

I'd Like to Thank the Academy, Team Spillovers, and Network Centrality

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1. A More Nuanced Version of the Oscar Nomination Outcome

In the main narrative of this article, we modeled the odds of Oscar nomination as a single outcome for a single population, but there are really two populations, each of which faces two outcomes. Men do not compete with women for Academy acting nominations, so it is appropriate to split the sample by gender. This not only makes the model more realistic, but it effectively allows an interaction between gender and every other independent variable, enabling one to see whether artistic achievement is defined by different criteria for men and for women (Simonton 2004) and whether men and women face different career dynamics (Levy 2003; Lincoln 2007). Furthermore, there are two types of nominations: lead and supporting. There is no firm a priori basis for distinguishing “lead” versus “supporting” performances, and the Academy has nominated performances for what is intuitively the “wrong” category on several occasions (Levy 2003). The most realistic model is thus to treat supporting

and lead nominations as two outcomes for which all performances of the appropriate gender are eligible. In addition to these fundamentally empirical concerns, such an approach can help illuminate the robustness and contingencies of our theoretical concerns.

In Table S1, Model S1 does this for men and model S2 for women. Both models use multinomial logit with random effects by film specified within the gllamm (Generalized Linear Latent And Mixed Model) module for Stata 10 (Rabe-Hesketh and Skrondal 2005; Rabe-Hesketh, Skrondal, and Pickles 2004). Because similar unobserved aspects of films should be relevant to both the lead and supporting outcomes, we constrain the model to a shared random effect for both outcomes to avoid giving excessive weight to a random intercept in a model with sparse outcomes.

This more realistic equivalent to Model 4 is largely consistent with the flatter version. A few specific comparisons are worth noting. In the simpler version of the same analysis

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presented in Model 4, all experience effects are mediated by status except for an “aging out” effect. In the more complex analysis presented here, this effect only applies to men’s chances at lead roles. This contrasts with findings from the literature that aging women are especially prone to be shunted aside (Levy 2003; Lincoln and Allen 2004; Simonton 2004). The discrepancy between the literature and our findings probably has two sources. First, effects of women’s career trajectories may be mediated by the variables in our specification, such as status. Second, the literature tends to focus on first nomination, and nominated older women are more likely than older men to be prior nominees.

Major distributors are important for both genders, but especially for men. This implies that women are less disadvantaged by appearing in small pictures, which is consistent with the finding that best picture nominations are more highly associated with nominations for best actor than for best actress (Simonton 2004). Credit centrality and previous nomination are associated with nominations in both categories, but the effect is particularly strong for leading nominations. This suggests a career trajectory in which character actors graduate to being moderately high status and finally to being at the pinnacle of Hollywood.

The most important deviations from Model 4 found in models S1 and S2 are in spillovers. Working with elite writers and directors are equally important for men and women and lead and supporting nominations. The difference is in spillover effects from Academy-nominated costars. Having prior-nominated costars has no effect on the odds of getting a lead nomination. For men and women, however, elite costars are very beneficial for getting a supporting nomination. Although the

coefficient appears to be the same size as the writer effect and smaller than the director effect, when one considers the distributions of the variables the total effect of costars is closer to that of the director. The distinction in the effect on the two outcomes is probably that elite costars are competition for the lead nomination, counterbalancing any positive spillovers they might provide, whereas for a supporting nomination, there is no downside to appearing alongside a prestigious costar. Robert Forster exemplifies this dynamic; despite having more screen time in *Jackie Brown* (1997) than either of his prior-nominee costars (Robert DeNiro and Samuel L. Jackson), Forster was nominated for best *supporting* actor.

2. The Hollywood Blacklist as a Natural Experiment in the Nature of Spillovers

In 1947, the House Committee on Un-American Activities (HUAC) held hearings on alleged Communist propaganda in Hollywood. Ten screenwriters served jail time for contempt of Congress because they refused to either testify or invoke the fifth amendment defense against self-incrimination. (They claimed that the first amendment right to free association implied a right to keep political affiliations a secret, a legal theory advocated by party lawyers but rejected by the courts). This episode sparked the Hollywood blacklist, in which right-wing social movements, HUAC, and the studios cooperated to identify Hollywood workers who had ever associated with the Communist Party or Communist front organizations and prevent them from working in Hollywood.¹ Blacklisted workers

¹ During the Popular Front period (1934 to 1939), the Communist Party made common cause with liberals and progressives on such issues as labor disputes, race relations, and anti-fascism. Much of this

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could only be reaccepted by the Hollywood mainstream if they publicly recanted and accused specific others with whom they had been associated in the past (Navasky 1980). With such notable exceptions as nine of the Hollywood Ten, few Hollywood workers were still associated with the Communist Party by the late 1940s. Nonetheless, many people who were former members or fellow travelers were blacklisted when they refused to testify on principle.

The blacklist was particularly severe for writers, because of all workers in Hollywood, writers were the most likely to have associated with the Communist Party during the Popular Front period (Radosh and Radosh 2005). Being blacklisted was potentially less severe for a writer than for an actor, however, because it was possible (albeit difficult) for blacklisted writers to work secretly, either by adopting a fictitious pseudonym or by having a real person (usually a friend of the writer or a relative of the producer) act as a “front” for the writer (Buhle and Wagner 2004; McGilligan and Buhle 1997). For instance, Dalton Trumbo maintained a prolific output during the blacklist by working through six different fronts, two of whom won Oscars on his behalf. After each of these awards, Trumbo found a new front to avoid suspicion.

Although it is difficult to prove conclusively, it seems that the specific identities of fronts and pseudonyms were not common knowledge, if for no other reason

cooperation occurred in front organizations whose leaders were mostly Communist Party members or fellow travelers but whose liberal rank-and-file members were often ignorant of the organization’s Communist affiliation. During the blacklist, right-wing social movements collected names from old petitions sponsored by these front organizations; many liberals who never had any direct connection to the Communist Party were thereby blacklisted.

than a well-organized, anti-Communist social movement that included former FBI agents and other investigators was enforcing the blacklist and would have publicized and punished indiscreet fronts. Furthermore, there are telling coincidences. *Hellcats of the Navy* (1957), for example, starred Ronald Reagan and was made during the period in which Reagan was touring the country to give speeches against Communism to workers at General Electric factories. It is hard to believe that Reagan would have made the film if he knew that the film’s screenwriter “Raymond T. Marcus” was really a pseudonym for Bernard Gordon, who was blacklisted after he was named in HUAC hearings as a former member of the Communist Party. Blacklisted writers’ efforts to earn a living by working under assumed names thus provides a natural experiment as to the nature of spillovers, because these writers could only offer their talent but not their prestige to the actors who appeared in their films.

Between 1986 and 2000, the Writers Guild of America made strenuous efforts to document the front system and reallocate screen credits to the blacklisted writers who actually contributed to these films (Writers Guild of America 2000). Based on this research, we identified 29 films in which a screenwriter with a prior Oscar nomination contributed to a film under a pseudonym or using a front. We then decomposed the variable “writers with past nominations” into writers working under their own names and writers using fronts or pseudonyms. If spillovers are mostly of prestige, there should be no benefit from working with elite but uncredited writers, but if spillovers are mostly of talent then the variables should have comparable effects. Finally, we limited the analysis to the period of the blacklist (1948 to 1972) and reran our fully-specified

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random effects model.² Table S2 presents the results.

The coefficients for spillovers from “open” and “secret” contributions are similar, and in fact that of “secret” contributions is larger. However, because so few films involved secret contributions by writers with prior Oscar nominations, the standard error is large and the effect is not statistically significant. The natural experiment of blacklisted writers working through pseudonyms suggests that spillovers are primarily of talent rather than prestige, but because of the experiment’s very limited size, this evidence should be understood as tentative.

3. Periods in Hollywood History

Although the analyses presented in the main narrative of the article pool together films from 1936 through 2005, this span encompasses three fairly distinct periods for the Hollywood film industry. From very early in its history, Hollywood developed “the studio system,” in which the industry was dominated by vertically-integrated firms. This system unraveled with the California labor case *DeHavilland v. Warner Brothers* (1944) and the federal antitrust case *US v. Paramount* (1948). Following the studio system was a long transitional period, in which Hollywood operated as a project-based industry, but in such respects as release patterns it still resembled the studio system. This began to change when *The Godfather* (1972) became the first film to

earn more than 100 million dollars (Baker and Faulkner 1991). Shortly thereafter, Hollywood became obsessed with replicating this success and entered the blockbuster era, which was characterized by writer-director filmmakers and “opening wide” on hundreds of screens.

Hollywood history can roughly be divided into the studio era (1936 to 1948), a transitional period (1949 to 1972), and the blockbuster era (1973 to 2005). In Table S3, we allow key variables to interact with period to test how sensitive our findings are to these changes in Hollywood industrial structure and business practice. (We do not specify additive effects for a period dummy set because performances do not compete for nominations with performances from other years. Any additive effects of a period dummy set are therefore captured by the variable “films per year.”) Because one of the major historical issues dividing the periods was the strength of the major studios, we allow the effect of “major” distributor dummy to vary by period. Its effect is strong in all periods, although not surprisingly, it is strongest during the studio system. Likewise, status (centrality in the credit network) has strong effects in all three periods, with a slight tendency to be more powerful in recent times.

The spillover effects of working with prior-nominated writers and directors are significant in all three periods. However, spillovers from prior-nominated costars are significant in the first two periods (i.e., the studio system and transitional period) but not during the blockbuster era. While writer and director spillovers are somewhat stronger during the studio system, this is entirely attributable to the lagged specification (i.e., we only measure spillovers from colleagues with a prior nomination). When the specification

² The blacklist is usually said to have ended when Stanley Kubrick insisted that Dalton Trumbo be given a writing credit for *Spartacus* (1960). The WGA’s research, however, found that a few blacklisted writers continued to use pseudonyms as late as 1972. Limiting our analysis to 1948 through 1960 provides the same results as running it from 1948 through 1972.

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includes prior- and newly-nominated team members, very similar coefficients prevail for each period. These alternative specifications are available from the first author on request.

We attribute this problem with the lagged specification to a greater preponderance in later periods of writing and directing nominees who practice high concept approaches. High concept artists often suffer regression to the mean after a great achievement, whereas craftsmen tend to be very consistent (Galenson 2006). This implies that while a great past achievement (as indicated by Oscar nomination) is informative about the current efforts of a craftsman, it is not very informative about the current efforts of a high concept artist. For example, it is not surprising that two actors were nominated for working with M. Night Shyamalan on *The Sixth Sense* (1999), but neither Shyamalan nor any of his above-the-line collaborators have been nominated for any of the films he has made since then. We are currently working on another paper in which we demonstrate this shift and link it to the decline in the studio system, especially the rise of free agency after the *DeHavilland* case.

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Table S1. Multinomial Logistic Regression Models of Academy Award Nominations, 1936 to 2005

Variable	Model S1		Model S2	
	Actors		Actresses	
	Supporting	Lead	Supporting	Lead
Baseline				
Films per Year (100s)	-.194*	-.414***	-.304**	-.526***
	(.085)	(.093)	(.093)	(.097)
Genre: Drama	1.860***	1.732***	1.771***	1.843***
	(.200)	(.211)	(.209)	(.223)
Genre: Comedy	.139	-.134	.028	-.290
	(.163)	(.179)	(.167)	(.181)
Genre: Biography	.824***	1.228**	.787**	1.091***
	(.231)	(.224)	(.260)	(.255)
Major Distributor	.887***	.614**	.315	.353
	(.205)	(.204)	(.180)	(.190)
Cast Size	.002	-.001	-.002	-.009*
	(.003)	(.003)	(.004)	(.004)
Release Date	.005***	.006***	.005***	.006***
	(.001)	(.001)	(.001)	(.001)
Human Capital				
Past Films 0 to 5	-.019	.101	.054	.016
	(.052)	(.071)	(.046)	(.058)
Past Films 6 to 20	.028*	-.010	-.012	-.008
	(.014)	(.015)	(.015)	(.015)
Past Films >20	-.003	-.017***	-.007	-.010
	(.003)	(.004)	(.008)	(.007)
Past Nominations	1.032***	2.410***	1.182***	2.339***
	(.144)	(.145)	(.155)	(.156)
Status (Credit Centrality)	.027**	.073***	.020**	.062***
	(.008)	(.012)	(.007)	(.010)
Spillovers				
Costars with Past Nominations	.216***	-.105	.351***	-.052
	(.053)	(.061)	(.055)	(.065)
Director with Past Nominations	1.101***	1.160***	1.021***	1.021***
	(.144)	(.151)	(.154)	(.161)
Writers with Past Nominations	.267**	.232*	.339**	.308**
	(.099)	(.104)	(.106)	(.111)
Intercept	-13.030***	-16.673***	-11.010***	-14.078***
	(.723)	(1.010)	(.671)	(.883)
ρ_{film}	.457		.491	
Log Likelihood	-3492.966		-3033.662	
N Performances	103,433		44,475	
N Films	16,296		15,596	

Note: Standard errors are in parentheses.

* $p < .05$; ** $p < .01$; *** $p < .001$ (two-sided z-tests).

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Table S2. Logistic Regression Models of Academy Award Nominations with Blacklisted Writers Working Through “Fronts,” 1948 to 1972

Variable		
Baseline		
Films per Year (100s)	-.597***	(.109)
Genre: Drama	2.297***	(.247)
Genre: Comedy	.386	(.234)
Genre: Biography	1.091**	(.345)
Major Distributor	.322	(.203)
Cast Size	-.022*	(.010)
Release Date	.007***	(.001)
Female	.831***	(.115)
Human Capital		
Past Films 0 to 5	-.056	(.047)
Past Films 6 to 20	-.012	(.013)
Past Films >20	-.010*	(.004)
Past Nominations	1.758***	(.141)
Status (Credit Centrality)	.047***	(.007)
Spillovers		
Costars with Past Nominations	.229**	(.072)
Director with Past Nominations	1.530***	(.194)
Writers with Past Nominations (working openly)	.343**	(.131)
Writers with Past Nominations (working through a front)	.975	(.686)
Intercept	-13.404***	(.753)
ρ_{film}	.595	
Log Likelihood	-1945.330	
N Performances	58,293	
N Films	6,607	

Note: Standard errors are in parentheses.

* $p < .05$; ** $p < .01$; *** $p < .001$ (two-sided z-tests).

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Table S3. Logistic Regression Models of Academy Award Nominations with Interactions by Period

Variable		
Baseline		
Films per Year (100s)	-.401***	(.070)
Genre: Drama	1.919***	(.134)
Genre: Comedy	-.059	(.118)
Genre: Biography	1.079***	(.181)
Major Distributor (1936 to 1948)	.949**	(.360)
Major Distributor (1949 to 1972)	.446*	(.197)
Major Distributor (1973 to 2005)	.533**	(.184)
Cast Size	.001	(.003)
Release Date	.006***	(.000)
Female	.869***	(.069)
Human Capital		
Past Films 0 to 5	.026	(.029)
Past Films 6 to 20	.006	(.008)
Past Films >20	-.008**	(.002)
Past Nominations	1.723***	(.082)
Intercept	-14.193***	(.511)
Status (Credit Centrality)		
(1936 to 1948)	.039***	(.006)
(1949 to 1972)	.047***	(.006)
(1973 to 2005)	.049***	(.006)
Spillovers		
Costars (1936 to 1948)	.358***	(.090)
Costars (1949 to 1972)	.236***	(.067)
Costars (1973 to 2005)	.004	(.059)
Director (1936 to 1948)	1.456***	(.235)
Director (1949 to 1972)	1.491***	(.180)
Director (1973 to 2005)	.855***	(.167)
Writers (1936 to 1948)	.512**	(.162)
Writers (1949 to 1972)	.344**	(.122)
Writers (1973 to 2005)	.250*	(.120)
ρ_{film}	.549	
Log Likelihood	-5484.974	

Note: N performances = 147,908; N films = 16,392. Standard errors are in parentheses.

* $p < .05$; ** $p < .01$; *** $p < .001$ (two-sided z-tests).

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