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ON THE STATUS SHOCKS OF TOURNAMENT RITUALS: HOW RITUAL ENACTMENT AFFECTS PRODUCTIVITY, INPUT PROVISION, AND PERFORMANCE

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ABSTRACT

We propose a novel process through which status shocks may enhance performance. Specifically, we theorize that when status shocks include a ritualistic conferment of social prestige – such as in the case of “tournament rituals” – participating in that ritual enactment may increase tournament winners’ productivity and improve the inputs they receive, thereby improving their overall performance. We also consider the duration of that performance improvement, finding a decay that is consistent with our theorized mechanisms that are based on emotional energy. Our study shows that status shocks carry not only informational value, as signals of quality, but also symbolic and social value that change the behavior of individuals who receive these shocks and of the input providers with whom they interact. We employ difference-in-differences and regression discontinuity designs on game-level data from the National Basketball Association (NBA) to provide causal evidence for our hypotheses.

Organizational scholars have extensively investigated the effect of occupying a higher position in a status hierarchy on performance, providing broad evidence for positive returns to status (Piazza & Castellucci, 2014; Pollock, Lashley, Rindova, & Han, 2019). The literature generally treats status as an intangible resource, such that greater amounts of status (i.e., a larger “status stock”) correspond to higher positions in the status hierarchy. Status stocks are built and maintained by beliefs that are diffused, consensual, and culturally embedded (Ridgeway & Erickson, 2000; Gould, 2002). Therefore, status hierarchies are quite stable (Merton, 1968; Graffin, Bundy, Porac, Wade, & Quinn, 2013; Malter, 2014; Bendersky & Pai, 2018: 185-187) and most changes in status occur gradually (Pollock et al., 2015), often through predictable and controlled institutionalized practices, such as “status passages” (Glaser & Strauss, 2011) and acculturation ceremonies (e.g., Geertz, 1957; Dacin, Munir, & Tracey, 2010).

However, not all status changes occur slowly and predictably. Recent work on status dynamics has started to analyze how actors’ behaviors and performance, as well as how they are perceived, may change as a result of sudden status shifts (Jensen & Kim, 2015; Neeley & Dumas, 2016), jolts (Bendersky & Pai, 2018), or shocks (Azoulay, Stuart, & Wang, 2014;

Favaron, DiStefano, & Durand, 2022; Kovacs & Sharkey, 2014). Unlike changes in status *stocks*, which generally occur gradually through endogenous changes among actors in a specific social group, status *shocks* occur when third-party audiences exogenously bestow privilege to some actors over others. A common example of status shocks are those that are generated by tournament rituals, or competitions for status (Bothner, Podolny, & Smith, 2011) in which winners receive social endorsement and prestigious awards (Anand & Watson, 2004; Anand & Jones, 2008; Patterson, Cavazos, & Washington, 2014).[1] Common examples of tournament rituals are the recurring award ceremonies in various professional fields, such as the All-America Research Team Awards dinner for financial analysts; the Lawyer Awards Ceremony; and the Grammy, Tony, and Academy Awards' ceremonies for musicians and actors. These events generate status shocks by distributing and endowing prestige asymmetrically across the profession (Anand & Watson, 2004; Anand & Jones, 2008). Thus far, scholars have shown that winning a tournament ritual impacts how audiences perceive a winner's work that was produced before that shock due to signaling, an informational process in which the status shock is used as a proxy for quality (Azoulay et al., 2014; Kovacs & Sharkey, 2014).

Yet, "there may be other pathways through which changes in status influence performance outcomes," in addition to signaling (Azoulay et al., 2014: 108). Consistent with this observation, we propose a novel process through which a status shock may impact winners' performance. Specifically, we theorize and show how tournament winners' *participation* in the ritualistic conferment of the award causes an increase in their performance. Most tournament

[1] These third-party status shocks are generated by stakeholders who are not part of the focal social system, but who have the power to subjectively select and attribute prestige to some of the members of that system. Such third-party status shocks are generated not only by tournament rituals, but also by rankings (e.g., Elsbach & Kramer, 1996; Askin & Bothner, 2016), certification contests (e.g., Wade, Porac, Pollock, & Graffin, 2006; Graffin & Ward, 2010; Polidoro, 2013), or changes in categories (e.g., Bowers & Prato, 2018).

rituals are characterized not only by the public announcement of the winners – which releases information that may act as a signal for quality – but also by the ritualistic conferment of professional prestige, usually enacted through an award ceremony (Anand & Watson, 2004; Anand & Jones, 2008). We theorize that participating in such "ritual enactment" has relevant performance implications for tournament winners, and that these implications are distinct from advantages that might result from signaling alone.

To do so, we first propose an extended theoretical model of status shocks that identifies the trigger conditions, mechanisms, outcomes, and scope conditions of two distinct processes: 1) the well-established process of signaling and 2) our newly proposed ritual enactment. We leverage Collins' interaction ritual theory (2004) to hypothesize that ritual enactment may enhance the future performance of tournament winners by boosting their emotional energy (EE) – an enhanced energetic state that raises their confidence, enthusiasm, and initiative – leading them to increase their productivity and secure better inputs. Finally, we investigate if the benefits of ritual enactment on productivity and inputs received also lead to an overall increase in performance, and whether this effect may be time-dependent. We test our hypotheses in the National Basketball Association (NBA) by analyzing the effect of players' participation in the All-Star Game (ASG) on their performance in subsequent games. This setting is particularly suited to test our predictions because ASG participants are announced several weeks before the actual ASG takes place, which allows us to empirically distinguish the implications of signaling from ritual enactment, given that they occur at different times.

We extend the knowledge about how status shocks cause an increase in performance by proposing a new process, i.e., "ritual enactment," that links the ritualistic conferment of a status-boosting award to the future performance of award winners. Our theorizing and empirical evidence show how ritual enactment causes an increase in winners' productivity and in the inputs they receive, which are two key components of the performance production process. Consistent with these findings, we also find that ritual enactment causes an increase in overall post-ritual performance, and that this effect reduces with the passage of time, in alignment with the theorized mechanisms that underlie it. In addition to contributing to status research, our findings also have implications for the use of tournament rituals in and across organizations.

THEORY

Tournament Rituals and Status Shocks

Organizational rituals are physically situated, ceremonially enacted symbolic practices that have widespread implications for organizational life (Smith & Stewart, 2011). In the context of professions, "tournament rituals" have been recognized as specific types of rituals that can impact the dynamics of entire professional fields (Anand & Watson, 2004; Anand & Jones, 2008). Tournament rituals often take the form of annual award ceremonies, such as the All-America Research Team Awards dinner for financial analysts; the Lawyer Awards Ceremony for lawyers; the Grammy, Tony, and Academy Awards ceremonies for musicians and actors; the Booker Prize and Pulitzer Award ceremonies for writers and journalists; and the All-Star Game in professional sports. Scholars have highlighted that such rituals are "field-configuring events" that draw the attention of the entire profession, and as such, can have a substantial impact on a field's evolution by restructuring how groups of actors (or stakeholders) relate to one another (Anand & Watson, 2004; Anand & Jones, 2008) and/or influencing the legitimacy of entire social categories (such as the inclusion of rap music at the Grammys in 1989; Anand & Watson, 2004).

In addition to their impact at the organizational field level, tournament rituals also have important repercussions for individuals' career trajectories, as professional awards bestow winners with prestige, thus increasing their social status in their profession (Anand & Watson, 2004; Anand & Jones, 2008; Bothner et al., 2011; Jensen & Kim, 2015). As theorized by Patterson and colleagues, "tournament rituals serve as mechanisms to distribute status among those actors that are judged as worthy of participation" (2014: 79). In terms of their implications for status accrual processes, how tournament rituals operate is distinct from other processes that underlie status orders. In general, status hierarchies are determined by endogenous processes of deference and affiliation that determine how much status "stock" each member of a social group has. As discussed by Gould (2002), these endogenous processes are cemented by the diffusion of shared, agreed-upon social beliefs about the existing status order, which leads to the formation of stable equilibria. As a result, status hierarchies are self-reinforcing, balanced systems that change slowly and gradually, if at all (Gould, 2002; Bendersky & Pai, 2018). In contrast to this conceptualization, tournament rituals can present rather sudden, externally induced "shocks" to a status order. In the next section, we illustrate how these shocks can have repercussions on individual performance that go above and beyond the implications of an actor's status stock, i.e., their position in the existing status hierarchy.

Status Shocks as Causal Processes

To theoretically explain the performance implications of tournament-induced status shocks, we present an expanded model of status shocks (Figure 1). The model outlines two main processes – "signaling" and "ritual enactment" – as well as their trigger conditions, mechanisms, outcomes, and scope conditions (Hedstrom & Swedberg, 1998). The main goal of our paper is to hypothesize and empirically isolate the effects of ritual enactment on performance, in terms of how ritual enactment may impact performance above and beyond any signaling effect.

--- INSERT FIGURE 1 ABOUT HERE ---

Processes and trigger conditions. We theorize that a tournament-induced status shock is composed of two processes that can operate in parallel: "signaling" (process A) and "ritual enactment" (process B), each activated by a different trigger condition. Signaling is triggered by the revelation of winners, usually through a public announcement. Ritual enactment is instead triggered by the enactment of the ritualistic conferment of prestige. Signaling and ritual enactment may happen simultaneously or sequentially, depending on whether the respective trigger condition (winners' revelation and conferment ritual) happens at the same time (or at the very same event) or on separate occasions. Indeed, in the case of some awards, such as the Oscars, the award winners are revealed and the conferment happens at the same time, in the same event. In other cases, as for instance for the Nobel Prize or many professional sports' All-Stars selections, several weeks may pass between the revelation of winners and the actual conferment of the award. Moreover, certain awards may not have an associated conferment ceremony; in these cases, ritual enactment does not happen at all.

Mechanisms and outcomes. Each trigger condition sparks different mechanisms, with corresponding distinct outcomes. Signaling releases new information about the winners, which causes audiences to update their beliefs (Azoulay et al., 2014). Studies have shown that the new information released by the announcement of the winners is used as a proxy of winners' quality by evaluating audiences, to the extent that these audiences have residual uncertainty about winners' quality (Podolny, 2005). For instance, Azoulay and colleagues (2014) showed that scientists who are selected to be Howard Hughes Medical Institute (HHMI) Investigators experience an increase in the citation rates of their pre-award publications. The authors theorized that the HHMI investigator status shock increased the perception of the quality of scientists' past work in the eyes of fellow scientists, who therefore cited that work more often. In addition to acting as a proxy for quality, signals generated by status shocks may also enable a winner's previous work to reach audience members who were previously not aware of or not interested in that work, thus increasing the size of the audience for this output (Kovacs & Sharkey, 2014).

In addition to these well-established effects of signaling, we propose that status shocks may provide additional benefits to tournament winners via ritual enactment (process B; Figure 1). Unlike signaling, which is activated by the announcement of the winners, ritual enactment is triggered when tournament winners participate in a ritualistic bestowal of prestige, such as the conferment of an award in tournament rituals (Anand & Watson, 2004; Anand & Jones, 2008). The implications of ritual enactment have not been explicitly theorized and tested by the literature on status shocks. Our intuition, which we will develop in greater detail in the following sections, is that participating in the enactment of the ritualistic conferment of prestige may boost tournament winners' energetic state, which will in turn lead to higher productivity (H1) and better input provision (H2) after the ritual has taken place.

Scope conditions. Figure 2 illustrates the scope conditions under which target audiences' perceptions and behaviors may be impacted by either signaling or ritual enactment alone, by both of them, or by neither. As already discussed in the literature, the key scope condition for signaling to result in an updating of audiences' beliefs about winners' quality is the presence of significant residual uncertainty in these audiences' eyes about the underlying quality of winners (Podolny, 2005). For ritual enactment, we expect it to affect only those audiences who directly interact with the winners with respect input-provision or other types of resource or social exchanges with them. As a result of these different scope conditions, there might be some audiences who are affected by both signaling and ritual enactment (Quadrant I; Figure 2), some audiences who might be affected by only one of these two processes (Quadrant II and III), and some audiences who are not affected by either process (Quadrant IV).

--- INSERT FIGURE 2 ABOUT HERE ---

Having outlined this expanded model of status shocks, we now move on theorizing the effects of our newly introduced process, i.e., ritual enactment. More specifically, the next sections will illustrate why and how we expect participation in the ritualistic conferment of prestige to influence the subsequent performance of tournament winners.

The Impact of Ritual Enactment on Tournament Winners' Productivity

We leverage sociological work on interaction rituals (Durkheim, 1912; Goffman, 1967; Collins, 1998, 2004) to unpack the socio-psychological processes triggered by the physical enactment of tournament rituals, in which prestige is usually bestowed through the conferment of awards (Soebbing, Cole, & Washington, 2015).

The theory of interaction rituals is rooted in Durkheim's studies of the social basis of religion. However, both Goffman (1967) and Collins (2004) have shown that the same mechanisms may apply to formal and informal mini rituals in everyday life, and thus also to tournament rituals (Collins, 2014). Collins (2004; 2014) suggests that successful ritual enactment requires three elements: situational co-presence, a common focus of attention, and a shared emotion. When these three conditions are present, ritual enactment may have two important consequences for participants. The first consequence is that the social group will focus their attention and excitement on honoring what – or who – is socially valued by the group, making it a "sacred object." As discussed by Collins, while sacred objects can be actual objects, such as religious icons, in contemporary societies "a politician, a religious leader, or a sports figure can become an emblem for those who have seen this person in the focus of a collective ritual" (2004: 85). In this sense, winners of tournament rituals can become symbols that are valued in a community. They are put on a pedestal, venerated, and respected, especially when the rituals are public and highly visible (Collins, 2004). The second consequence is an enhancement of the psychological state of ritual participants, in particular an enhancement of the individuals (winners, in the case of tournament rituals) who get recognized as "sacred" and are venerated by participants. These individuals become charged with what Collins calls "emotional energy" (EE), or a "longer-lasting feeling that individuals take with them from the group, giving them confidence, enthusiasm and initiative" (2014: 300). EE thus refers to coalescing feelings of confidence, strength, and enthusiasm, which also increase winners' initiative and willingness to act.

Despite the original use by Collins of the adjective "emotional",[2] the concept of EE is theoretically distinguished from how "emotions" are referred to in both the psychological literature and in more general, everyday use. Most scholars consider emotions to be psychological states that are sub-divided in categories (such as happiness, anger, fear, disgust, etc.) that are characterized by a quick and involuntary onset and brief duration (minutes or hours; Ekman, 1992; Russell & Barrett, 1999). EE can be thought of as the "drive" that individuals feel for engaging in action (Quinn, Spreitzer, & Lam, 2012) or, more broadly, "the subjective capacity to do work" (Baker, 2019: 380). As such, unlike emotions, EE is theorized to be always present in every individual, albeit at different levels, and it ebbs and flows across circumstances and situations due to "symbols that have been charged up" by successful rituals (2004: 107).

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[2] There is a debate in the literature about whether the adjective "emotional" represents the best way to describe the concept of "emotional energy" (EE) as originally defined by Collins. For instance, Quinn and colleagues (2012) prefer the term "energetic activation," suggesting that energy is not "emotional" per se, and that using the term "emotional" may indeed run the risk of confounding EE with both the folk concept and psychological treatment of emotions. On the other side of the argument, Baker (2019) suggests that dropping the adjective "emotional" may lose sight of the fact that the source of emotional energy is "core affect" (Russell 2003). We refer readers to Baker (2019) for an in-depth discussion. We use the original term here, since it appears in foundational work by Collins (1998, 2004) and is also still the most commonly used label in discussions of his theory/interaction ritual chains/ritual enactment.

Indeed, according to Collins, successful rituals boost participants' levels of EE, thereby enhancing their "energetic activation," potentially for days or weeks, after which their level of EE tends to revert to its baseline.

We suggest that the boost in EE that is generated by ritual enactment will have a direct impact on winners' productivity after the ritual takes place. After participating in the ritual, winners emerge from it with increased motivation and energy to work, which result in greater productivity, because the energetic activation will make ritual participants feel "strong, confident, full of impulses to take the initiative" (Collins, 2004: xii). This increased drive will make the winners more productive in converting inputs into outputs. Winners might also be incentivized to increase their efforts to demonstrate that they were rightful recipients of the honor and attention they were conferred, as suggested by some theories of motivation. For example, the theory on conservation of resources posits that individuals strive to retain, protect, and conserve the resources they acquire (Halbesleben et al., 2014; Hobfoll et al., 2018). For these reasons, we expect that tournament winners who participate in the ritualistic conferment of prestige will experience an energetic and motivational boost that will positively impact their subsequent productivity.

> *Hypothesis 1. All else equal, participating in the ritualistic conferment of prestige will cause an increase in the productivity of tournament ritual winners.*

The Impact of Ritual Enactment on the Inputs Received by Winners

In addition to enhanced productivity, we expect that the EE boost generated by ritual enactment will also improve ritual participants' ability to secure more inputs and/or inputs of better quality. Indeed, in most contexts, performance can be thought of as a production process in which securing key inputs has important implications for the ultimate output. As an example, in the context of scientific production, key inputs might include time dedicated to research, doctoral students, research assistants, co-authors, as well as financial resources. An increase in these inputs will likely generate better output and better overall performance, keeping constant the rate at which an individual transforms inputs into outputs (i.e., productivity).

Drawing from microsociology, we suggest that the positive effect of participating in the ritualistic conferment of prestige, which triggers the ritual enactment process, will also make tournament winners more able to secure better inputs. According to Collins, input provision can be considered a relational process, in which the outcome is determined by "who takes the initiative to take [resources] and use them, and who passively accepts that these material objects are also used" (2004: 131). In other words, the more that one party can influence or impose their will on other parties, the more likely it will be for the former to secure better resources or to secure them more efficiently from others. If we thus consider input provision as a relational process between a giver and a receiver, its outcome is likely to be impacted by the interpersonal dynamics between them.

These interpersonal dynamics are affected, among other factors, by the relative EE levels between the giving and receiving parties (Collins, 2004) – in our specific case, between input providers and tournament winners. As discussed in the previous section, ritual enactment provides tournament winners with an EE boost that increases their confidence, enthusiasm, and initiative, giving them a "halo that makes them easy to admire. They are persons who get things done; they have an aura of success surrounding them" (Collins, 2004: 132). However, input providers do not receive a comparable EE boost, since they do not participate in the prestige-conferring rituals. Therefore, the net effect of participating in ritual enactment is to create an EE gap between tournament winners and input providers, with the former experiencing an enhanced energetic state over the latter. We suggest that this will lead to advantages for tournament winners in terms of confidence and initiative, as they become more impressive and attractive in the eyes of input providers, resulting in greater admiration, respect, and deference from them (Collins, 2004).

This change in interpersonal dynamics will confer an advantage with respect to input provision to tournament winners who have participated in the ritualistic conferment of prestige. Input providers will become more likely to give more and/or better resources to these tournament winners, due to increased respect and deference the winners now receive from those input providers. Whether input provision takes the form of supplying a reference, endorsement, a material input, or a shift in attention, ritual participants end up being more likely to gain advantages in input provision, owing to their recently boosted EE. For instance, after taking part in an All-Star Game, a basketball player might receive more playing time from their coach, and more opportunities to score based on assists and passes they receive from their teammates. As a result, we expect to see an increased allocation of inputs from input providers toward winners of tournament rituals who participate in the ritual enactment.

> *Hypothesis 2. All else equal, participating in the ritualistic conferment of prestige will cause tournament ritual winners to have an advantage in the inputs they receive.*

The Impact of Ritual Enactment on Winners' Overall Performance

Unless negative spillovers exist between the advantages we discussed above, in terms of productivity and inputs received, which might happen due to the potential negative consequences of slack no productivity (Klein, 1990), complacency (Bothner et al., 2012; Castellucci & Podolny, 2017), or stress (Oldroyd & Morris, 2012), the logical consequence of H1 and H2 is that winners of tournament rituals who participate in the ritualistic conferment of prestige would experience an increase in their overall post-tournament performance, via the ritual enactment component of a status shock. Specifically, having a higher productivity (as in H1) would provide winners with a potential competitive advantage that leads to better overall performance. Likewise, advantages in inputs received (as in H2) would also lead to better overall performance, all else equal.

However, we do not necessarily expect these performance advantages to endure. In particular, the degree to which such effects on performance may persist, grow, or dwindle is likely to be related to the nature of the mechanisms that generate that advantage. For instance, the literature shows that the performance implications of a status shock generated by signaling can last for years (Kovacs & Sharkey, 2014), or – more generally – until better proxies for the quality of actors become available, such that the value of the original status signal depreciates. When it comes to advantages that are generated by ritual enactment, however, we should expect a clearer and more direct negative relationship between time and decay. This is because the boost in EE that ritual enactment generates in participants is transitory by nature; the more time that passes after ritual enactment, the more likely it is that EE levels will return to a baseline state (Collins, 2004). The precise duration and temporal dynamics of changes in EE are not known (e.g., "the time-decay of EE has not been measured," Collins, 2004: 150), but it has been suggested that the duration of rituals' "energetic afterglow" depends on the intensity and the success of the interaction ritual (Collins, 2004). Thus, even though the literature does not provide a clear guideline for the expected duration of the effect of ritual enactment on performance, we expect that if it is indeed ritual enactment that is driving our effects, the positive effect on performance will decay over time.

Hypothesis 3a. All else equal, participating in the ritualistic conferment of prestige will cause an increase in tournament ritual winners' overall performance.

Hypothesis 3b. The positive effect of participating in the ritualistic conferment of prestige on tournament ritual winners' overall performance will decrease over time.

METHODS

Research Setting

While some prior work has found positive correlations between winning tournament rituals and subsequent performance (e.g., Levy, 1987; Faulkner & Anderson, 1987; Anand & Watson, 2004), this work could not rule out powerful alternative explanations due to the co-evolution of winners' status, quality, reputation, and performance (Malter, 2014).

In our case, three empirical requirements need to be satisfied to provide a convincing test of the causal consequences of a status shock on performance via ritual enactment. First, we need to show that ritual enactment causes an increase in winners' post-tournament performance independent of winners' ex ante characteristics, such as their quality and status stock, as these can be endogenous both to performance and to winning the tournament (Simcoe & Waguespack, 2011; Malter, 2014). Second, since ritual enactment may, in principle, operate in parallel with signaling, we need to isolate the effects of ritual enactment from any signaling effects that might be operating simultaneously. Third, to rule out performance effects that might be due to changes in audience size and composition (e.g., Kovacs & Sharkey, 2014), we need to hold constant the effect of the status shock on audience size.[3]

A setting that satisfies all three requirements is the National Basketball Association (NBA). Past literature has used professional sports to study status, social dynamics, and

[3] The difference-in-differences approach used by Azoulay and colleagues was undertaken to identify a status effect that operates "by altering other-party perceptions of a given level of quality or by attracting resources that are invested to produce higher quality goods" (Azoulay et al., 2014: 95). Yet even in this careful set-up, the design could not separate whether the reported increase in citations was due to an increase in audience size (i.e., more peers getting to know the focal scientist and citing their work), or a change in audience perceptions (i.e., the original – smaller – set of the focal scientist's peers changing their perceptions about the quality of the focal scientist's work, and therefore being more likely to cite their work).

performance (e.g., Washington & Zajac, 2005; Bothner et al., 2012; Ertug & Castellucci, 2015; Kim & King, 2014; Fonti & Maoret, 2016), as there is a wealth of available data on athletes' performance. Moreover, status plays an important role in most professional sports (e.g., Marr & Thau, 2014). In our case, we leverage the fact that the NBA features a yearly All-Star Game (ASG), a tournament ritual that enhances the status of the players who get selected to participate in it, and who earn the prestigious label of "All-Stars" (Ertug & Castellucci, 2013; Kim & King, 2014; McLaren & Mills, 2008).

The first requirement is satisfied by adopting a before-and-after design in the form of difference-in-differences (DID) estimations, thanks to the NBA's fine-grained game-level data. This enables us to precisely rule out the effects of players' quality (i.e., basketball skills) on performance. Our DID models compare a player's game-level performance right before the ASG to his performance right after it, based on the assumption that players' underlying skills do not change in the short estimation window centered around the ASG, thus ruling out effects that could be attributed to changes in players' quality (skill level). Using the same logic, DID estimations allow us to separate the effect of ritual enactment from the more stable effects of a player's pre-ASG position in the underlying status hierarchy, i.e., the player's status stock.

Two characteristics of our data allow us to differentiate the effect of ritual enactment and signaling effects on performance, thus satisfying our second empirical requirement. First, in the NBA the triggers for signaling and ritual enactment (the announcement of the All-Stars and participating in the ASG itself) are separated by a few weeks. Therefore, it is possible for us to empirically differentiate between the consequences of these two processes. Second, while status signaling is contingent on uncertainty about the focal actor's underlying quality (Podolny, 2005), the key input providers that we consider in our context, i.e., coaches and teammates, have little uncertainty about players' quality. In the NBA, players and coaches develop a deep knowledge of their teammates' quality through months of daily close professional interactions in team practices and official games before the ASG takes place. We thus assume that because players and coaches frequently observe the performance of a teammate, they will develop their own clear assessment about the quality of the observed player, with minimal residual uncertainty. Therefore, the new information that is revealed as a result of one's selection to participate in the ASG would not generate noticeable updates to teammates' and coaches' perception of a player's quality, thus all but eliminating the impact of signaling (Podolny, 2005).

Finally, speaking to the third empirical requirement, the NBA provides a setting where the number of input providers – at least the ones we consider – is constant, thus ruling out potential effects that are related to changes in audience size or composition. We identify *teammates* and *coaches* as two types of input providers who can be affected by ritual enactment and who can provide the focal actor with the basic inputs needed to generate outputs. In basketball, the most basic input is "playing time," or minutes spent on court. By and large, playing time is determined by the head coach, who decides when and for how long to deploy players on the court (e.g., Ertug & Maoret, 2020). Contingent on being on the court, players need the basketball in their hands to generate the outputs that determine their performance. Accordingly, teammates can provide a player with more opportunities to perform by giving the ball to that player. Because the size of these two groups (coaches, teammates) remains the same before and after participating in the ASG, any change in the inputs provided to the focal player would be due to a change in the attention and/or deference by the same individuals in those groups, and not to changes in the size of a group.

Data and Sample Description

We used a longitudinal sample of NBA players' game-level performance from the 1983/84 to the 2016/17 season.[4] We used Basketball-Reference.com for comprehensive data and statistics on NBA players, teams, demographics, games, as well as ASG voting and participation. Table 1 reports the descriptive statistics and correlations for the variables used in our analyses.

--- INSERT TABLE 1 ABOUT HERE ---

Tournament rituals in the NBA. NBA regular seasons begin in the last week of October and last until mid-April. In February, the NBA organizes its annual ASG, which is one weekend long (the NBA All-Star Weekend) and is the most famous and prestigious event held during the regular NBA season. As suggested by Collins,

> "Sport events do not have the same recognized status as other formal rituals […] nevertheless, they are eminently successful in providing high points of ritual experience, and for many people they are preferred to participating in religious rituals." (2004: 59)

The ASG attracts extensive attention as a celebration of the league's "All-Stars." Selection to participate in the ASG is determined by a tournament, or an open competitive process. Before the ASG begins, players' introductions include lighting effects, music, pyrotechnics, dedicated merchandise, and much fanfare. For these reasons, we consider the ASG an example of a tournament ritual, and participation in it as representing an enactment of a ritualistic conferment of professional prestige.

ASG selection process. Each season, 24 players (12 per conference, Eastern and Western) "win" the tournament by being selected to participate in the ASG through a two-phase process. In the first phase, ten players (out of the 24) are selected through fan voting. Fans have about a month to vote for the players they wish to see participate in the ASG. There are six voting categories, which are the result of a combination of three player roles (guards, forward and

[4] We selected this range because available game-level data is incomplete before the 1983/84 season and the NBA All-Star selection process changed substantially after the 2016/17 season.

centers) and the two NBA conferences (Eastern and Western). When fan voting closes, players are ranked by the votes they received against other players who are in the same role and conference as they are, resulting in six rankings (one for each voting category). The top 10 players in each of the six voting categories are then publicly revealed. For each conference, the two top players in the guards and forwards categories, and the top player in the center category, are automatically selected to participate in the ASG. After this first selection phase there are thus five players (two guards, two forwards, one center) per conference selected for the ASG, for a total of 10 players. Following the first selection phase, in a second phase NBA coaches vote to select the remaining 14 All-Stars (seven per conference). Coaches can vote for any player who is not yet selected, including but not limited to those who were ranked in the top 10s in the first phase. The second phase closes in about 10 days, after which the additional 14 All-Star are announced, joining the ten players selected in the first phase for a total of 24 players participating in the ASG each season.[5]

Treatment and control groups. An important aspect of our research design was to identify the players who would be included in our treatment and control groups. The definition of our treatment group was straightforward; for each season, we included the 24 players who participated in the ASG (whether as starters or as reserves) in the treatment group. These are the players who experienced ritual enactment. The definition of our control group was less obvious (see the Appendix). We struck a balance between increasing the sample size and reducing the

[5] This selection process was largely followed during our observation period (from the 1983/84 to 2016/17 season). However, minor changes did occur across the years. For instance, between 1983/84 and 1985/86, only the top 5 players for each position-conference were revealed (instead of 10). After 2011/12, the "center" position was removed, and the three rankings per conference system, which included separate rankings for guards, forwards, and centers, was replaced with a two rankings per conference format, with "backcourt" (guards) and "frontcourt" (forwards + centers) categories. Because these changes do not fundamentally impact the nature of the ASG selection procedure, we retain the same approach across the time period covered in our study to build our treatment and control groups. We also note that our models absorb seasonal differences by including season fixed effects.

similarity of the treatment and control groups by restricting the latter to "Almost All-Stars," i.e., players who were ranked in the top 10 in fan voting but who did not end up being selected as All-Stars (and therefore who did not participate in the ASG). This choice allowed us to identify more precisely the effect of ritual enactment, building on the intuition behind Merton's 41st chair effect (1968), which suggests that the effect of tournament rituals should not affect those players who do not win, no matter how close they get to winning (for a similar approach, see Kovacs & Sharkey, 2014). We thus compared the consequences of receiving a status shock between the players who made it and those who *almost* made it, while still yielding a large enough sample. This led to a sample of 1,676 player-seasons (734 in the treatment and 942 in the control group) and 33,507 game-level observations.[6] We found consistent results from alternative specifications that used different criteria to define our control group, as we note in a later section on robustness tests.

Dependent Variables

Overall player performance. Even if the individual outputs that attract the attention of the casual fan are generally points scored and assists, basketball analysts use more comprehensive measures to track the overall performance of a player. These measures incorporate information on, for instance, failed attempts to score, turning over the ball, or possessions by the opposing

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[6] In theory, the total number of players should be 1,920 (60 players per year from 1985 to 2016, and 30 players from 1983 to 1984). However, since the number of players can vary slightly from season to season (because of injuries and replacements), we have 1,918 players in total (450 unique players). We used a window of 20 games (10 before and 10 after the ASG) in our DID estimations. This should yield a total sample size of 38,360 (1,918 * 20) observations, but again, not all players in our sample played in all 20 games in the window. Factors such as coaching decisions, disqualifications, or injuries, resulted in an actual sample size of 37,415. To avoid biases potentially introduced by considering players who got injured during our window of analysis, our main estimations only included those players (in both the treatment and control groups) who played more than 0 minutes (i.e., who played in a game at all) consistently in all the 20 games that make up our time window (-10/+10 from ASG). We also ensured that all players in the treatment group actually stepped on the court, i.e., had non-zero playing time, in the ASG. This restriction led to 1,676 players (424 unique players) and 33,520 observations. Our reported results do not change, both in terms of direction and significance level if we lift the 0 minutes restriction. After dropping another 13 observations due to missing values on at least one variable in our analyses, our final sample size is 33,507.

team that a player stopped, blocked, or retrieved. Accordingly, we test H3a and H3b using the *NBA Efficiency Rating*, a composite measure that is officially used by the NBA[7] to assess a player's overall performance for each game. It is computed as:

> *NBA Efficiency Rating = ((Points + Assists + Steals + Blocks) - ((Field Goals Att. - Field Goals Made) + (Free Throws Att. - Free Throws Made) + Turnovers + Personal Fouls)).*

Inputs received. For our purposes, the relevant input providers are those who can provide (or withhold) players with resources or opportunities that can directly influence their individual performance on court. Specifically, we consider coaches and teammates.

We use *Minutes Played* as a measure of inputs received from coaches. Coaches might deploy players for longer periods of time if they have recently received a prestigious award, which could increase the output of these players. Teammates might also show increased attention or deference to a player who participated in the ASG, which might result in allowing that player to handle the ball more often. The most direct measure of inputs received from teammates would thus be the number of passes to the focal player, standardized by minutes played. Unfortunately, this data is available only from the 2013/14 season onward. An approximation of passes received is *Touches*, an official NBA statistic that is available for our whole sample that measures the number of times a player touches the ball on the floor, by aggregating the various actions he can do while possessing the ball, e.g., pass, shoot, draw a foul, or commit a turnover. The measure is calculated as:

> *Touches = Field Goal Attempts + Turnovers + (Free Throw Attempts / (Team's Free Throw Attempts/Opponents Personal Fouls)) + (Assists/0.17)*

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[7] NBA Efficiency Rating is the first ever player evaluation metric to be incorporated by NBA.com. It was developed by Martin Manley, in the late 1980's, in the "Basketball Heaven" books outlining his production ratings and indexes measuring the overall performance of players and teams. https://www.nbastuffer.com/analytics101/nba-efficiency/

Touches is a close approximation to the actual number of passes received in a game, as these two highly correlate (r = 0.91). To keep inputs received by teammates orthogonal to those received by the coach, we compute *Touches per Minute* and use it to test H2.

The result of receiving more passes is a higher concentration of opportunities to generate output in the hands of a player. This concentration can be assessed with *Usage Rate*, or the percentage of offensive plays that involve the focal player. This measure is akin to a centralization measure; the higher the *Usage Rate*, the more the focal player becomes central in the team's offense.[8] We thus employ *Usage Rate* as an additional measure of inputs received by teammates (H2). The NBA's official formula for *Usage Rate* is:

Usage Rate = 100[(Team Minutes)/(5*(Player Minutes))]*[(Field Goal Attempts)+0.44*(Free Throw Attempts)+(Turnovers)/[(Team Field Goal Attempts)+0.44*(Team Free Throw Attempts)+Team Turnovers)]*

Player productivity. Considering our overall performance measure (*NBA Efficiency Rating*) and the inputs provided by coaches and teammates (*Minutes Played* and *Usage Rate*), we operationalize players' productivity by calculating ratios of overall performance to the levels of input received, resulting in two measures: *NBA Efficiency per Minute Played* and *NBA Efficiency over Usage*.

Independent Variable

Participating in the ASG. To estimate the effects of ritual enactment on subsequent performance, we use difference-in-differences (DID) models to quantify the performance boost received by an All-Star in the 10 games that follow the ASG, as compared to the 10 games that precede the ASG, as our theory predicts that it is participation in the ASG that should trigger the

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[8] For instance, while an average player has a *Usage Rate* of 20, Kobe Bryant had a *Usage Rate* of 38.7 at the highest level during his career, during the 2005/06 season, and a *Usage Rate* of 31.85 on average across his career. https://www.basketball-reference.com/leaders/usg_pct_career.html

consequences of ritual enactment. To estimate this effect, we interact two dummy variables: *Post ASG* and *Participation in the ASG. Post ASG* takes a value of 1 to indicate games that come after the ASG in the focal season, and 0 for games that are played before the ASG. *Participation in the ASG* is a dummy variable coded as 1 for players who participate in the ASG in the focal season (treatment group) and 0 for those players who are part of the control group. The coefficient of the interaction *Post ASG * Participation in the ASG* is the effect we aim to estimate. This interaction will be equal to 1 if a player is in the treatment group (*Participation in the ASG = 1*) and the game occurs after the ASG (*Post ASG* = 1). A positive coefficient of the *Post ASG * Participation in the ASG* interaction would indicate that participating in the ASG causes a boost in performance in the post-ASG period.

Control Variables

Player characteristics. We control for a player's experience by counting the number of seasons they have played in the NBA (*NBA Experience*) and the number of seasons spent on their current team (*Tenure with Team*). To control for a player's status stock, we include the count of his previous ASG selections (*Number of Previous ASG Selections*).[9] Following Fonti and Maoret (2016), we use Player Efficiency Rating (*PER in Previous Season*)[10] to control for players underlying quality. We do not include players' age as a control variable, since it is strongly correlated with *NBA Experience* (r = 0.91). Replacing *NBA Experience* in our models with players' age does not significantly alter our results. In addition, all these individual indicators get absorbed by our more stringent player-season fixed-effect specifications, which

[9] Given the skewed nature of the measure (which approximates a power distribution), we log transformed this variable as Ln(1+ *Number of Previous ASG Selections*).

[10] PER is calculated for each player at the season level, adjusted by pace (for full calculations see https://www.basketball-reference.com/about/per.html). This measure captures a player's expected quality in the focal season, as based on his overall performance in the previous season. Example of all-time players PER can be found at https://www.basketball-reference.com/about/per.html

offer a more precise control for individual characteristics in the models in which we implement them (see the "estimation procedure" section).

Game characteristics. Our analyses also included game-level attributes that could be related to a player's performance in that game, such as dummy variables for whether the game was won by the focal player's team (*Game Won*) or for whether the game was played at home for the focal player's team (*Home Game*).

Time trend effects. In our setting, one unit of time corresponds to one game. We include fixed effects for the *Progressive Game Number* – which corresponds to each game number in a season – to account for time-variant effects. However, different trend effects across the treatment and control groups may confound the identification of the effect of participating in the ASG on performance in post ASG games. For instance, as the season progresses (i.e., post ASG), coaches might be more inclined to play their better players to secure qualification to the play-offs. To account for this alternative explanation, and to control for time trends that can differentially affect the treatment and the control groups, we also include an interaction between *Progressive Game Number* and our treatment dummy (*Participation in the ASG*) in all our regression models.

Estimation Procedure: Difference-in-Differences and Fixed-Effect Specifications

Because better players are more likely to become All-Stars, our estimations need to rule out any potential effect of quality on performance. We do this by employing a difference-in-differences (DID) approach (Bertrand, Duflo, & Mullainathan, 2004). This method aims to identify the effect of a treatment (in our case, participating in the enactment of the ritual, i.e., the ASG) by comparing the difference in outcomes before and after the treatment, across the treatment group (ASG participants) and a comparable control group (Almost All-Stars). To estimate performance $PERF_{i,t,s}$ of a player *i*, in a game *t*, of a season *s*, the resulting estimation model is:

$$PERF_{i,t,s} = f(\beta_A Participation\_in\ \_the\_ASG_{i,s} + \ \beta_{AP} Participation\_in\_the\_ASG_{i,s}$$

$$* Post\_ASG_t \ + \beta_X \, X_{i,t,s} + FE_i + \ FE_s + FE_t \ + \epsilon_{i,t,s})$$

The coefficient β_A measures the effect of the systematic difference between players in the treatment (those participated in the ASG) and those in the control group, both before and after the ASG. Coefficient β_A thus estimates any difference in performance that is related to being selected to participate in the ASG in season *s*, regardless of whether the game is pre- or post- the ASG. $X_{i,t,s}$ is the vector of control variables. This specification includes player fixed effects (FE_i) and season fixed effects (FE_s) to control for time-invariant unobserved heterogeneity at the player level and for changes across seasons. Moreover, the model also includes game fixed effects (FE_t) to capture time-period characteristics that are common to all players at one point in time (i.e., game *t*). The presence of game fixed effects makes the inclusion of the dummy $Post\_ASG_t$ redundant, because the change in performance before and after the ASG that occurs for both the treatment and the control group would be absorbed by the fixed effects at game level.

The prior specification can only control for players' characteristics that are constant throughout their career. It cannot absorb, for instance, changes in players' skill sets, motivations or conditioning that may occur during the summer break and/or training camp, or changes in their reputation, fame, or celebrity. Thus, we employ an additional stricter specification by estimating models that include *Player * Season* fixed effects ($FE_{i,s}$), which capture variation in players' unobserved heterogeneity across seasons as well. Our second model is:

$$PERF_{i,t,s} = f\left(\beta_{AP} Participation\_in\_the\_ASG_{i,s} * Post\_ASG_t + \beta_X X_{i,t,s} + FE_{i,s} + FE_t \ + \epsilon_{i,t,s}\right)$$

In this specification, the coefficient β_A does not get estimated, as any difference represented by the dummy $Participation\_in\_the\_ASG_{i,s}$ gets fully absorbed by $FE_{i,s}$.

In both fixed effect specifications, our focal coefficient β_{AP} estimates the effect of our main explanatory variable *Participation in the* $ASG_{i,s}$ **Post* ASG_t, capturing the variance in performance that is generated by ritual enactment while controlling for underlying differences between players in the treatment and control groups, therefore approximating the true causal effect of the treatment. Finally, given the longitudinal nature of the data, we cluster standard errors for players and seasons to allow for intragroup correlation.

RESULTS

Hypotheses Testing: DID Estimation Results

H1: Causal effect of ASG participation on player productivity. Before testing our first hypothesis, we report the baseline difference in productivity (*NBA Efficiency Rating per Minute*) across the treatment and control groups, after accounting for observable player characteristics and game attributes. The coefficient of *Participation in the ASG* in Model 1 in Table 2 shows that, on average, productivity for All-Star players participating in the ASG is 0.045 higher ($p < .001$) than "Almost All-Stars." This confirms that, as expected, All-Star players participating in the ASG generally tend to perform better than non-All-Stars, across the range of games we consider.

--- INSERT TABLE 2 ABOUT HERE ---

To estimate any changes in player productivity after the ASG that are caused by participating in the ASG, and are thus attributable to ritual enactment, we implement the DID design via our main explanatory variable *Participation in the ASG * Post ASG (*Model 2, Table 2*)*. After controlling for any pre-treatment differences between the treatment and control groups, the positive and statistically significant coefficient of *Participation in the ASG * Post ASG* provides support for H1, showing a positive causal effect of ritual enactment on productivity (β = 0.034; $p < .001$; Model 2). Model 3 displays similar results (β = 0.034; $p < .001$) using an even stricter specification, in which we include *Player * Season* fixed effects. These fixed effects not only absorb time-invariant heterogeneity at the level of players (as in Model 2), but also allow player-level heterogeneity to change from season to season, thus accounting for an increase or decrease in players' characteristics throughout their careers (for instance, variations in a player's skills across seasons). Using an alternative measure of productivity (*NBA Efficiency Rating over Usage*) as the dependent variable, Models 4 and 5 confirm a significant increase in productivity caused by *Participation in the ASG * Post ASG* (β = 0.043; $p < .01$). These results indicate that the baseline difference between the treatment group (All-Star players who participate in the ASG) and the control group (Almost All-Stars who do not participate in the ASG) is amplified by 117% in terms of *NBA Efficiency Rating per Minute* (from 0.029 to 0.063, Model 2) and by 123% in terms of *NBA Efficiency Rating over Usage* (from 0.035 to 0.078, Model 4) after the ASG, providing support for H1 and showing that the causal effect is meaningful in magnitude. Our estimations suggest that the average productivity boost for a player in a given season generated by ritual enactment corresponds, in terms of the standard deviation of the productivity of a player in a season, to a 15% increase in *NBA Efficiency Rating per Minute* (0.034/0.227) and a 12% increase in *NBA Efficiency Rating over Usage* (0.043/0.345).

H2: Causal effect of ASG participation on inputs received. Results in Table 3 test the impact of ritual enactment on inputs received. The first input we analyze is *Minutes Played*. The statistically non-significant coefficient of *Participation in the ASG * Post ASG* in our DID estimations (Model 6, Table 3) indicates that players participating in the ASG do not seem to receive more playing time after participating in the ASG (β = 0.079; p = .783). These results are confirmed by the most stringent multi-dimensional fixed-effects specifications (Model 7). In Models 8 and 9 we turn to estimating the effect of ritual enactment on inputs provided by teammates, using *Touches per Minute*. The positive and statistically significant coefficient of

*Participation in the ASG * Post ASG* in Model 8 (β = 0.069, p < .001) indicates that the difference between players participating in the ASG and Almost All-Star players in *Touches per Minute* is amplified by 147 % (from 0.047 to 0.116) after ritual enactment. Model 9 confirms these results after including the stringent *Player * Season* fixed effects in the specification, showing that participating in the ASG has a positive effect on *Touches per Minute* (β = 0.069, p < .001). In Model 10 we report the effect of ritual enactment on inputs provided by teammates using *Usage Rate* as an alternative dependent variable, again finding a positive and statistically significant coefficient for *Participation in the ASG * Post ASG* (β = 0.668, p < .01).

--- INSERT TABLE 3 ABOUT HERE ---

The results in Table 3 collectively suggest that a status shock via a ritual enactment, i.e., participating in the ritualistic conferment of a prestigious award, causes winners to receive more inputs from teammates, which correspond, in terms of the standard deviation of these measure for a player in a season, to a 19% (0.069/0.358) increase in *Touches per Minute*, and a 13% (0.668/5.03) increase in *Usage Rate.*

H3a and H3b: Causal effect of ASG participation on overall performance. The results in Model 11 and 12 in Table 3 test whether participating in the ASG causes an increase in a player's overall performance (H3a), and whether this boost dissipates over time (H3b). The positive and statistically significant coefficient of *Participation in the ASG * Post ASG* in Model 11 (β = 1.314, p < .001), which includes the most stringent *Player * Season* fixed-effects specification, provides support for H3a, as it shows that participating in the ASG causes an overall boost in player performance (*NBA Efficiency Rating*).[11] To test whether the performance

[11] Our results remain robust if we use *Game Score*, an alternative measure of overall performance developed by John Hollinger, a longtime analyst and writer for ESPN and former Vice President of Basketball Operations for the Memphis Grizzlies. *Game Score* is a refinement of Hollinger's earlier measure, Player Efficiency Rating (PER), so that it can be easily calculated for each game (unlike PER, which is calculated at the season level), and it differs

effect declines over time (H3b), we implemented a spline regression in Model 12 (Marsh & Cormier, 2001), splitting the continuous variable *Progressive Game Number* into two (continuous) variables based on whether the game was before the ASG (*Progressive Game Number pre ASG*) or after (*Progressive Game Number post ASG*), and interacting each of them with our treatment variable. This specification allows us to estimate whether our treatment variable exhibits differential trends before and after the ASG. The coefficient of *Participation in the ASG * Progressive Game Number pre ASG* shows that, before the ASG, there is no significant temporal trend that distinguishes players who would participate in the ASG from those that do not (β = -0.03; p = .45). The negative and significant coefficient of *Participation in the ASG * Progressive Game Number post ASG* (β = -0.15; p < .001) confirms that, after the ASG, the performance boost that players receive for participating in the ASG (β = 1.375; p < .001) declines approximately by 0.15 after every game, thus providing support for H3b.

To illustrate the decaying effect of ritual enactment on performance, Figure 3 plots the effect of participating in the ASG for 20 games before and after the ASG using five-game bins. The graph shows that the effect is positive and statistically significant for the first five games after the ASG (β = 0. 915; p = .003). The second bin, capturing the effect for the five to ten games after the ASG, shows a smaller effect that is not statistically significant. This downward trend continues in the third and fourth bins (displaying the performance implications for the 10-15 and 15-20 games after the ASG, respectively). While the drop in statistical significance can be attributed to noise (as in any DID design, the further we temporally move away from the treatment, the harder it becomes to precisely estimate its effect, vis-à-vis the confounding effects

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from the NBA Efficiency Rating by including weights for different components, as follows: *Game Score = Points + 0.4 * Field Goals - 0.7 * Field Goals Attempts - 0.4*(Free Throw Attempts – Free Throw) + 0.7 * Offensive Rebounds + 0.3 * Defensive Rebounds + Steals + 0.7 * Assists+ 0.7 * Blocks - 0.4 * Personal fouls –Turnovers*.

of other covariates), the estimated effect of ritual enactment is also decreasing, suggesting a "halo" effect of limited duration.

--- INSERT TABLE 3 AND FIGURE 3 ABOUT HERE ---

Robustness Tests

Testing alternative explanations: Signaling. The main goal of our study is to introduce, theorize and show the relevance of ritual enactment, a process through which status shocks may cause an increase in performance above and beyond any effect attributable to signaling. To empirically test our theory, we focused on the effects of ritual enactment on two audiences – coaches and teammates – who we assumed lacked any significant residual uncertainty about All-Star players' quality, thus falling under the bottom-left quadrant of our scope conditions table (Figure 2). This low level of uncertainty about quality implies that any statistically significant effect of ASG participation on players' post-ASG performance could not be attributable to signaling, thus ruling it out as a potential alternative explanation.

We can empirically test this assumption by leveraging a characteristic of our empirical setting. Recall that our theoretical model (Figure 1) not only specifies different trigger conditions for signaling and ritual enactment (announcement of the winners and the ritualistic conferment of prestige, respectively), but also allows for the possibility of the two conditions not to be triggered at the same time, or in the same event. Indeed, this is what happens in our setting: in the NBA there is a time-lag between the public announcement of All-Star selections and the date of the actual ASG (e.g., in 2019 the announcement was made on January 24th, while the ASG was played on February 17th.) We can leverage this time-lag to empirically test whether our audiences are affected by signaling; if so, we should see their behavior changing after the All-Star *announcement* date. Accordingly, Table 4 reports a robustness test using the All-Star selection announcement date – instead of the date of the ASG – in the DID design, re-estimating all our main models and using players who were selected to participate in the ASG as the treatment group. In these results, we do not see any statistically significant changes in productivity, inputs received, or overall player performance after the announcement date, thus providing additional empirical evidence to rule out signaling as a credible alternative explanation.

--- INSERT TABLE 4 ABOUT HERE ---

Testing the mechanism: Exposure in the ritual. A limitation of our study is that we cannot measure EE directly. However, to provide additional evidence that the mechanism underlying ritual enactment is indeed EE, we leverage an element of our data, i.e., the fact that ASG participants vary in terms of how many minutes they played in this event. The intuition for this additional test comes directly from Collins (2004): The more that an All-Star player is the center of attention during the enactment of the ritual, the stronger his EE-boost to be. Accordingly, we test whether the post-ASG increase in a player's performance is amplified by the minutes he spent on court during the ASG, by interacting the dummy variable *Post ASG* with the *Number of minutes played in the ASG*, setting the latter variable to zero for players who are in the control group (i.e., Almost All-stars). The coefficient of the interaction *Post ASG * Number of minutes played in the ASG* is positive and significant ($\beta = 0.06$, $p < .001$). These results confirm, as expected, that the performance boost is amplified as a function of players' exposure in the ritual, i.e., by the time spent by All-Stars on court during the ASG.

Other Robustness Tests. We performed several robustness tests to provide stronger support to our findings. Namely, we investigated the implications of using alternative control groups, tested Merton's 41st chair effect, and used a regression discontinuity design (RDD) as an alternative identification strategy. We summarize these results here, referring readers to the Appendix for more details.

The control group used in our main analyses was restricted to “Almost All-Stars,” or those players who were ranked in the top 10 in fan voting but who did not end up being selected as All-Stars. Our main analyses thus discarded all other players who were not either All-Stars or Almost-All Stars, leaving open the possibility of not observing a significant boost in post ASG performance when comparing ASG participants to *all* other players. However, this was ruled out by re-testing all our main models by comparing our treatment group (ASG participants) to all other players, which – as expected – yielded results completely consistent to the ones reported in Tables 2 and 3. We have also re-tested our main models using Coarsened Exact Matching (Iacus, King, & Porro, 2011) to create a control group that is even more similar to the treatment group in terms of quality, experience, and playing position on court, again finding consistent results.

A key assumption of our theory is the existence of a 41st chair effect, i.e., that the performance boost attributable to ritual enactment should apply only to those All-Star players who actually participated in the ASG. No other players, no matter how close they were to making it to the ASG (e.g. “Almost All-Stars”), should benefit from the ASG itself. To test this assumption, we thus compared “Almost All-Stars” to all other players who did not make it to the top 10, finding no statistically significant difference. Consistent with our theorizing, these results confirmed that the status shock consequences that are caused via ritual enactment are restricted to ASG participants only, thus proving the existence of a 41st chair effect.

Finally, we used a regression discontinuity design (RDD; Lee & Lemieux, 2010; Flammer & Bansal, 2017) to rule out the possibility that our treatment may be endogenous to players’ quality levels. An RDD leverages the fact that, in our setting, a small difference in votes may lead to a discrete change in a player's position in the ranking, and thus in his participation in the ASG. If we assume the small difference in votes to be random, and thus uncorrelated to players' quality or other factors, we can then attribute the post ASG performance boost solely to the ASG participation. We thus compared – in each season and for each voting category – the first player in the voting ranking who did not make it to the ASG with the very last player in the ranking who did participate in the ASG. The results showed the presence of a discontinuity and a significant positive difference in the performance of those players who received just enough votes to make it to the ASG, and those who almost did ($p < .001$), again supporting the causal nature of our hypotheses (Table A, Appendix).

DISCUSSION

Over the last 30 years, research on status has established a robust positive association between status and performance. Despite this taken-for-granted relationship, the status literature is ripe for a deeper understanding of the underlying processes that lead status to improve performance, the magnitude and duration in these effects that are implied by these processes, as well as the key scope conditions of the different processes. Our study explores several of these avenues.

Theoretical Contributions

Introduction of ritual enactment. Our primary theoretical contribution is the introduction of ritual enactment, a novel process through which status shocks may impact actors' performance. The management literature on status has been dominated by discussions of status as a signal of quality (Piazza & Castellucci, 2014). Even when discussing status shocks, studies have focused on the informational implications of status that occur in the presence of uncertainty about actors' underlying quality (Azoulay et al., 2014; Kovacs & Sharkey, 2014). While we acknowledge the importance of the informational value of status, status also carries social and symbolic value, which has been core to theorizing about status in the sociological literature, but has seldom been explored by the management literature, particularly in terms of its performance implications. We show that the consequences of status shocks are not limited to the perception of the quality of a focal actor's output (as signaling would suggest) but can also affect the production of that output. We illustrate how ritual enactment, a process triggered by *participation* in a ritualistic event that confers prestige, has consequences for performance after that event, and that these consequences are brought about by processes distinct from a purely informational mechanism (i.e., the announcement of winners). We also show that these consequences causally impact different stages of the performance production process. Even though the literature on status shows that status impacts overall performance, studies have rarely theorized, and even more rarely tested (see Castellucci & Ertug, 2010 for an example that provides a test) the causal impact of status on the underlying mechanisms that generate performance. In our case, these mechanisms are input acquisition and productivity (transformation of inputs into outputs). Distinguishing the effect of status on different mechanisms is important, as there are likely to be important scope conditions in how these mechanisms operate. For instance, while we find a statistically significant effect on input provision for teammates (peers), we do not see it for coaches. This may indicate that occupying a higher position in a formal structure, such as organizational hierarchy, might shield certain individuals from the influence of ritual enactment. Studies that have investigated limits to signaling-based advantages of status stocks have also examined factors that nullify those advantages (e.g., Collet, Carnabuci, Ertug, & Zou, 2022, show that ideological distance between an actor and this actor's exchange partners drastically reduces status advantages). Accordingly, future studies should continue to explore this direction, looking at whether there may be formal social structures (e.g., hierarchy), informal social structures (e.g., ideology), or interplays between these that influence how status stocks and status shocks impact the provision of key inputs and how audience react to the focal actor.

Status shocks vs. stocks. Our results suggest that scholars should distinguish between self-reinforcing processes (Gould, 2002) that create stable status orders (which underlie and maintain “status stocks”) from third-party mechanisms of status conferral (such as rankings, tournament rituals, and certification contests) that generate status shocks (e.g., Azoulay et al., 2014; Jensen & Kim, 2015). Status shocks are often discontinuous, since sometimes having just one more vote or one extra rating helps an actor to be considered part of an elite group. What we show is that those discontinuous perturbations of the status order, i.e., status shocks, have direct consequences for actors, net of their stable status positions, i.e., their status stock. This distinction allows the development of a more encompassing model of status dynamics, as suggested by Bendersky and Pai (2018), by extending the traditional models of stable endogenous status hierarchies to accommodate a dynamic view that includes unexpected shifts in status orders. Status positions may be changed or challenged (Bendersky & Pai, 2018) as individuals and organizations may win awards and nominations (Jensen & Kim, 2015; Kovacs & Sharkey, 2014, Ertug & Castellucci, 2013), earn higher ratings (Rao et al., 2005; Bowers & Prato, 2019), or new certifications (Simcoe & Waguespack, 2011). These different types of events may have distinct informational, behavioral, and socio-psychological consequences for those who experience a status shock, based on the different mechanisms they are linked to. To this point, our work shows that the effect of ritual enactment on performance is of limited duration, which stands in contrast with the assumption of the long-term stability of one’s status stock and its consequences. Future research can continue to explore points that are tied to this distinction, such as the comparison between the performance implications of status shocks and status stocks, with respect to their magnitude, duration, and scope conditions, including their effects on different audiences (e.g., Ertug, Yogev, Lee, & Hedstrom, 2016).

A careful distinction between "shocks" from "stocks" may also allow scholars to explore the interaction between them, for instance by investigating whether the impact of status shocks on actors' performance is contingent on their underlying level of status stock. For example, Azoulay et al. (2014) showed (in additional analysis) that a status shock has a bigger signaling effect for scientists who are relatively unknown, who are probably also lower status. However, whether ritual enactment (or other processes) may follow the same pattern is a question that is open for further investigation. Future research could build on this distinction between status stocks and status shocks to develop a more encompassing framework that incorporates both signaling and ritual enactment, and which links the different sources of status, the associated mechanisms, their interactions, to the magnitude and duration of the performance effects that follow.

Framework generalizability. Our theory posits that overall, status shocks may be composed of signaling and ritual enactment, two processes that can operate in parallel and have important consequences for performance (Figure 1). However, we do not expect that all status shocks contain both the signaling and ritual enactment components. It is possible for certain status shocks to feature just signaling or ritual enactment. For instance, rankings or certifications are likely to create shocks that only have informational value, since they lack any ritualistic conferment of prestige. Accordingly, future studies should explore to what extent status shocks that are generated third-party mechanisms with no ceremony such as some rankings and certification contests, may have different triggers, mechanisms, and implications. Conversely, status contests or tournament rituals within organizations might carry only a ritualistic component. For instance, the “pitch-practice sessions” and “demo days” analyzed by Krishnan and colleagues (Krishnan, Cook, Kozhikode, & Schilke, 2020) likely only have an impact on the EE level of participants, with very limited impact of “signaling,” due to the low degree of uncertainty about quality among colleagues who know each other well. This points at further scope conditions and moderators that could be investigated in future studies – for instance, different characteristics of tournament rituals (formal vs. informal, public vs. private, field-level vs. organizational) may impact the magnitude and duration of their performance effects. It is also worth noting that not all rituals are necessarily successful (Collins, 2004). For example, perhaps receiving an award in a bleak environment in front of a small, non-excited crowd may even *reduce* the EE of the ritual participants, thereby resulting in an effect that is opposite to the one we theorize, which highlights the need to better understand the conditions that make rituals successful. Heterogeneity at the individual level might also influence the impact of ritual enactment. For instance, individuals’ status goals (Raz, Behfar, Cowen, & Thomas-Hunt, 2020), personality traits, and/or career stage may amplify or dampen the effects that we theorize.

Finally, it is important to reiterate that, in our setting and for the input providers we consider, we did *not* expect to find a signaling effect. While this allowed us to isolate and precisely estimate the implications of ritual enactment, at the same time, it kept us from making a comparison between the causal impact of signaling vs. ritual enactment, for example with respect to the magnitude and duration of their effects and exploring potential interactions between the two. Unlike the input providers we consider in our setting, in other settings audiences could hold significant uncertainty about actors’ quality and thus be affected by *both* signaling and ritual enactment. This can be further explored with respect to the reactions of regulatory and/or sanctioning agencies, customers, or the media, for example.

Practical Contributions

Our results also have implications for managers. While we focused on a field wide tournament ritual, such events could also be organized and enacted on a smaller scale within communities and organizations. For instance, Krishnan and colleagues (2020) analyzed the social dynamics of tournament ritual-like events within organizations, by studying pitch-meetings. Events like this are typically more informal and less structured than what we analyze, but could still be run by managers to achieve certain objectives, for instance to empower specific employees or to shift the status dynamics within a team. However, tournament rituals within organizations can also be more structured and formalized (Ashraf, Bandiera, & Lee, 2014). Managers can leverage these public ceremonies and ritualistic events to provide motivational and performative effects that are distinct from the mere announcement of winners or the use of incentive systems that are based on the recognition of technical performance. Making an award or a bonus "symbolic" through rituals can expand its potential benefits (Bethune, 1999). Along this line, since such events may result in resource reallocation among members due to changes in patterns of deference and affiliation, managers should monitor whether the new resource distribution remains fair or effective for the overall objectives of the organization. Future studies can also explore whether and how our theoretical framework applies to rituals that routinely happen within organizations. Our intuition is that ritual enactment can be leveraged further to understand processes that impact the life of organizational members (Islam & Zyphur, 2009).

Conclusion

While the organizational literature has all but exhausted the question "is status related to performance," our work shifts the focus toward asking "*how* does status *change* performance?" –

a direction that we believe may generate a new, exciting wave of studies. Shifting the focus implies carefully considering the performance implications of different status generating mechanisms (status stock vs. shock, including the different ways in which stocks might be built and change, and the different types of events that lead to shocks), the different theoretical pathways and causal mechanisms (informational/signaling vs. symbolic/ritualistic), of status' impact on different phases of the performance production process (input provision, transformation of inputs to outputs, and output evaluation), of the key scope conditions that may activate certain pathways (as we did with respect to audiences, for example), and of accurately estimating the causality of status effects via suitable empirical designs. By exploring some of these theoretical avenues, we hope that our study can serve as a blueprint for future research to continue to extend our knowledge and refine of our understanding of how status operates.

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Table 1. Summary Statistics and Correlation Table

		Mean	S.D.	Min	Max	1.	2.	3.	4.	5.
1.	Participation in the ASG	0.44	0.50	0.00	1.00					
2.	Post ASG	0.50	0.50	0.00	1.00	0.00				
3.	Progressive Game Number	0.50	5.77	-9.00	10.00	0.00	0.87			
4.	Num. of Previous ASG Selections	0.78	0.84	0.00	2.77	0.35	0.00	0.00		
5.	PER in Previous Season	18.68	3.98	6.80	31.70	0.53	0.00	0.00	0.52	
6.	Tenure with Team	3.56	3.17	0.00	18.00	0.26	-0.01	-0.01	0.49	0.32
7.	NBA Experience	6.33	3.90	0.00	19.00	0.01	0.00	0.00	0.64	0.13
8.	Game Won	0.56	0.50	0.00	1.00	0.07	0.00	0.00	0.08	0.07
9.	Home Game	0.50	0.50	0.00	1.00	0.00	0.00	0.00	0.00	0.00
10.	NBA Efficiency Rating per Minute	0.28	0.26	-2.00	2.50	0.28	0.00	0.00	0.18	0.34
11.	NBA Efficiency Rating over Usage	0.42	0.40	-2.67	4.00	0.21	0.00	0.00	0.12	0.23
12.	Minutes Played	33.72	8.20	1.00	64.00	0.34	-0.02	-0.02	0.13	0.29
13.	Touches per Minute	1.22	0.59	0.00	4.93	0.27	0.01	0.01	0.19	0.33
14.	Usage Rate	23.22	7.44	0.00	77.10	0.35	0.01	0.00	0.24	0.46
15.	NBA Efficiency Rating	9.94	9.00	-17.00	53.00	0.33	0.00	0.00	0.19	0.37

		6.	7.	8.	9.	10.	11.	12.	13.	14.
7.	NBA Experience	0.41								
8.	Game Won	0.07	0.08							
9.	Home Game	0.00	-0.01	0.23						
10.	NBA Efficiency Rating per Minute	0.15	0.00	0.25	0.10					
11.	NBA Efficiency Rating over Usage	0.11	0.00	0.24	0.10	0.84				
12.	Minutes Played	0.06	-0.11	-0.02	0.00	0.30	0.40			
13.	Touches per Minute	0.14	-0.01	0.11	0.05	0.48	0.41	0.20		
14.	Usage Rate	0.12	-0.07	0.00	-0.01	0.33	0.04	0.21	0.37	
15.	NBA Efficiency Rating	0.14	-0.03	0.23	0.09	0.94	0.88	0.45	0.48	0.36

n = 33,507. Coefficients bigger than |0.01| are significant at $p < .05$.

Table 2. Results of Difference-in-Differences Regression Analysis of Productivity [a]

	H1				
	Model 1	Model 2	Model 3	Model 4	Model 5
	NBA Efficiency Rating per Minute	*NBA Efficiency Rating per Minute*	*NBA Efficiency Rating per Minute*	*NBA Efficiency Rating over Usage*	*NBA Efficiency Rating over Usage*
Participation in the ASG * Post ASG		**.034***** **(.010)**	**.034***** **(.010)**	**.043**** **(.016)**	**.043**** **(.016)**
Participation in the ASG	.045*** (.004)	.029*** (.006)		.035*** (.010)	
Participation in the ASG * Prog. Game Number	.000 (.000)	-.002** (.001)	-.002** (.001)	-0.003 (.001)	-.003 (.001)
Num. of Previous ASG Selections	.007 (.007)	.007 (.007)		-.003 (.011)	
PER in Previous Season	.009*** (.001)	.009*** (.001)		.010*** (.001)	
Tenure with Team	.004*** (0.001)	.004*** (.001)	.006 (.004)	.004** (.001)	.007 (.006)
NBA Experience	.006 (.005)	.006 (.005)		.003 (.009)	
Game Won	.113*** (.003)	.113*** (.003)	.114*** (0.003)	.164*** (.004)	.166*** (.004)
Home Game	.028*** (.003)	.028*** (.003)	.028*** (.003)	.039*** (.004)	.039*** (.004)
Constant	-.045 (.037)	-.045 (.037)	.168*** (.015)	.067 (.061)	.277*** (.021)
Player FE	YES	YES	NO	YES	NO
Season FE	YES	YES	NO	YES	NO
Player*Season FE	NO	NO	YES	NO	YES
Game FE	YES	YES	YES	YES	YES
Observations	33,507	33,507	33,507	33,507	33,507
R-squared	0.279	0.279	0.324	0.244	0.297

a Robust standard errors in parentheses, clustered by Player * Season. * $p < .05$, ** $p < .01$, *** $p < .001$; two-tailed tests.

Table 3. Results of Difference-in-Differences Regression Analysis of Inputs Received and Overall Performance [a]

	H2					*H3a*	*H3b*
	Model 6	Model 7	Model 8	Model 9	Model 10	Model 11	Model 12
	Minutes Played	*Minutes Played*	*Touches per Minute*	*Touches per Minute*	*Usage Rate*	*NBA Efficiency Rating*	*NBA Efficiency Rating*
Participation in the ASG * Post ASG	**.079**	**.077**	**.069*****	**.069*****	**.668****	**1.314*****	**1.375*****
	(.286)	**(.284)**	**(.017)**	**(.017)**	**(.224)**	**(.339)**	**(.340)**
Participation in the ASG * Prog. Game Number Pre ASG							**-.030**
							(.040)
Participation in the ASG * Prog. Game Number Post ASG							**-0.151*****
							(.041)
Participation in the ASG	2.551***		.047***				
	(.257)		(.014)				
Participation in the ASG * Prog. Game Number	.025	.025	-.005***	-.005***	-.050*	-.091**	
	(.025)	(.025)	(.001)	(.001)	(.020)	(.029)	
Num. of Previous ASG Selections	1.163**		.016				
	(.369)		(.016)				
PER in Previous Season	.308***		.019***				
	(.052)		(.002)				
Tenure with Team	.115*	.101	.007***	-.000	.130	.148	.148
	(.048)	(.180)	(.002)	(.008)	(.097)	(.133)	(.134)
NBA Experience	-.195		-.019				
	(.430)		(.015)				
Game Won	-.536***	-.468***	.089***	.099***	.047	3.691***	3.693***
	(.083)	(.077)	(.005)	(.005)	(.062)	(.093)	(.093)
Home Game	.165*	.102	.045***	.041***	-.134*	0.802***	0.802***
	(.077)	(.074)	(.005)	(.004)	(.060)	(0.087)	(0.087)
Constant	26.987***	33.527***	.824***	1.122***	22.578***	6.631***	6.749***
	(2.946)	(.644)	(.106)	(.028)	(.350)	(.484)	(.492)
Player FE	YES	NO	YES	NO	NO	NO	NO
Season FE	YES	NO	YES	NO	NO	NO	NO
Player*Season FE	NO	YES	NO	YES	YES	YES	YES
Game FE	YES	YES	YES	YES	YES	YES	YES
Observations	33,507	33,507	33,507	33,507	33,507	33,507	33,507
R-squared	0.359	0.495	0.589	0.646	0.571	0.372	0.373

a Robust standard errors in parentheses, clustered by Player * Season. * $p < .05$, ** $p < .01$, *** $p < .001$; two-tailed tests.

Table 4. Results of Difference-in-Differences Regression Analysis of Player Productivity, Inputs Received and Overall Player Performance using All-Stars Announcement Date as Placebo [a]

	H1		*H2*		*H3a/b*
	Model 13 *NBA Efficiency over Minutes*	Model 14 *NBA Efficiency over Usage*	Model 15 *Touches over Minutes*	Model 16 *Usage Rate*	Model 17 *NBA Efficiency*
Participation in the ASG * Post Announcement	-.016	-.014	-.027	-.396	-.206
	(.010)	(.016)	(.017)	(.230)	(.361)
Participation in the ASG * Prog. Game Number Pre Announcement					.052
					(.039)
Participation in the ASG * Prog. Game Number Post Announcement					-.103
					(.060)
Participation in the ASG * Prog. Game Number	.000	-.000	.0011	.035	
	(.001)	(.002)	(.0017)	(.022)	
Tenure with Team	-.013**	-.012	-.021	-.166	-.400**
	(.004)	(.008)	(.014)	(.272)	(.147)
Game Won	.117***	.168***	.010***	.133*	3.746***
	(.003)	(.005)	(.005)	(.067)	(.100)
Home Game	.03***	.038***	.038***	-.189**	.755***
	(.003)	(.004)	(.005)	(.063)	(.094)
Constant	.246***	.356***	23.91***	1.217***	9.123***
	(.015)	(.031)	(.988)	(.049)	(.539)
Player*Season FE	YES	YES	YES	YES	YES
Game FE	YES	YES	YES	YES	YES
Observations	28,713	28,713	28,713	28,713	28,713
R-squared	0.332	0.299	0.580	0.654	0.374

a Robust standard errors in parentheses, clustered by Player * Season. * $p < .05$, ** $p < .01$, *** $p < .001$; two-tailed tests.

Figure 1. Process Model of a Status Shock Generated by a Tournament Ritual

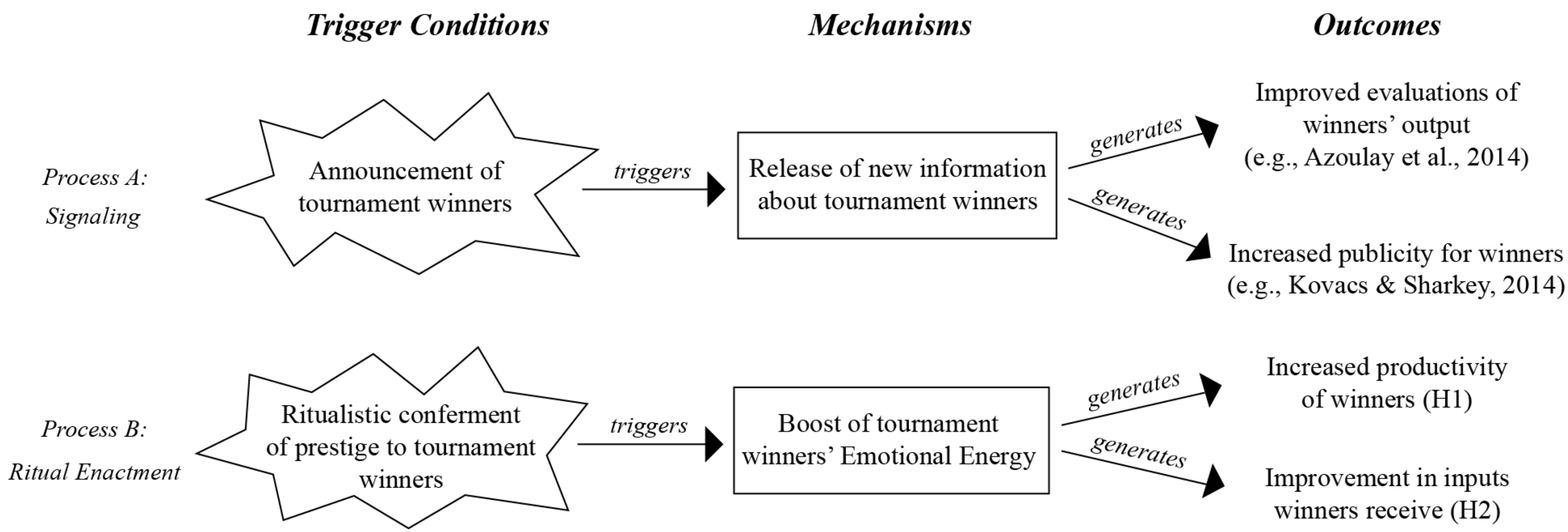
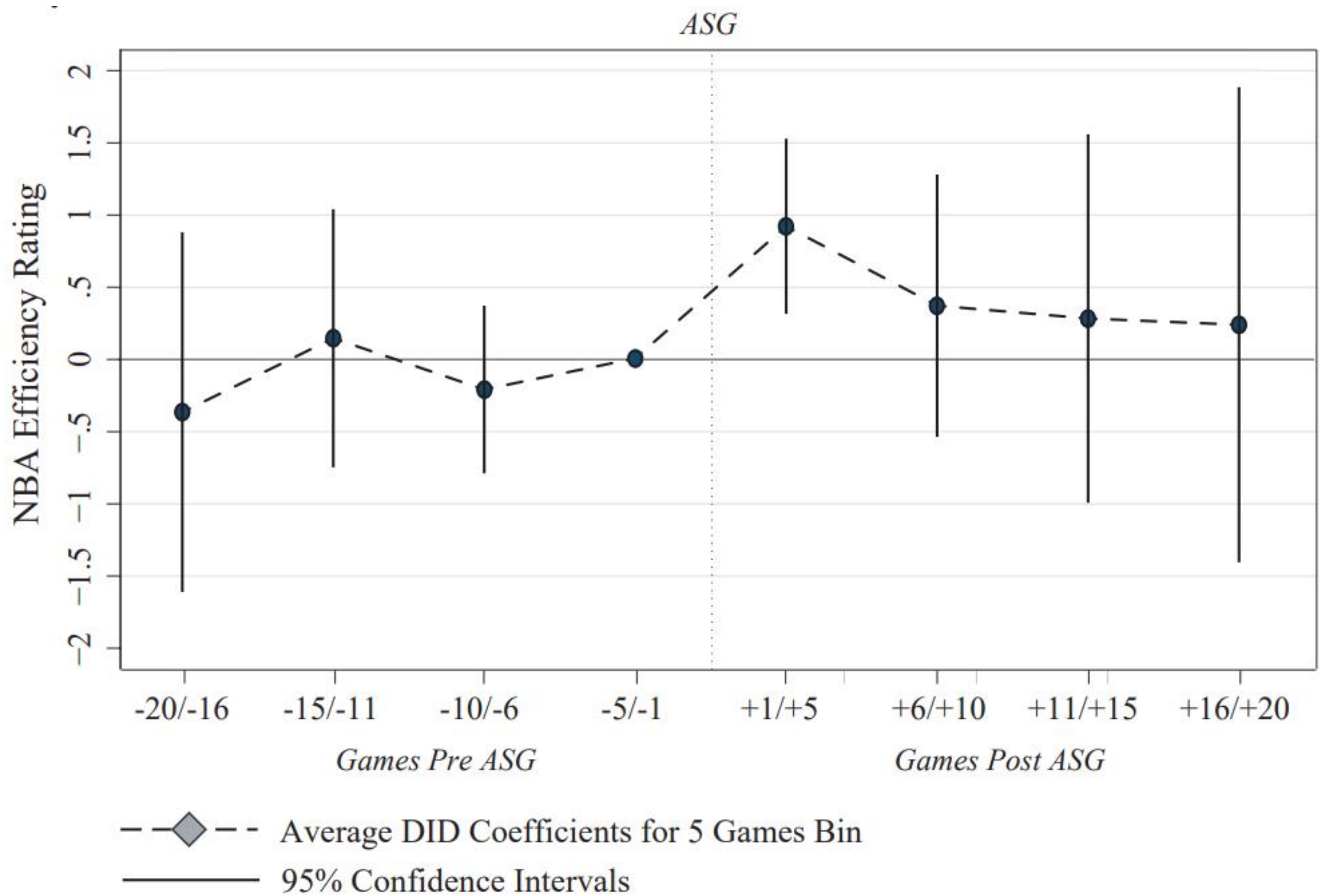


Figure 2. Audience-related Scope Conditions of Status Shock Processes that are Generated by a Tournament Ritual

	Audience interacts with winners	**Audience does not interact with winners**
Audience has high uncertainty about winners' quality	Signaling + Ritual Enactment (Processes A + B)	Signaling only (Process A)
Audience has low uncertainty about winners' quality	Ritual Enactment only (Process B)	Neither / No effect

Note: By "interacts with" we imply that audience members are involved in a meaningful exchange relationship with winners. These exchanges may include providing tangible inputs that are used by winners to produce outputs or that influence performance, or other types of tangible or intangible resources that are pertinent in many organizations, such as attention, deference, or esteem.

Figure 3. Temporal Duration of the Causal Effect of Participating in the ASG on Overall Player Performance



Note: Games in the -5 to -1 bin serve as our baseline category; the related coefficient is thus set to zero and does not report a confidence interval.

APPENDIX

Alternative Control Groups

A research design decision was which players to include in our treatment and control groups. The definition of our treatment group was straightforward; for each season, we included the 24 players who participated in the ASG (whether as starters or as reserves) in the treatment group. These are the players who experienced the status shock of participating in the ASG. The definition of our control group was less clear, as it required consideration of an important trade-off between increasing sample size or improving comparability between the treatment and control groups. Our theory posits that we should observe a post-ASG performance boost *only* for All-Star players who participate in the event, while other players should not experience a significant increase in performance after the ASG, no matter how close they were to making it to the ASG (the "41st chair effect"; Merton, 1968). On average, between the 1983/84 and 2016/17 seasons, 445 players were active in the NBA in each year. Of these 445, 60 ended up in the top 10 ranking during the fan voting stage of the All-Star selection process, and the rest (n = 385) were ranked outside the top 10. Using this information as our starting point, we identified three alternative strategies to define our control group.

Control Group A: Full Sample. The simplest strategy would be to consider as our control group all those players who are not selected to participate in the ASG (Group A). The benefits of using Group A as our control group would be to maximize our sample size and not discard data, which would come at the cost of having a control group that was the most dissimilar to the treatment group (imbalance in covariates between the two groups: 0.783).[12]

[12] These figures are generated by the "imbalance" option in the Coarsened Exact Matching (CEM) package (Blackwell, Iacus, King, & Porro, 2009) in Stata, and provide a measure of the overall (im)balance, or (dis)similarity, in covariates between the treatment and control groups. They are computed based on players' quality in the last season (*PER in Previous Season*), experience (*NBA Experience*), and role (position on court).

Control Group B: Almost All-Stars. A second strategy would be to restrict our control group to "Almost All-Stars," who are players who were ranked in the top 10 in fan voting but who ended up not being selected to participate in the ASG (Group B). This group is more similar to the treatment group (imbalance: 0.642), but this comes at the cost of discarding the data for players who are not in the top 10 in fan voting, reducing our sample size and statistical power.

Control Group C: CEM. A stricter strategy would be to use Coarsened Exact Matching (Iacus, King, & Porro, 2011) to select a subset of those players who were already "Almost All-Stars" to create a smaller control group (Group C) that is even more similar to the treatment group. We did this by matching on observable indicators of quality and role on court, specifically on players' (1) quality in the previous season (*PER in Previous Season*); (2) experience (*NBA Experience*); and (3) role (position played on court). Accordingly, we created a new sample by keeping only the treatment group (the participants in the ASG), as before, and players who were matched to those in the treatment group as a result of this procedure. Based on our criteria, the Control Group C retains 829 out of 942 player-season combinations that are in the larger control group used in our main estimations.[13] Our matching procedure reduces the imbalance between the treatment and control groups to 0.595 (from 0.642 for Control Group B above) by multivariate distance.

To strike a balance between sample size and comparability of the treatment and control groups, we chose Group B as the control group for the analysis reported in the main text of our manuscript. However, we ran all our main models using Control Groups A and C as alternatives,

[13] Stata's CEM command generates strata that include different numbers of treated and control units. To compensate, the command also returns weights to be used in regression analyses. Alternatively, it provides the option to restrict the number of units to be the same in the treatment and control groups (*k2k*; Blackwell et al., 2009). We applied both methods, finding consistent results (which are available from the authors). The coefficients we provide here come from the CEM sample without the k2k option.

which did not yield any major difference in the results we reported in the main text.[14]

Regression Discontinuity Design (RDD)

Description of the Estimation Procedure. Regression Discontinuity Design (RDD) is an approach used to compare outcomes just above and below a discontinuous threshold (see Flammer & Bansal, 2017 for an implementation in management research; see Lee & Lemieux, 2010 for a review of the method). The main idea behind the research design is that it is possible to determine the causal effect of a treatment when the treatment is assigned to some individuals according to a rank, where those obtaining a score higher than a specified threshold received the treatment. The assumption is that those individuals with scores just below the cutoff represent a close comparison to those just above the cutoff (who did receive the treatment). Under these circumstances, individuals close to a cutoff have characteristics that are randomly distributed, and thus the treatment can be considered as assigned at random. This assumption has holds if the individuals are unable to precisely control the treatment variable near the cutoff (Lee, 2008).

Applying RDD to ASG Voting Rankings. In our setting, a discontinuity is present because a minor difference in votes leads to a discrete change in a player's position in the ranking, thus distinguishing who participates in the ASG from who does not. For instance, in the 1994/95 season Latrell Sprewell became an All-Star with 861,223 votes as a guard in the West Conference. In the same Conference, Tim Hardaway just missed out on becoming an All-Star, being ranked 3rd guard with 853,784 votes. In that season Tim Hardaway had a PER of 18.3 compared to 14.1 for Latrell Sprewell. Accordingly, we can assume that a relatively small

[14] Hypothesis 1 is supported if we use Control Group A (NBA Efficiency Rating per minute: $p < .001$, NBA Efficiency Rating over Usage: $p = .002$) or Control Group C (NBA Efficiency Rating per minute: $p < .001$, NBA Efficiency Rating over Usage: $p = .004$). We also find support for Hypothesis 2 in both Control Group A (Touches per Minute: $p < .001$, Usage Rate: $p = .006$) and Control Group C (Touches per Minute: $p < .001$, Usage Rate: $p = .015$). Similarly, H3a and H3b are supported if we use either of these control groups (H3a: NBA Efficiency Rating, $p < .001$ for both; H3b: Post ASG decline supported at $p = .006$ for Control Group A and $p < .001$ for Control Group C, Pre-ASG trend is, as expected, stable, $p = .304$ for Control Group A and $p = .287$ for Control Group C).

difference of only 8,000 votes (about 0.5% of the votes) to be random (or being due to “luck”), and thus akin to exogenous.

This design thus allows us to observe, after the treatment (i.e., after the ASG), the performance of the first player in the voting ranking who did not participate in the ASG (e.g., Tim Hardaway in the example above) and compare it to the performance of the last player in the ranking who became an All-Star and thus experienced the status shock (e.g., Latrell Sprewell). We create a cut-off value corresponding to the number of votes obtained by the last player who made it (the 2nd in the rank, except for the Center position in which only one player is selected) for each season and each conference. In our example, the cut-off value for the Guard position ranking in the Western Conference in 1994/95 is equal to 861,223. Because each season, position and conference have their own unique cut-off values, we standardized the threshold across the rankings by subtracting the number of votes for the last player in (our cut-off value) from the absolute number of votes received by each player, creating the *Relative Votes from Threshold* variable. In the example above, the *Relative Votes from Threshold* for Latrell Sprewell is zero while, the *Relative Votes from Threshold* for Tim Hardaway is -7,439 (= 853,783 - 861,223). The consequence of this standardization is that for each ranking (all the combinations of season, conference and position) the last player who made it to the ASG has a value of *Relative Votes from Threshold* of zero, and all the other players have a *Relative Votes from Threshold* value that is calculated using this player (in the same season-conference-position ranking) as a baseline.

Definition of the Treatment and Control Groups. We can then implement a RDD estimation to test, by using progressively small intervals around the cut-off, whether there is a statistically significant increase in overall performance between players who participated in the ASG and players who did not. The players who fall in the interval above the cut-off become included in the treatment group, and those players in the interval *below* the cut-off become the corresponding control group. The narrower the interval around the cut-off, the more the treatment and control groups become homogeneous, and thus the more likely it is that the assumption that the players' characteristics (e.g., quality) are randomly distributed across the treatment and control groups holds.

We thus created four intervals based on the following ranges: 1) including only players occupying the 1st, 2nd and 3rd position in the rank and a value of *Relative Votes from Threshold* within 1.5 standard deviations from the cutoff; 2) including only players occupying the 1st, 2nd and 3rd position in the rank and with *Relative Votes from Threshold* within 1 standard deviation from the cutoff; 3) including only players occupying the 1st, 2nd and 3rd position in the rank and with *Relative Votes from Threshold* within 0.5 standard deviations from the cutoff; and 4) including only players occupying the 2nd and 3rd position in the rank and with *Relative Votes from Threshold* within 0.5 standard deviations from the cutoff. It is worth highlighting that this last sample (4) is a very narrow set, including only All-Star players who are 2nd in the ranking and only non-Allstar players who are 2nd or 3rd and were no more than 0.5 standard deviations away from participating it to the ASG.

Estimations: Results. The discontinuity is depicted in Figure A, which plots *NBA Efficiency Rating* for each player in each season for the 10 games after the ASG, against the player's *Relative Votes from Threshold* (which measures the number of votes that separated this player from the minimum votes required to participate in the ASG). The solid line represents the predicted values from second-order polynomials in votes that are estimated separately for either side of the voting cut-off that determined ASG participation. As can be seen, *NBA Efficiency Rating* is generally a continuous and smooth function of *Relative Votes from Threshold*, except at the cut-off, where we can observe a discontinuity. This discontinuity also indicates support for the causal net effect of participating in the ASG on players' post ASG performance, illustrating how participating in the ASG, even when selected by a relatively small number of votes, leads to an increase in overall performance.

--- INSERT FIGURE A AND TABLE A ABOUT HERE ---

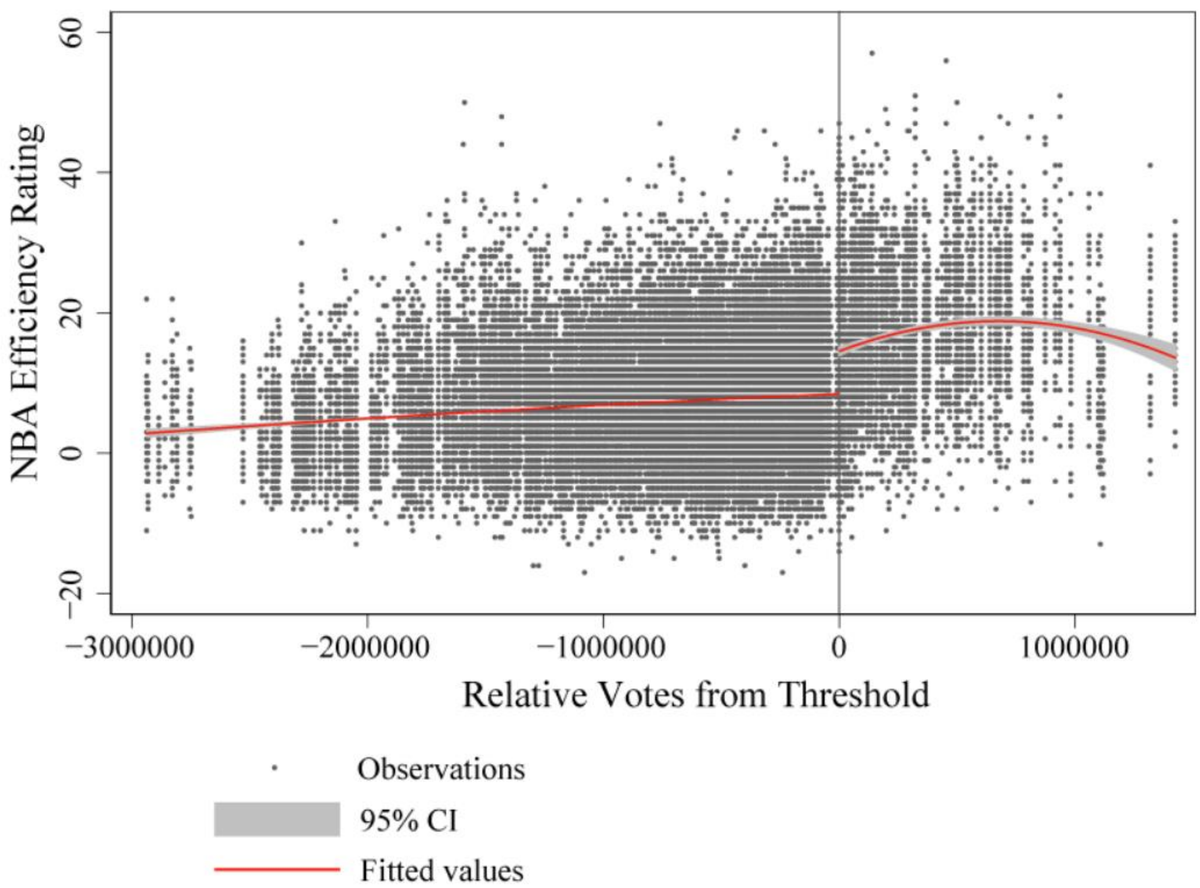
Table A reports the results of the estimation of the differences in *Overall Player Performance* in the 10 games after the ASG between the treatment (ASG participants) and control group (players who narrowly missed making it to the ASG), as defined by increasingly closer (more homogeneous) cutoffs. The estimation of the coefficient for *Relative Votes from Threshold* was split in two parts (left and right side of the cutoff) to allow for the possibility of different relationships between votes and performance below and above the discontinuity threshold. Table A confirms a significant positive difference in performance in the 10 games after the ASG for players who participated in the ASG. Model A-1 shows that All-Star players just above the cutoff have a performance that is 3.91 points higher than players who barely missed participating in the ASG (*NBA Efficiency Rating;* $p < .001$). This result is consistent across the four different intervals. In the narrowest specification (Model A-4), the *Relative Votes from Threshold (Above Cutoff)* has been omitted because of collinearity since only All-Star players ranked 2nd (*Relative Votes from Threshold* = 0) are included in the treatment group. Model 4 shows that post ASG, All-Star players ranked 2nd (e.g., Latrell Sprewell) perform better (*NBA Efficiency Rating:* $\beta = 3.45$, $p < .01$) than those who ranked 2nd or 3rd who missed the ASG by less than 0.5 standard deviations in votes (e.g., Tim Hardaway). Assuming that, within those intervals, players' other characteristics are randomly distributed, the observed difference can be interpreted as being caused by participating in the ASG.

Table A. Regression Analysis of Overall Player Performance using a Regression Discontinuity Design

	Model A-1	Model A-2	Model A-3	Model A-4
	NBA Efficiency Rating	*NBA Efficiency Rating*	*NBA Efficiency Rating*	*NBA Efficiency Rating*
Participation in the ASG	**3.905*** **	**3.660*** **	**3.847** **	**3.447** **
	(.999)	**(1.034)**	**(1.255)**	**(1.239)**
Relative Votes from Threshold (Below cut-off)[b]	.004**	.006*	.004	.005
	(.001)	(.003)	(.007)	(.006)
Relative Votes from Threshold (Above cut-off)[b]	.008***	.010***	.014***	
	(.002)	(.002)	(.004)	
Num. of Previous ASG Selections	.740	.676	.558	.975
	(.506)	(.515)	(.568)	(.682)
PER previous season	.426***	.444***	.449***	.436***
	(.0710)	(.0690)	(.0743)	(.0996)
Player Tenure with the Team	.152*	.136	.121	-.0451
	(.0698)	(.0738)	(.0774)	(.103)
NBA Experience	-.263**	-.281**	-.263*	-.284*
	(.0939)	(.0971)	(.104)	(.131)
Game Won	3.934***	3.964***	4.064***	3.650***
	(.335)	(.352)	(.361)	(.482)
Home Game	1.033**	1.176***	1.183***	1.022*
	(.317)	(.328)	(.353)	(.449)
Player Rank	1.364**	1.482**	1.607**	1.202
	(.523)	(.552)	(.563)	(.870)
Constant	-4.455	-4.699	-5.241	-3.075
	(2.325)	(2.432)	(2.669)	(3.471)
Ranks included in treatment	1, 2, 3	1, 2, 3	1, 2, 3	2, 3
Intervals from cut-off (in S.D.)	-/+ 1.5	-/+ 1	-/+ 0.5	-/+ 0.5
Observations	3,207	2,938	2,608	1,489
R-squared	0.227	0.196	0.152	0.143

a Robust standard errors in parentheses, clustered by Player * Season. b Coefficients and standard errors are multiplied by 1000.
* $p < .05$, ** $p < .01$, *** $p < .001$; two-tailed tests.

Figure A. Discontinuous Effect of Relative Votes from Threshold on NBA Efficiency Rating in the 10 Games post ASG



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