influenced by Senate rules and norms to work with their colleagues from both political parties.

Regression Analysis

I further explore this argument by examining how legislators’ cosponsorship behavior changes the longer they serve in the Senate, through a regression analysis with the two measures of partisanship as dependent variables. Based on the idea that maintaining bipartisan connections helps senators to achieve their goals, I expect that the longer a senator has served in the chamber, the lower their *total network* and *cosponsorship partisanship* values will be. I also control for a senator’s party leadership status.[60] Senate rules and the individual power of senators require all members, leaders and rank-and-file alike, to maintain connections to senators

60. Party leaders include Speaker of the House, President Pro Tempore of the Senate, majority and minority leaders, and majority and minority whips.

Table 6

Mean Comparison Test of Total Network Partisanship, by Group of Senators

Congress (years)	*N* of non-Gingrich senators	*N* of Gingrich senators	Non-Gingrich senators mean	Gingrich senators mean	Non-Gingrich minus Gingrich senators difference	p-value
99th (1985–1986)	99	1	53.21	69.60	–16.39	-
100th (1987–1988)	99	2	52.61	52.51	0.10	0.983
101st (1989–1990)	96	4	53.69	53.93	–0.23	0.946
102nd (1991–1992)	94	7	54.49	52.65	1.84	0.573
103rd (1993–1994)	93	8	58.23	54.23	4.00	0.260
104th (1995–1996)	87	14	58.23	68.02	–9.80	0.000
105th (1997–1998)	83	17	57.56	69.88	–12.32	0.000
106th (1999–2000)	84	18	54.54	63.86	–9.32	0.000
107th (2001–2002)	83	18	55.13	54.49	0.63	0.661
108th (2003–2004)	81	19	55.08	56.07	–0.99	0.398
109th (2005–2006)	75	25	54.76	60.91	–6.14	0.000
110th (2007–2008)	79	22	55.47	57.91	–2.44	0.102

Note: Results are not shown for the 96th through 98th Congresses because no Gingrich Republican served in the Senate until the 99th Congress (1985–1986). The number of senators sometimes sums to over 100 due to mid-session retirements, deaths, or other replacements. Significance tests are two-tailed.

Source: Data from Library of Congress, 1979–2008.

Table 7
Mean Comparison Test of Total Cosponsorship Partisanship, by Group of Senators

Congress (years)	*N* of non-Gingrich senators	*N* of Gingrich senators	Non-Gingrich senators mean	Gingrich senators mean	Non-Gingrich minus Gingrich senators difference	p-value
99th (1985–1986)	99	1	58.26	81.19	–22.93	-
100th (1987–1988)	99	2	58.88	59.03	–0.14	0.983
101st (1989–1990)	96	4	61.68	63.48	–1.80	0.709
102nd (1991–1992)	94	7	62.53	63.54	–1.02	0.817
103rd (1993–1994)	93	8	64.49	65.51	–1.01	0.810
104th (1995–1996)	87	14	63.66	77.11	–13.44	0.000
105th (1997–1998)	83	17	62.08	77.98	–15.90	0.000
106th (1999–2000)	84	18	61.93	75.28	–13.35	0.000
107th (2001–2002)	83	18	62.30	61.13	1.17	0.644
108th (2003–2004)	81	19	63.07	64.52	–1.45	0.553
109th (2005–2006)	75	25	63.66	70.28	–6.62	0.002
110th (2007–2008)	79	22	64.30	64.26	0.04	0.990

Note: Results are not shown for the 96th through 98th Congresses because no Gingrich Republican served in the Senate until the 99th Congress (1985–1986). The number of senators sometimes sums to over 100 due to mid-session retirements, deaths, or other replacements. Significance tests are two-tailed.
Source: Data from Library of Congress, 1979–2008.

on both sides of the aisle, rather than strictly building relationships with their same-party colleagues; this is especially true of the relationship between majority and minority leaders who often remain in close contact with each other to keep the legislative process from breaking down.[61] However, the primary responsibility of party leaders in the Senate is to move public policy in a direction that benefits their party, electorally as well as ideologically. Because of this, I expect the cosponsorship patterns of Senate party leaders to be more partisan than those of the rank-and-file.

To control for party strength, I measure the percentage of seats held by a legislator's party during each Congress. If there are more members of a legislator's party serving in the chamber, there will be more opportunities for the legislator to cosponsor bills with party allies, possibly corresponding to an increase in the legislator's *network* and *cosponsorship partisanship*. I also expect ideological extremity[62] to be important, with ideologues less willing than moderates to cosponsor bills written by their partisan opponents. Finally, I measure a legislator's general propensity to be either an active or a passive policymaker (in terms of the number of bills they sponsor) and their willingness to work with others (number of bills cosponsored); these variables control for factors which may also influence a legislator's willingness to reach across the aisle when cosponsoring.[63] Because two of the variables (prior House service, Gingrich senator) do not vary within a legislator's service over time, I use a random effects regression which determines the difference in the dependent variables between legislators during a given Congress. The results of the regression analysis are presented in Table 8.

First, this analysis supports what we have already observed in the figures above: there are no statistically significant differences in the *total network* or *cosponsorship partisanship* of senators with or without prior House service (columns 1 and 5). The same is true of the comparison between Gingrich senators and their Senate colleagues (columns 3 and 7). While it is clear that this unique group of senators exhibits hyper-partisan patterns of roll call voting,[64] there is not enough evidence to suggest that their patterns of establishing relationships through cosponsorship follow suit. Second, during a given Congress, senators with more experience (years of service)

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61. Barbara Sinclair, "Individualism, Partisanship, and Cooperation in the Senate," in *Esteemed Colleagues*, ed. Burdett Loomis (Washington, D.C.: Brookings, 2000), 59–77, at 74; Sinclair, *Party Wars*, 227 (see note 31 above).

62. Ideological extremity is calculated as the absolute value of the legislator's Nokken-Poole DW-NOMINATE score, which is needed because the analysis requires that ideology scores be compared (and exhibit variation) across time. For an explanation, see Jeffrey W. Ladewig, "Ideological Polarization and the Vanishing of Marginals: Retrospective Roll-Call Voting in the U.S. Congress," *Journal of Politics* 72 (March 2010): 499–512, at 503. To obtain the data, visit http://voteview.com/Nokken-Poole.htm.

63. Data on party leadership and party size are available on the Senate website. Data on years of service come from Charles Stewart's website at http://web.mit.edu/17.251/www/data_page.html.

64. Theriault, *The Gingrich Senators* (see note 4 above).

Table 8

Influence of Individual Characteristics on Bill Cosponsorship in the Senate, Between-Legislator Effects

	Total network partisanship				**Total cosponsorship partisanship**			
	(1) Coeff. (S.E.)	**(2) p-value**	**(3) Coeff. (S.E.)**	**(4) p-value**	**(5) Coeff. (S.E.)**	**(6) p-value**	**(7) Coeff. (S.E.)**	**(8) p-value**
Previous House service	–0.252	0.588	-	-	–0.530	0.476	-	-
	(0.465)				(0.742)			
Gingrich senator	-	-	0.110	0.883	-	-	–1.416	0.235
			(0.747)				(1.190)	
Years of service	–0.154***	0.000	–0.153***	0.000	–0.273***	0.000	–0.284***	0.000
	(0.033)		(0.033)		(0.052)		(0.053)	
Party leader	2.874*	0.062	2.869*	0.062	4.830**	0.049	4.726*	0.054
	(1.532)		(1.533)		(2.445)		(2.441)	
Party size	0.854***	0.000	0.853***	0.000	0.894***	0.000	0.895***	0.000
	(0.082)		(0.082)		(0.130)		(0.130)	
Ideological extremity	17.089***	0.000	16.864***	0.000	35.867***	0.000	36.560***	0.000
	(1.492)		(1.560)		(2.381)		(2.484)	
Bills sponsored	–0.008	0.124	–0.008	0.119	–0.015*	0.062	–0.014*	0.071
	(0.005)		(0.005)		(0.008)		(0.008)	
Bills cosponsored	–0.006**	0.013	–0.006**	0.014	0.016***	0.000	0.015***	0.000
	(0.002)		(0.002)		(0.004)		(0.004)	
Constant	10.831**	0.014	10.825**	0.014	5.284	0.451	5.332	0.446
	(4.386)		(4.389)		(7.001)		(6.988)	
Observations	1,509		1,509		1,509		1,509	
Number of legislators	260		260		260		260	
T (avg.)	5.8		5.8		5.8		5.8	
R^2 (between)	0.58		0.58		0.62		0.62	

Note: The dependent variables are the percentage of a legislator's cosponsorship network (*total network partisanship*) or bill cosponsorships (*total cosponsorship partisanship*) that include their same-party colleagues. T (avg.) denotes the average number of congresses served by senators in the sample. Significance tests are two-tailed.

Source: Data from Library of Congress, 1979–2008.

*p <0.10; **p <0.05; ***p <0.01.

in the chamber tend to be less partisan in their cosponsorships compared to their more recently elected colleagues ($p<0.001$ in all four models). Controlling for the other variables, senators practice less partisan (more bipartisan) patterns of bill cosponsorship the longer they serve.

Turning to the control variables, during a given Congress, Senate party leaders tend to have *network* and *cosponsorship partisanship* percentages between 3 and 5

percentage points higher than those of non-leaders, with significance levels hovering at or slightly above the 0.05 mark. The coefficients on the party size and ideological extremity variables are also as expected: the more seats held by a senator's party and the more ideologically extreme a senator's roll call voting, the more partisan their network and cosponsorship values ($p<0.001$ in all cases). However, results for the number of bills sponsored and number of bills cosponsored are inconsistent. Overall, the results of the regression analysis provide additional evidence in support of the hypotheses. Together with the mean comparison tests discussed above, the results of this analysis indicate that the rules and norms of the Senate exert a substantive and significant moderating effect on the cosponsorship behavior of legislators serving in that chamber.

Discussion

This research attempts to explain why bipartisan pairs of legislators practice repeated and meaningful collaboration on policy despite working in a starkly polarized atmosphere. The findings suggest that the level of party polarization in Congress varies across types of legislative activity, and the traditional narrative proclaiming that "bipartisanship is dead" is not the whole story. While the academic literature states that roll call voting has become more polarized over the last thirty years in both the House and the Senate, this analysis of bill cosponsorship reveals a different pattern: members of the House have associated increasingly with their fellow partisans when it comes to cosponsoring bills, while senators have established cosponsorship connections with about equal numbers of their same-party and opposite-party colleagues. Drawing from the literature on House and Senate differences, which suggests that the rules, organization, and norms of each chamber exert a substantial influence on the ways in which legislators operate within their unique working environment, I argue that these inter-chamber differences can be observed empirically by examining differences in the patterns of bill cosponsorship practiced by members in each chamber.

In the House, legislators are encouraged by the majority-rule structure to connect with their same-party colleagues, and they are given almost no incentive or opportunity to reach across the aisle. They can achieve their individual goals of winning re-election, promoting policy, and amassing power[65] by following clear-cut decision rules that prioritize party loyalty. However, the Senate world is very different. Because Senate rules allow for easier obstruction of the legislative

65. Richard Fenno, *Home Style: House Members in their Districts* (Boston: Little, Brown and Co., 1978); Lawrence C. Dodd, "Congress and the Quest for Power," in *Congress Reconsidered*, ed. Lawrence C. Dodd and Bruce I. Oppenheimer (Washington, D.C.: CQ Press, 1977).

process, giving senators more individual power relative to their House counterparts, passing legislation in this chamber requires senators to build bipartisan support for a bill well in advance of a vote.[66] Moreover, navigating the complex and unpredictable legislative process requires senators to rely on relationships with trusted colleagues in order to pursue their individual interests in the chamber, rather than simply operating as devout partisans.[67] While these "sensemaking" processes are hidden from view in studies of roll call voting, examining patterns of bill cosponsorship uncovers evidence of the bipartisan relationships established between colleagues.

Anecdotal evidence of bipartisan Senate partnerships, as in the stories mentioned above, also shed light on cross-party cooperation. In many cases, even the Senate's most ideologically extreme characters, the Gingrich senators, have cooperated with their colleagues from both sides of the aisle to compromise on legislation and see it through to a vote. While the Gingrich senators are unique in their hyper-partisan roll call behavior,[68] the evidence presented in this article suggests that the working environment of the Senate influences the legislative behavior of even these members prior to casting a roll call vote.

A question that remains is: Why do senators practice bipartisanship in cosponsorship but not in voting? I think the answer lies in the public visibility of each action. In a world where legislators are criticized for voting against their party, incumbent senators facing strong challengers during party primaries risk being ousted if they do not vote the party line. Although information on bill cosponsorship is available publicly, interest groups, the media, and political scientists use roll call votes to measure a legislator's party loyalty and performance in Congress.[69] Because of the relative invisibility of cosponsorship, senators can satisfy their electoral goals by playing the role of party loyalist in their voting, and can pursue what they consider to be good public policy by maintaining bipartisan relationships with their colleagues through bill cosponsorship. In the House, due to the chamber's majoritarian rules and hierarchical structure, legislators rely on across-the-board party loyalty to satisfy their electoral and policy goals simultaneously.

Ultimately, this research is only an initial attempt to broaden our view of party polarization in Congress. While the literature makes clear that intra-party cohesion (and inter-party conflict) in roll call voting have increased significantly over time in both the House and the Senate, future research should explore how members of both parties interact throughout various stages of the legislative process. One

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66. Sinclair, "The 60-Vote Senate"; and Sinclair, *Party Wars* (see note 31 above for both sources).
67. Baker, *Friend and Foe* (see note 32 above); Dodd, "Making Sense" (see note 23 above).
68. Theriault, *The Gingrich Senators* (see note 4 above).
69. This argument is consistent with the findings of Kessler and Krehbiel, "Dynamics of Cosponsorship," who show that legislators typically do not use cosponsorship as a method of position-taking directed at their constituents and audiences outside Congress (see note 34 above).

approach would be to utilize the existing social networks literature as a framework for the study of “small-world networks” that exist in Congress among collaborators in both the House and Senate. Such further study can help us to understand the human dimension of legislatures and how the rules and norms of the institution shape the relationships formed in each chamber.

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