The Stamp of Power:
Imprinting and Collaborative Influence in the U.S. Senate, 1973-2005

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Abstract
Structural power is often assumed to translate directly into interpersonal influence. Yet people vary in their ability to convert structural power into collaborative influence. We bring together insights from research on career imprints and the social psychology of power to provide a novel explanation for this heterogeneity. We propose that—even when they have had considerable prior experience—people can still acquire institution-specific imprints when they enter a new work setting and that these imprints can affect how influential they become when they later gain or lose power. In the context of the U.S. Senate from 1973 to 2005, we argue that senators who entered the setting as part of the majority party were imprinted with a “stamp of power,” which impaired their social learning and undermined their ability to translate subsequent shifts in structural power (i.e., whether or not their party was in the majority) into collaborative influence—that is, their ability to garner support from colleagues for their legislative initiatives. We find support for this proposition and discuss implications of our findings for research on power, influence, and imprinting.

Keywords: Power; Influence; Imprinting; Networks; Collaboration.
INTRODUCTION

Sociological research has long examined how power derives from the structural positions that individuals occupy (Cook and Emerson 1978; Emerson 1962; Friedkin 1993). Because power is often equated with influence, when people move into structural positions that confer greater power, they are often assumed to become more influential (Pfeffer 1981). Yet people vary considerably in their ability to convert shifts in structural power into influence (Brass and Burkhardt 1993). Explanations for this heterogeneity have tended to focus on stable individual differences such as personality traits or interpersonal styles (Anderson and Brion 2014) or the contemporaneous behaviors through which power is enacted (Fleming and Spicer 2014).

Missing from this literature has been a temporal perspective that considers how initial experiences upon entering a new institutional setting can affect a person’s ability to convert later shifts in power into influence. Yet we know that past experiences can have profound consequences for people’s later behavior (e.g., van Maanen 1975). Just as the environmental conditions and internal features present at the time an organization was established can leave lasting imprints on its structure (Burton and Beckman 2007; Johnson 2007; Stinchcombe 1965) and the relative power of its subunits (Boeker 1989), so there is reason to expect that initial experiences upon entering a new institutional setting can leave enduring imprints that affect a person’s subsequent ability to influence others—for example, inducing others to cooperate with one’s own initiatives.

The imprinting literature has focused on the formative, early stages of careers and on general traits that are carried by people when they move from one workplace setting to another (Higgins 2005; McEvily, Jaffee and Tortoriello 2012). As a result, it remains unclear whether people—even when they have had considerable prior work experience—can still acquire
institution-specific imprints at the time of entry to a new work setting and whether these imprints might affect their later outcomes in that setting. Given that the experience of power can dampen social learning about how to work effectively with others (Galinsky et al. 2012; Keltner, Gruenfeld and Anderson 2003), a person’s initial experiences with power in a new setting would appear to be an important basis for an institution-specific imprint. This gap in our understanding about the potential downstream consequences of early power experiences stems from the twin empirical challenges of obtaining detailed, longitudinal career histories for cohorts of new entrants into the same institutional setting and of empirically disentangling measures of power and influence within these histories.

In this article, we address this gap by bringing together insights from research on career imprints and the social psychology of power. We posit that, all else equal, the gain or loss of structural power within an institutional setting produces corresponding shifts in the degree of influence that people have over their colleagues; however, these effects are contingent upon imprinting experiences with power at the time of entry to that setting. We focus on a particular form of influence—collaborative influence—which references a person’s ability to garner support from others for her initiatives. We theorize about a novel type of imprint—the “stamp of power”—which references the impaired social learning experienced by individuals who enter a new setting as part of a dominant coalition. We propose that individuals who bear this stamp of power are less able to translate downstream changes in power into collaborative influence than are their counterparts who do not have this imprint. We further suggest that the effects of this stamp are greater earlier in a person’s tenure in the new setting and fade over time through continued social learning about the setting.
We evaluate these propositions in the context of the U.S. Senate from 1973 to 2005. The Senate has previously served as a strategic research site for the study of power (Brescoll 2011), conflict (Lee 2009), and collaborative influence (Liu and Srivastava 2015; Parigi and Bergemann 2016; ten Brinke et al. 2016). For four reasons, it is especially well-suited to our theoretical aims. First, senators vary in their initial experiences with power, depending on whether or not their political party was in the majority at the time they joined. These initial experiences are largely outside of a senator’s control and exogenous to their subsequent shifts in power. It is therefore possible to examine how variation in these initial experiences promotes or inhibits a senator’s later ability to convert power into collaborative influence.

Second, at various points in their careers, senators experience significant, discrete changes in structural power—in particular, shifts in their party’s majority or minority status. These changes can be thought of as exogenous in part because they are governed by factors outside any individual senator’s control. For example, changes in majority and minority party status are the collective outcome of many state-level senatorial races. Such features of the empirical setting allow us to move closer to causal estimates of how initial experiences in the Senate enhance or constrain a senator’s later ability to convert power into collaborative influence.

Third, election to the Senate often represents the culmination of a political career. It is rarely, if ever, the first institutional setting to which a senator is exposed. Thus, the Senate is an apt setting for the study of the potential effects of imprints acquired later in one’s career. Finally, senators’ legislative behavior is part of the public record, and their varying ability to induce colleagues to collaborate with their initiatives can be readily observed. As a result, we can analytically distinguish power, based on structural positions, from collaborative
influence, as measured by the number of cosponsors senators successfully enlist on bills they originate or the number of bills they succeed in passing through the chamber. Still, given the peculiarities of the Senate context, we discuss below the extent to which these findings might generalize to other contexts.

**THEORY**

**Structural Power and Collaborative Influence**

Following Cook and Emerson (1978), we adopt a structural perspective on power. This view emphasizes the power that people derive from the structural positions they occupy, the resources they control through these positions, and interdependencies among resource holders rather than the power that stems from personality traits and other individual attributes (Brass 1984; Crozier 1964; Gouldner 1954). By power, we simply mean an individual’s potential ability to get another individual to do something he or she would otherwise not do. Collaborative influence refers to power in use—when someone converts that potential ability to get others to cooperate with her initiatives (Srivastava and Banaji 2011).

Gains in structural power—all else equal—are typically assumed to lead to greater collaborative influence, while losses are thought to have the opposite effect. One reason is that having more power enables people to reduce their dependence on others for valued resources (Cook and Emerson 1984; Molm 1990). For example, Zajac and Westphal (1996) found that boards of directors with greater structural power had greater independence and could therefore influence CEO succession choices in the direction of their own demographic profile. Second, the holders of structural power are often perceived by others as being more powerful, whether or not they actually control resources, and these perceptions boost their collaborative influence.
Finally, positions of formal authority confer legitimacy, which can also lead to greater collaborative influence (French and Raven 1959; Goldhamer and Shils 1939; Weber 1947). Raven and French (1958, p. 83), for instance, argued: “Legitimate power in formal organizations is largely a relationship between offices rather than between persons. Assuming that the factory worker accepts the right of his supervisor to hold his position, that supervisor will, by virtue of this occupancy, have the legitimate right to prescribe behavior for his worker; the worker will, in turn, feel obligated to accept these orders.”

Keeping in mind that the mere possession of power does not always equate to influence (Brass and Burkhardt 1993), including in the U.S. Senate (Den Hartog and Monroe 2011; ten Brinke et al. 2016), we nevertheless posit that changes in structural power will, ceteris paribus, lead to corresponding shifts in collaborative influence. Because this expectation has become nearly axiomatic in the literature, we refer to it as a baseline hypothesis that we use for theory building:

**Baseline Hypothesis: Gains in (losses of) power will lead to corresponding increases (decreases) in collaborative influence.**

How might we expect this baseline hypothesis to play out in the context of the U.S. Senate? In this setting, perhaps the most consequential shift in power occurs when a senator’s party moves from the minority to the majority (and vice versa). Leaders from the majority party set the legislative agenda, deciding whether or not, and when, to schedule bills for a vote. The scheduling of bills importantly determines senators’ ability to advance their legislative agenda (Den Hartog and Monroe 2011).
There are many ways for senators to influence one another within and outside the legislative body; however, a key arena of collaborative influence is in senators’ decisions to support or not support one another’s legislative initiatives. Concrete manifestations of collaborative influence in the Senate include: getting other senators to sign on as cosponsors on bills a senator originates and eventually having that bill get passed in the chamber (Fowler 2006a; Fowler 2006b; Theriault 2013). In sum, we propose that the power senators wield will increase or decrease as a function of changes in their party’s majority or minority status. These shifts in powers will lead to corresponding changes in collaborative influence, as indicated by bill cosponsorships and bills passed in the chamber.

**Imprinting and Collaborative Influence**

Having established the foundational expectation of a positive relationship between changes in power and ensuing collaborative influence, we turn next to theorizing about the role of imprinting in moderating this effect. Imprinting is “a process whereby, during a brief period of susceptibility, a focal entity develops characteristics that reflect prominent features of the environment, and these characteristics continue to persist despite significant environmental changes in subsequent periods” (Marquis and Tilcsik 2013, p. 199). Whereas much research on imprinting has operated at the community or organizational levels (e.g., Greve and Rao 2012; Johnson 2007), a growing body of work has shown the myriad ways in which experiences within an institutional setting can leave lasting imprints on individuals and their careers (Briscoe and Kellogg 2011; Higgins 2005). People are especially susceptible to such influence during the formative period after their initial entry to a new institutional setting (Cable, Gino and Staats 2013; Chatman 1991; Schein 1971). For example, initial assignments to mentors affect the kind
of knowledge that lawyers acquire and later shape how effective they are when they become partners (McEvily, Jaffee and Tortoriello 2012).

Whereas much of the prior research has focused on imprints that people acquire early in their careers and emphasized general inscribed traits that people carry from one setting to another, we build on Higgins’ (2005) insight that people can also receive imprints that are specific to an institutional setting and that may be acquired at later life and career stages. Indeed, careers often include multiple, though short, sensitive periods when people are susceptible to imprinting effects (Marquis and Tilcsik 2013). These sensitive periods are especially likely to occur during role transitions, when people are becoming socialized to a new setting with uncertain role requirements (Ashforth and Saks 1996). As we will argue and illustrate below, entry to the Senate—even for someone who is older or has considerable prior political experience—often produces high levels of uncertainty and anxiety, which in turn render new entrants vulnerable to being imprinted by institutional features of the Senate at the time of entry.

Moreover, we propose that—even when people have had considerable prior work experience—the imprints they receive upon joining a new organization can still have downstream consequences in that new setting. Because the experience of power can diminish the ability to learn about others (Galinsky et al. 2012), we argue that a person’s initial experiences with power in a new setting are especially likely to become imprinted.

We further suggest that these imprints are most likely to have observable behavioral consequences when they are activated by shifts in power experienced later in one’s career. Support for this view comes from social psychological research that demonstrates how the experience of power can activate behavioral tendencies that are otherwise latent. For example,
Chen, Lee-Chai, and Bargh (2001) showed that those with an underlying communal orientation act in socially responsible ways when they experienced power, while those with an underlying exchange orientation act in more self-interested ways when they experienced power. Similarly, Schmid Mast, Jonas, and Hall (2009) reported that the experience of power enhances perspective-taking among empathetic leaders but not among egoistic ones. Along the same lines, Côté and colleagues (2011) found that power amplifies the association between dispositional tendencies and perspective-taking with strangers (see also Gordon and Chen [2013]).

Although these studies have tended to focus on the short-term effects of experiencing power in laboratory settings, Winter and colleagues (1988; 1985) have demonstrated that socialization experiences at earlier stages in life can influence how people orient and respond to changes in power much later in their lives. Thus, extrapolating these arguments to the domain of imprinting, we posit that the imprints acquired at the time of entry to a new institutional setting will be activated and expressed when a person later gains or loses structural power within that setting.

We turn next to explaining why senators, who have had considerable prior work experience, are still susceptible to imprinting effects when they first take office. In particular, we argue that entry to the U.S. Senate often marks a “sensitive period” marked by a significant role transition—even for those who have previously held important public leadership roles (Marquis and Tilcsik 2013). For example, biographies of Lyndon Johnson (Caro 2002), Dan Quayle (Fenno 1989), and Arlen Specter (Fenno 1991), among others, indicate that newly minted senators—even those with considerable prior political experience—often feel uncertain and anxious about what the role entails on a day-to-day basis and how they are expected to act by the many constituencies they have to manage (e.g., fellow senators, senior party leaders, constituents...
in their home state, special interest groups, the press). During this sensitive period of socialization (Ashforth and Saks 1996), senators are constantly adapting to and learning from their new environment. Indeed, Fenno (1991) estimates that it takes senators approximately two years to acclimate to their new environment. We propose that the learning, or lack thereof, that occurs during this sensitive period can have lasting behavioral consequences.

**The Stamp of Power**

Initial experiences in a new institutional setting can sometimes have adverse downstream career consequences—for example, by creating cognitive rigidities that impair a person’s ability to adapt to changing circumstances (Dokko, Wilk and Rothbard 2009; Tilcsik 2014). Building on this insight, we theorize that initial experiences with structural power, which make people more influential at the time they wield that power, can also—paradoxically—diminish their ability to learn how to work effectively with colleagues and thereby dampen their ability to transform power into collaborative influence at later career stages.

Support for the proposition that the experience of power can dampen social learning comes from social psychological research on power. Those who feel more powerful tend to disregard others’ perspectives (Galinsky et al. 2006), overestimate the extent to which others are allied with them (Brion and Anderson 2013), increase their demands of others (Sivanathan, Pillutla and Murnighan 2008), and build coalitions with similar (Pfeffer and Fong 2005) and flattering others (Park, Westphal and Stern 2011). These behavioral changes occur in part because powerful people perceive greater social distance from less powerful others (Magee and Smith 2013), which leads the former to objectify (Gruenfeld et al. 2008), disregard the advice of (See et al. 2011), and inhibit the voice of the latter (Ferguson, Ormiston and Moon 2010). Insofar as these changes arising from the experience of power manifest in the sensitive period following
entry to a new institutional setting, they will dampen a person’s ability to learn how to work effectively with others.

Initial experiences with power can be importantly shaped by coalitional dynamics experienced upon entry to a new institutional setting. Our arguments apply to settings that contain oppositional groups with which newcomers must align and form coalitions. In the U.S. Senate context, the oppositional groups are the two main political parties—Democratic and Republican. Yet such oppositional groups exist in other institutional settings as well—for example, the leadership teams of two firms that have recently merged and are vying for dominance. Depending on their relative numbers, oppositional groups can sort into majority and minority factions with which a newcomer must affiliate. We propose that, relative to people who enter a new institutional context as part of a minority group, those who join as part of the dominant, majority group are more likely to experience impaired social learning, which we call the *stamp of power*, that will tend to make them less influential in their collaborative pursuits when they later experience shifts in power.

Finally, we anticipate that the effects of this stamp of power will fade as the individual spends more time in the new institutional setting. This expectation builds on prior work, which demonstrates that the strength of an imprint and its downstream consequences can vary as a function of an individual’s tenure (Phillips 2002; Tilcsik 2014). Thus, we propose that, although those entering as part of the dominant, majority group may start out with a social learning deficit, this deficiency will get erased as they gain more experience in the setting and benefit from social learning about the practices that yield greater influence with colleagues. We therefore expect:
Hypothesis 1: Individuals who enter a new institutional setting as part of a dominant, majority group will be less effective at converting future shifts in power into collaborative influence than will those who enter as a non-dominant, minority group.

Hypothesis 2: The negative effects of entering a new institutional setting as part of a dominant, majority group on the ability to convert future shifts in power into collaborative influence will fade as the individual’s tenure in the new setting increases.

In sum, we anticipate that swings in power will, all else equal, translate to corresponding shifts in collaborative influence. This effect will be dampened among individuals bearing the stamp of power; however, the effects of this stamp will fade as individuals’ gain more years of experience in the new institutional setting.

DATA AND METHODS

Empirical Setting: The United States Senate from 1973 to 2005

To test these hypotheses, we examined power dynamics, collaborative influence, and imprinting in the U.S. Senate. For reasons noted above, we believe that this setting is especially well suited to evaluating our theoretical arguments. Because senators’ structural positions and legislative actions are part of the public record, we can characterize every senator’s initial experiences with power and measure the extent to which the stamp of power affected his or her subsequent ability to convert changes in power into collaborative influence. Consistent with our hypotheses, our analyses, spanning the period from 1973 to 2005, were conducted at the individual unit of analysis. This time period included multiple shifts in power—changes in the
majority status of parties—and many opportunities for senators to parlay these changes in power into collaborative influence.

**Dependent Variables**

We focus on two primary dependent variables, each of which captures different elements of collaborative influence in the Senate: bill cosponsorships and bills that successfully passed the Senate Chamber. Bill cosponsorships define a network of collaborative influence within the Senate. A focal senator originates a bill and then enlists support for the legislation from other senators. That support manifests in other senators’ choices to publicly cosponsor or not cosponsor the focal senator’s bill. As political scientist Sean Theriault (2013, p. 96, emphasis added) explains, “When members of Congress introduce legislation, they frequently invite their colleagues to ‘cosponsor’ the measure as a sign of support to either the sponsor or the piece of legislation…. [C]osponsorship data [provide] insight into many things, including…*a legislator’s influence in the chamber*….” Although cosponsorship choices partly reflect a senator’s public identity—that formed in response to public commitments, normative obligations, and the expectations of party leaders (Liu and Srivastava 2015)—they also represent one senator’s ability to exert collaborative influence over another (Browne 1985).

Indeed, Fowler (2006a; 2006b) develops a measure of legislator connectedness based on bill cosponsorships and establishes that this measure is associated with various indicators of legislative influence. He also demonstrates that—consistent with the notion that cosponsorships reflect a senator’s level of collaborative influence—senators with less power—for example, junior senators, members of the minority party, and those who are politically vulnerable—are more likely to sign on as cosponsors to others’ bills than those with more power. Moreover, it seems unlikely that cosponsorships are merely a form of “cheap talk.” From 1973 to 2005, the
average senator cosponsored less than 3% of proposed bills, suggesting that cosponsorships are not freely given out.

Yet, at times, cosponsoring does not necessarily indicate an act of interpersonal influence. Prior research has shown that senators also cosponsor bills for a variety of reasons that may be unrelated to influence—for example, securing re-election and producing good public policy (Campbell 1982); waffling, or cosponsoring without signing a discharge petition (Krehbiel 1995); and intralegislative signaling (Kessler and Krehbiel 1996). Recognizing these different purposes of cosponsoring, we transform the straight count of cosponsorships into a more meaningful measure of interpersonal influence.

In particular, the ideological distance between senators is negatively related to their tendency to cosponsor one another’s bills (Chown and Liu 2015; Harward and Moffett 2010). In other words, it is harder for a focal senator to enlist a colleague as a cosponsor when that colleague’s political ideology differs significantly from his or her own. Thus, cosponsorships among colleagues who are ideologically distant are more likely to reflect acts of collaborative influence than are cosponsorships among colleagues who are ideologically similar.

We draw on a widely used measure of political ideology developed by Poole and Rosenthal (1997) to account for this difference in the nature of cosponsorships. This index maps each senator onto a linear space, roughly corresponding to “liberal” versus “conservative,” based on each senator’s roll call votes in a given Congress. The measure ranges from -1 (very liberal) to +1 (very conservative). Although the two main political parties occupy different ends of this spectrum, there is still considerable voting behavior heterogeneity among senators in each party.

We used the index to derive the ideological distance (ranging from 0 to 2) between each pair of senators in each Congress. We then weighted each cosponsorship by this distance. In our
approach, if two senators, $i$ and $j$, have similar ideologies based on their roll call votes, then $j$ signing on to $i$’s bills would count relatively little towards $i$’s influence score. By contrast, if $i$ and $j$ are far apart ideologically (regardless of whether or not they are in the same political party), then $j$ signing on to $i$’s bills would factor more heavily into $i$’s influence score. For each senator, we summed the (weighted) number of cosponsorships he or she accrued in a given Congress.³

In robustness checks reported below, we also undertook further transformations of this measure to account for the noise from purely symbolic cosponsorships that have little to do with collaborative influence— for example, all senators signing on to a ceremonial, patriotic bill. In particular, we first restricted the analysis to bills with twelve or fewer cosponsors, eliminating 14% of the bills. In a second cut, we restricted the analysis as stringently as possible, to bills with two or fewer cosponsors. This second restriction retained only 40% of the bills that received cosponsorships. Lastly, we constructed an alternative measure of influence based on eigenvector centrality (Bonacich 1987) in the cosponsorship network. We obtained comparable results with these alternative measures.

In addition to our cosponsorship-based measure of collaborative influence, we also used a measure of a senator’s legislative successes— the number of bills a focal senator initiates that pass the Senate chamber in a given Congress. Passing the Senate chamber is a significant milestone for a bill, and this measure reflects the outcome of the many actions senators take to influence colleagues’ voting behavior. We recognize, however, that a variety of other factors (e.g., lobbying by political interest groups) can also affect whether a particular bill gets passed.

As further robustness checks, we also report below the results of supplemental analyses based on two other measures of influence: whether a) a senator’s bill ultimately becomes law; and b) the number of amendments a senator succeeds in passing in a given Congress. As
Fowler (2006a, pp. 475-476) explains, “Amendments are used [as indicators of influence] instead of bills and resolutions because they tend to reflect more specific changes to a bill that are less susceptible to deviations from the sponsor’s original intent. Also, the number of amendments passed is used as a measure instead of the success rate because of the problem of crosscutting tendencies—more influential legislators who have a better chance of getting things to pass probably propose more amendments, which reduces their success rate.” In support of this view, Hall (1992) demonstrated that the number of amendments passed is closely tied to a survey-based measure of legislative influence based on the responses of Congressional staffers.

Figures 1 and 2 depict the distribution of our two main dependent variables: bill cosponsorships weighted by ideological distance and the number of bills that passed the Senate. As these variables are skewed, count variables, we logged each measure (after adding one to account for 0s). We treated our alternative dependent variables, restricted cosponsorship measures, amendments, and bills that became law, in a similar fashion.

Independent Variables

To test the baseline hypothesis, we constructed a time-varying measure of a senator’s structural power based on the majority or minority status of that senator’s party. The majority party wields significant power, setting the legislative agenda and deciding which bills are considered and voted upon. The majority party can choose to suppress the bills of the minority, using what has been called negative agenda control (Cox and McCubbins 2005; Gailmard and Jenkins 2007). Majority party members enjoy greater success in adding amendments to bills
(Den Hartog and Monroe 2011), raising campaign funds (Cox and Magar 1999), and allocating federal resources to their constituents (Balla et al. 2002).

These are just the directly observable consequences of majority party status. As Lee Hamilton notes: “Party status affects pretty much everything. The majority not only gets nicer spaces and meeting rooms, it also gets to determine which members and staff will go on overseas fact-finding trips, and enjoys all sorts of little perks that make life on Capitol Hill more pleasant.” Put differently, majority party status yields both tangible and intangible resources that can be used in horse-trading, thereby enabling majority-party senators to exert more influence. Thus, our measure of structural power is Majority Party: a time-varying indicator set to 1 if a senator’s party was in the majority in a given Congress and to 0 otherwise. There were five changes in majority party status during the observation period. Figure 3 depicts the party composition of the Senate by Congress.

****Figure 3 about here****

Our theory suggests that the effects of a change in power on collaborative influence will be contingent on an individual’s initial experiences as part of a majority or minority group. Hypothesis 1 contends that, relative to senators who entered the organization when their party was in the minority, those who entered when their party was in the majority will be less effective at converting future changes of power into collaborative influence. To test Hypothesis 1, we interacted a senator’s time-varying majority party status indicator with a time-invariant variable: Stamp of Power, which was set to 1 if the senator entered in the majority party and to 0 otherwise. Hypothesis 2 suggests that the effects of this stamp of power will fade over time, as the senator gains more years of experience in the chamber. To test Hypothesis 2, we included the
three-way interaction term, *Majority Party × Stamp of Power × Tenure*, and all relevant lower order interaction terms and main effects.

**Estimation**

We estimated ordinary least squares regressions with Congress fixed effects and senator fixed effects of interpersonal influence on time-varying measures of shifts in power and its interactions with the imprinting variable and tenure. Formally, regression models were represented as:

\[
E[y_{it}|X_{it}] = \beta_0 + \beta_1 \text{Tenure}_{it} + \beta_2 \text{Majority Party}_{it} + \delta_t + \gamma_i + \epsilon_{it}
\]

(1)

\[
E[y_{it}|X_{it}] = \beta_0 + \beta_1 \text{Tenure}_{it} + \beta_2 \text{Majority Party}_{it} + \beta_3 \text{Majority Party}_{it} \times \text{Stamp of Power}_i
\]

+ \delta_t + \gamma_i + \epsilon_{it}

(2)

\[
E[y_{it}|X_{it}] = \beta_0 + \beta_1 \text{Tenure}_{it} + \beta_2 \text{Majority Party}_{it} + \beta_3 \text{Majority Party}_{it} \times \text{Stamp of Power}_i + \beta_4 \text{Majority Party}_{it} \times \text{Tenure}_{it} + \beta_5 \text{Stamp of Power}_i \times \text{Tenure}_{it} + \beta_6 \text{Majority Party}_{it} \times \text{Stamp of Power}_i \times \text{Tenure}_{it} + \delta_t + \gamma_i + \epsilon_{it}
\]

(3)

where \( y_{it} \) is the influence measure for senator \( i \) in Congress \( t \), \( \text{Majority Party}_{it} \) indicates if senator \( i \)'s party is in the majority in Congress \( t \), \( \text{Stamp of Power}_i \) indicates whether the senator was in the majority in senator \( i \)'s first Congress. \( X_{it} \) is a vector of control variables, \( \delta_t \) represents fixed effects for each Congress, and \( \gamma_i \) corresponds to senator fixed effects. Equation (1) represents the model used to test the Baseline Hypothesis, while equations (2) and (3) represents the models used to test Hypotheses 1 and 2, respectively.

**Addressing Concerns about Endogeneity**

The inclusion of senator fixed effects allowed us to examine within-senator variation and helped alleviate concerns about endogeneity arising from omitted variable bias. The individual fixed effect subsumed all time-invariant characteristics of senators—for example, gender,
charisma, collegiality, and prior work experiences. In other words, these models enabled us to estimate how changes in a given senator’s power led to varying levels of influence as a function of his or her initial experiences. The inclusion of Congress fixed effects accounted for unobserved time heterogeneity—for example, years in which the President was a Republican or Democrat or years in which a focal senator’s party affiliation matched or did not match that of the President or years in which the parties varied in their proportional representation on standing Senate committees. It also accounted for shifts in the risk set of same-party versus different-party senators available as potential cosponsors.

Our analytical strategy depends on the assumption of exogenous variation in structural power and senators’ initial experiences with power. We turn next to considering the plausibility of these assumptions. Our indicator of power is a senator’s majority or minority party status. As Figure 3 indicates, no party was able to remain in the majority for more than four Congresses, and there were five shifts in majority party status. Given the relatively balanced representation of parties during this time period, we posit that shifts in majority party status were a function of a small number of elections whose outcomes were uncertain and therefore difficult for any individual to anticipate. Thus, it is reasonable to think of shifts in power arising from majority / minority party changes as quasi-exogenous to the individual.

There are also reasons to suspect that initial experiences with power were also largely outside the control of individual senators. An individual’s entry to the Senate as a majority or minority party member is based on the uncertain outcome of many other elections. These outcomes are even more uncertain at the time a senator makes the choice to run for office—particularly in light of the considerable lead time involved in planning, funding, and staffing an election campaign. Nevertheless, to address any remaining concerns about the kinds of senators
who choose to run or not run depending on anticipated election outcomes, we conducted a supplemental analysis based on the subset of senators who were narrowly elected to the chamber. These results, which restrict the sample to senators who were first voted into office with less than 51% of the popular vote, are reported below.

**RESULTS**

We begin with a description of the data. Table 1 describes the characteristics of the 1,451 senator-Congress observations in our dataset. Democrats and Republicans were nearly evenly represented. Female senators were relatively scarce in the data (4.4% of observations). The typical senator joined in the 95th Congress and served for almost six Congresses (i.e., two terms over 12 years).

Within a given Congress, the average senator had seven bills that passed the Senate, although there was wide variation in this collaborative influence measure, ranging from zero to 137 (see also Figure 1). The typical senator also scored 79.05 on our cosponsorship-based influence measure, although there was wide variation in influence with a standard deviation of 74 (see also Figure 2). The correlation between these two dependent variables was 0.50, suggesting that these measures are capturing related, but discrete, windows of influence.

As only a subset of passed bills become law, we observe that the average senator had two bills become law in each Congress, although this measure was also widely skewed. Senators were, by comparison, more successful in passing amendments, with the typical senator passing eleven amendments. Success along both of these dimensions was highly skewed, with bills that became law and amendments correlating to bills that passed the Senate at 0.69 and 0.16, respectively. The two alternative cosponsorship measures—based on fewer than thirteen and
fewer than three cosponsors to eliminate the noise of symbolic cosponsorships—were correlated with our main, unrestricted cosponsorship measure at 0.75 and 0.53, respectively.

Lastly, fifty-six percent of observations were of senators in the majority party. Moreover, sixty-one percent of senators entered as members of the majority party and were thus coded as acquiring the stamp of power.

****Table 1 about here****

We tested our hypotheses using two separate measures of influence: bills that passed the Senate and bill cosponsorships. Table 2 (Models 1-3) reports results of analyses based on the first measure. Model 1, a baseline with both Congress and senator fixed effects, reveals that influence increased with tenure. Each additional Congress increased a senator’s influence by 35%.7

In support of the baseline hypothesis, Model 2 indicates that moving into the majority party, with its concomitant increase in structural power, allowed an individual to pass more bills through the Senate. Majority party status boosted influence by 121%, an effect on par with four Congresses of experience in the Senate. In support of Hypothesis 1, Model 3 indicates a negative interaction between a change in majority party status and entering the senate as a member of the majority. Indeed, a change in a senator’s majority party status led to a 177% increase in predicted influence for senators who entered in the minority. By contrast, the comparable shift produced only a 50% boost in influence for senators who entered in the majority. This result is consistent with the stamp-of-power hypothesis.

When we shift to our second main dependent variable, ideology weighted bill cosponsorships, we find very similar results (Table 2, Models 4-6). Each additional Congress increased a senator’s collaborative influence by 6%. Being in the majority party boosts
collaborative influence by 36%. However, this boost in collaborative influence is tempered if the individual entered the Senate in the majority party: the stamp of power decreases the effect of a senator’s majority party status by 51%. Taken together, Table 2 provides strong support for both our baseline hypothesis and Hypothesis 1.

****Table 2 about here****

Because research on the dark side of power focuses on the effects of the experience of power on a person’s subsequent likelihood of losing power (Anderson and Brion 2014), we conducted a supplemental analysis to decompose the effects of the stamp of power on the gain (i.e., moving from minority to majority party status) versus the loss (i.e., moving from majority to minority party status) of power in Table 3. Senators without the stamp of power (i.e., those in the minority in their first congress) passed 159% more bills (Model 7) or had 54% more cosponsorship influence (Model 9) when they first ascended to majority party status. Similarly, those starting in the majority lost 73% of their bill passage (Model 7) or 39% of their bill cosponsorship (Model 9) influence when they lost structural power by moving to the minority. In other words, following the first shift in power between the parties, the gain and loss of influence were approximately symmetrical between the two groups.

A different pattern emerges following the second shift in power, as highlighted by Models 8 and 10. When individuals who started in the majority moved back to the majority following a period of being in the minority (i.e., \( \text{Second Change in Party Status} \times \text{Stamp of Power} \)), they were predicted to increase bill passage by 70% (Model 8) and cosponsorship influence by 48% (Model 10). Individuals who started in the minority party and then moved to the majority, however, experienced no decline in influence when they fell back again to the minority position (Models 8 & 10). That is, consistent with the dark-side-of-power literature,
those who began their senate careers in the majority appeared to become less influential when they later lost power, whereas those who started in the minority did not experience a comparable loss of influence when they later experienced a decrease in structural power.

****Table 3 about here****

Hypothesis 2 suggests that as an individual’s tenure increases, the stamp of power will fade. We test this hypothesis through a three-way interaction in Table 4. In Model 11, we find that each additional Congress decreases the effects of the stamp of power on bill passage by 9%. In Model 12, we find very similar results. Each additional Congress decreases the effects of the stamp of power on bill cosponsorship by 12%. Taken together, we find strong support for Hypothesis 2.

While these results are strong, there remains the possibility that particularly astute senators may initially elect to run in Senate elections with favorable political climates and that this political astuteness is correlated with their subsequent level of influence in the Senate. To address this possibility, we drew inspiration from the literature on regression discontinuity designs based on election results (Imbens and Kalyanaraman 2012; Lee 2008). Following Lee (2008), we assume that senators elected with just over 50% of the vote are statistically indistinguishable from contenders who fell just shy of the 50% threshold provided that there is some random chance component to election margins. We further assume that there are no systematic differences in quality or underlying capacity for influence among the subset of senators elected with just above 50% of the vote. To put it differently, since these senators were on the cusp of not even getting elected, we can safely infer that they did not enter the chamber just because the political environment strongly favored their party.
With this insight in mind, we collected data on the first-elected-year popular vote margins for each senator in our dataset. As noted above, we focus on the first-elected-year because, following Lee (2008), we propose that this approach creates a quasi-experiment where these marginal senators could have plausibly lost the election. Thus, we can think of this subsample as including senators who were randomly “treated” with the stamp of power. Results based on this subsample of senators are reported in Table 4 (Models 13 and 14). In our dataset, 46 senators received less than 51% of the popular vote in their first elected year, and we track these individuals for 233 senator-congress observations. Model 13 presents our results with bills that passed the senate, while Model 14 focuses on bill cosponsorships. Across both dependent variables, even estimated on a much smaller sample, Majority Party × Stamp of Power as well as Majority Party × Stamp of Power × Tenure are of the expected sign and significant.

****Table 4 about here****

Thus far, we have examined the consequences of the stamp of power on a senator’s ability to either pass bills through the senate or to recruit bill cosponsors. To further test the validity of these findings, we examined an individual senator’s ability to pass amendments (Model 15) and to pass bills into law (Model 16). Moreover, we present results that cull symbolic cosponsorships in Models 17 and 18. Across models using these alternative dependent variables, even when we restricted the dataset to bills that garnered only one cosponsorship (Model 18), we find very consistent support for our hypotheses. Lastly, we find that the stamp of power has the predicted effect on a senator’s centrality with the network of bill cosponsorships (Model 19). Taken as a whole, we find solid support for the stamp of power (Hypothesis 1), as well as its attenuation over time (Hypothesis 2).

****Table 5 about here****
DISCUSSION AND CONCLUSION

This article has sought to contribute to our understanding of the conditions under which structural power does not automatically equate to collaborative influence. We adopted a temporal perspective on this question, arguing that experiences with power when a person first enters a new institutional setting can leave an imprint that affects his or her subsequent ability to convert power into collaborative influence. We began with a baseline expectation that, all else equal, changes in power will lead to corresponding shifts in collaborative influence. Next, we argued that the experience of entering as part of a dominant majority group can inhibit social learning in ways that hinder the ability to translate later shifts in power into collaborative influence. Finally, we posited that the effects of this stamp of power fade over time as people gain more years of experience in their new institutional context. We evaluated and found support for these propositions in analyses of the U.S. Senate from 1973 to 2005.

These findings contribute to research on career imprints (Briscoe and Kellogg 2011; Dokko, Wilk and Rothbard 2009; Higgins 2005). Whereas most prior work has focused on the effects of imprints acquired early in one’s career, our findings demonstrate that individual-level imprints can also be acquired at later stage’s in one’s career—so long as one experiences another “sensitive period” of role adjustment in a new institutional setting (Marquis and Tilcsik 2013). In our data, senators, many of whom entered the legislative body after long careers in multiple organizational settings, still appeared to be affected by their initial experiences with power at the time of entry. These institution-specific imprints acquired later in their career still had consequences for senators’ influence when they later experienced changes in power.
In addition, this work has important implications for research on the social psychology of power. It helps to reconcile the apparent incongruities about power that social psychologists have illuminated through a variety of laboratory studies. For example, Anderson and Brion (2014, p. 81) observed: “As the empirical investigations into power maintenance and loss accumulate, so too do the apparent contradictions in findings….Power holders appear to be simultaneously astute and aloof, prosocial and antisocial, self-assured and overconfident.” The present study suggests that one way to resolve these paradoxes is by considering the role of time.

Our work highlights at least two contingent effects of time on the social psychological consequences of power. First, it suggests that the susceptibility to the dark side of power can vary considerably over the course of a career. The subtle cognitive and behavioral shifts arising from the experience of power are more likely to have lasting consequences when they originate in the sensitive period following entry to a new institutional setting than when they occur during more stable career periods. Second, our findings suggest that this stamp of power can persist in a person’s career backdrop for extended periods—several years in the case of many senators in our sample—and then move to the fore when a person later experiences a change in power (cf. Chen, Lee-Chai and Bargh 2001). Together, these findings underscore the need to bring the role of time more directly and forcefully into social psychological research on power and also point to the need to complement traditional laboratory studies with longitudinal field research.

Next, our study makes an empirical contribution to the broader literature on power by providing a concrete illustration of how power and influence can be analytically distinguished from one another. We derived separate indicators of power—based on majority / minority party status—and of collaborative influence—based on cosponsorships and bills passed. Insofar as this
empirical approach can be extended to other settings, it can help illuminate the conditions under which people succeed or fail to translate changes in power into influence (Finkelstein 1992).

Finally, by integrating the literatures on power and collaborative influence with a temporal perspective, we hope to reinvigorate scholarly interest in the construct of structural power within organizations and institutional settings such as the U.S. Senate. The results we have presented enrich our understanding of the myriad contingencies that moderate the conversion of structural power into influence.

Although the Senate represents a strategic research site for the study of power and collaborative influence, the chamber’s specific institutional features also raise questions about the generalizability of the findings. We anticipate that the results pertaining to the stamp of power would generalize to organizational contexts where there is a clear division between oppositional majority and minority factions—for example, organizations adopting a superior new technology that favors the skills of one employee group over another (Barley 1986) or a matrix organization in which the balance of power shifts repeatedly between global product groups and regional sales and distribution units.

In sum, we believe that this investigation paves the way for further research into how imprints shape career trajectories. For example, what are other types of imprints that people can acquire when they enter a new institutional setting and what other consequences, beyond collaborative influence, can they have? Under what conditions does a mid-career transition to a new institutional setting result in a sensitive period that makes the entrant susceptible to imprinting effects? Are some kinds of organizations—for example, those with strong cultures—more likely to leave imprints on new entrants than others? Can imprints be carried by people to new settings and, if so, how do they evolve in the process? Lastly, how do newly acquired career
imprints interact with previously acquired ones to affect individual career success? We see great potential in future research that explores how these sources of variation might affect the strength, durability, and downstream consequences of the imprints that people acquire when they enter a new institutional setting.
REFERENCES


# TABLES AND FIGURES

Table 1: Descriptive Statistics (N = 1,451)

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<td>0.006</td>
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Table 2: OLS Estimates of Collaborative Influence on Covariates: Structural Power Based on Majority / Minority Party Status, with Senator and Congress Fixed Effects

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<tr>
<th>Dependent Variable</th>
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<td>Majority party × Stamp of power</td>
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<td>Included</td>
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<tr>
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Note.—Majority Party is a time-varying indicator of a senator party’s majority/minority status at time t. Stamp of Power is set to 1 if the senator’s party was in the majority in his or her first Congress. Senator tenure is measured in Congresses (i.e., every two years). All models include senator and congress fixed effects. Robust standard errors. Two-tailed tests. ˙ p<.01, * p<0.05, ** p<0.01, *** p<0.001
Table 3: OLS Estimates of Collaborative Influence on Covariates: Structural Power Based on Increases and Decreases in Power, with Senator and Congress Fixed Effects

<table>
<thead>
<tr>
<th>Dependent Variable</th>
<th>(7) Bills that Passed Senate</th>
<th>(8) Bill Co-Sponsorships</th>
<th>(9)</th>
<th>(10)</th>
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<td>Tenure</td>
<td>0.294*** 0.046</td>
<td>0.302*** 0.045</td>
<td>0.080* (0.034)</td>
<td>0.085* (0.034)</td>
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<td>First change in party status</td>
<td>0.951*** (0.123)</td>
<td>0.913*** (0.137)</td>
<td>0.434*** (0.093)</td>
<td>0.432*** (0.104)</td>
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<td>First change in party status × Stamp of power</td>
<td>-1.294*** (0.135)</td>
<td>-1.112*** (0.156)</td>
<td>-0.500*** (0.107)</td>
<td>-0.365** (0.120)</td>
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<td>Second change in party status</td>
<td>-0.025 (0.128)</td>
<td>0.078 (0.120)</td>
<td>0.529*** (0.136)</td>
<td>0.390** (0.120)</td>
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<td>Second change in party status × Stamp of power</td>
<td>3.160*** (0.347)</td>
<td>3.248*** (0.346)</td>
<td>3.660*** (0.260)</td>
<td>3.735*** (0.257)</td>
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Senator fixed effects Included Included Included Included
Congress fixed effects Included Included Included Included
R-Squared 0.231 0.256 0.324 0.345
# of senators 260 260 260 260
N 1451 1451 1451 1451

Note.—Majority Party is a time-varying indicator of a senator party’s majority/minority status at time $t$. Stamp of Power is set to 1 if the senator’s party was in the majority in his or her first Congress. Senator tenure is measured in Congresses (i.e., every two years). First Change in Party Status and Second Change in Party Status represent the first and second times a senator experienced a shift of his or her party from or to the majority. All models include senator and congress fixed effects. Robust standard errors. Two-tailed tests. * p<0.05, ** p<0.01, *** p<0.001.
Table 4: OLS Estimates of Collaborative Influence on Covariates: Structural Power Based on Stamp of Power and Including Tenure Interaction, with Senator and Congress Fixed Effects

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<tr>
<th>Dependent Variable</th>
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<th>(12) Bill Co-Sponsorships</th>
<th>(13) Bills that Passed Senate &lt;51% Popular Votes</th>
<th>(14) Bill Co-Sponsorships</th>
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<td>(0.073)</td>
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<td>Majority party</td>
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<td>(0.239)</td>
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<td>Majority party × Stamp of power</td>
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<td>(0.197)</td>
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<td>(0.323)</td>
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<td>Majority party × Tenure</td>
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<td>Stamp of power × Tenure</td>
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<td>Majority party × Stamp of power × Tenure</td>
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<td>R-Squared</td>
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Note.—Majority Party is a time-varying indicator of a senator party’s majority/minority status at time t. Stamp of Power is set to 1 if the senator’s party was in the majority in his or her first Congress. Senator tenure is measured in Congresses (i.e., every two years). First Change in Party Status and Second Change in Party Status represent the first and second times a senator experienced a shift of his or her party from or to the majority. In Models 13 & 14, we restrict observations to those senators who received less than 51% of the popular vote in their first elected year. All models include senator and congress fixed effects. Robust standard errors. Two-tailed tests. * p<0.05, ** p<0.01, *** p<0.001.
Table 5: OLS Estimates of Alternative Measures of Collaborative Influence on Covariates: Structural Power Based on Stamp of Power and Including Tenure Interaction, with Senator and Congress Fixed Effects

<table>
<thead>
<tr>
<th>Dependent Variable</th>
<th>(15) Amendments Passed</th>
<th>(16) Bills that Became Law</th>
<th>(17) Bills with &lt;13 Cosponsors</th>
<th>(18) Bills with &lt;3 Cosponsors</th>
<th>(19) Eigenvector Centrality</th>
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<td>Tenure</td>
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<td>0.576***</td>
<td>0.389*</td>
<td>0.024***</td>
</tr>
<tr>
<td></td>
<td>(0.095)</td>
<td>(0.111)</td>
<td>(0.121)</td>
<td>(0.172)</td>
<td>(0.004)</td>
</tr>
<tr>
<td>Majority party × Stamp of power</td>
<td>-0.458**</td>
<td>-0.553***</td>
<td>-0.811***</td>
<td>-0.491*</td>
<td>-0.029***</td>
</tr>
<tr>
<td></td>
<td>(0.140)</td>
<td>(0.141)</td>
<td>(0.162)</td>
<td>(0.219)</td>
<td>(0.006)</td>
</tr>
<tr>
<td>Majority party × Tenure</td>
<td>0.003</td>
<td>-0.003</td>
<td>-0.027</td>
<td>-0.008</td>
<td>-0.002***</td>
</tr>
<tr>
<td></td>
<td>(0.013)</td>
<td>(0.014)</td>
<td>(0.021)</td>
<td>(0.023)</td>
<td>(0.001)</td>
</tr>
<tr>
<td>Stamp of power × Tenure</td>
<td>-0.031</td>
<td>-0.006</td>
<td>-0.004</td>
<td>-0.011</td>
<td>-0.001</td>
</tr>
<tr>
<td></td>
<td>(0.020)</td>
<td>(0.018)</td>
<td>(0.024)</td>
<td>(0.033)</td>
<td>(0.001)</td>
</tr>
<tr>
<td>Majority party × Stamp of power × Tenure</td>
<td>0.054**</td>
<td>0.067**</td>
<td>0.104***</td>
<td>0.090**</td>
<td>0.004***</td>
</tr>
<tr>
<td></td>
<td>(0.018)</td>
<td>(0.020)</td>
<td>(0.026)</td>
<td>(0.030)</td>
<td>(0.001)</td>
</tr>
<tr>
<td>Constant</td>
<td>-0.168+</td>
<td>0.694***</td>
<td>2.517***</td>
<td>0.217</td>
<td>0.083***</td>
</tr>
<tr>
<td></td>
<td>(0.091)</td>
<td>(0.102)</td>
<td>(0.145)</td>
<td>(0.170)</td>
<td>(0.005)</td>
</tr>
<tr>
<td>Senator fixed effects</td>
<td>Included</td>
<td>Included</td>
<td>Included</td>
<td>Included</td>
<td>Included</td>
</tr>
<tr>
<td>Congress fixed effects</td>
<td>Included</td>
<td>Included</td>
<td>Included</td>
<td>Included</td>
<td>Included</td>
</tr>
<tr>
<td>R-Squared</td>
<td>0.784</td>
<td>0.249</td>
<td>0.303</td>
<td>0.236</td>
<td>0.125</td>
</tr>
<tr>
<td># of senators</td>
<td>260</td>
<td>260</td>
<td>260</td>
<td>260</td>
<td>260</td>
</tr>
<tr>
<td>N</td>
<td>1451</td>
<td>1451</td>
<td>1451</td>
<td>1451</td>
<td>1451</td>
</tr>
</tbody>
</table>

Note.—*Majority Party* is a time-varying indicator of a senator party’s majority/minority status at time $t$. *Stamp of Power* is set to 1 if the senator’s party was in the majority in his or her first Congress. Senator tenure is measured in Congresses (i.e., every two years). *First Change in Party Status* and *Second Change in Party Status* represent the first and second times a senator experienced a shift of his or her party from or to the majority. In Models 17 & 18, we construct our dependent variable using the bill cosponsorship network, restricted to bills with less than 13 or 3 cosponsors, respectively. All models include senator and congress fixed effects. Robust standard errors. Two-tailed tests. * $p<.01$, * $p<0.05$, ** $p<0.01$, *** $p<0.001$. 

# of senators
Figure 1: Distribution of Collaborative Influence Measure Based on Bills That Passed the Senate

Note.—This figure depicts the number of bills a focal senator originated that ultimately passed the Senate Chamber within a given Congress. For our first dependent variable, we added one to the variable and took the log.
Figure 2: Distribution of Cosponsorship-based Measure of Collaborative Influence

![Figure 2: Distribution of Cosponsorship-based Measure of Collaborative Influence](image)

Note.—This figure depicts the distribution of a senator’s bill cosponsorship influence within a given Congress. We generated this measure using both the bill co-sponsorship network. We summed all co-sponsorships on bills originated by the focal individual, weighted by each co-sponsor $j$’s ideological distance from originating sponsor $i$. We then added 1 and took the log of this composite measure, as our second dependent variable.
Figure 3: Party Composition of Senate by Congress

Note.—Darker bars tally the number of Democratic senators and lighter bars tally Republican senators. Numbers reported are for the first day of the Congressional Session. For the 107th Congress, the Democratic Party was counted as the majority party because of the departure of Jim Jeffords from the Republican Party a quarter of the way through the Congress.
ENDNOTES

1 Individuals can be imprinted by: (1) economic conditions; (2) institutional conditions; and (3) other individuals (Marquis and Tilcsik 2013: 217-218). We theorize about (2): the institutional conditions senators face when they first begin service.
2 We use the terms “stamp” and “imprint” interchangeably throughout the manuscript.
3 We obtained comparable results when we tallied cosponsorships without weighting by the ideological distance between senators.
5 Note that the main effect of the stamp of power cannot be estimated in these models because it is time invariant and therefore subsumed by the senator fixed effects. Our theory focuses not on the main effect of the stamp but rather on its interaction with shifts in structural power.
6 For example, in late September 2016, Republicans were in the majority with 54 seats, and the Democrats held 44 seats. There were two Independents who caucused (i.e., affiliated) with Democrats. Overall, 34 seats were contested in November 2016. According to one forecast, accessed on September 26, 2016 (http://www.fivethirtyeight.com), Republicans had a 52.8% chance of being the majority party in 2017. However, the predicted probability of which party would be in the majority fluctuated widely over time. As this example illustrates, even the outcome of an imminent election can be highly uncertain.
7 Given our log-linear specification, effect sizes can be calculated by exponentiating the coefficient.