They Can't All Be Stars The Matthew Effect, Cumulative Status Bias, and Status Persistence in NBA All-Star Voting

> Thomas Biegert (LSE) Michael Kuehhirt (University of Cologne) Wim van Lancker (KU Leuven)

LSE Depertment of Social Policy ISPP Seminar Series, Dec 1, 2020



Background ●0000	Data & Analytical Strategy 0000000	Findings 00000	

# The Curious Case of Kobe Bryant's 2016 All-Star Election

- Why was Kobe Bryant elected an NBA All-Star in 2016?
- **NBA All-Star game** = annual exhibition game for the best players in the league elected by the public and the coaches
- Bryant one of the best players of his generation but way past his peak in his last years
- public explanations for Bryant's persistent status exhibit Matthew effect
  - some argued he earned it due to his legacy → cumulative advantage

• some argued he was still one of the best players  $\rightarrow$  status bias

Background	Data & Analytical Strategy	Findings	Conclusion	Backup
o●ooo	0000000	00000	00	00

## A Feedback Loop of Status Distinction

#### Matthew 25:29

"For unto every one that hath shall be given, and he shall have abundance: but from him that hath not shall be taken away even that which he hath"

- **Merton (1968):** high status helps academics accrue further advantages (e.g. grants, citations)
- people use status signal as a short-cut to infer performance/quality (→ **uncertainty**)
- $\rightarrow\,$  self-reinforcing process of **cumulative (dis-)advantage**  $\rightarrow\,$  Matthew effect
- $\rightarrow~$  **feedback** loop that leads to stable status hierarchies (Ridgeway & Correll 2006)

Background	Data & Analytical Strategy	Findings	Conclusion	Backup
00●00	0000000	00000	00	00
	Mecl	hanisms		

- **mechanism 1**: *socially endogenous investment* = actors use add. resources to improve their performance
- **mechanism 2**: *status bias/socially endogenous inference* = biased evaluation of performance because of status signals
- $\circ\,$  status-based model of market competition: if first mechanism dominant  $\rightarrow$  retaining status meritocratic (Podolny 1993, 2005, Lynn et al. 2009)

Background 000●0	Findings 00000	

#### Previous Research

- Matthew effects found in a variety of different settings: science (Allison et al. 1982, Bol et al. 2018), business (Benjamin & Podolny 1999), culture (Link et al. 2013), sports (Kim & King 2014)
- studies show status biased evaluations in citations, research grants, wages, performance evaluations,...
- plenty evidence for socially endogenous inference as well
- but studies usually ...
  - ...do not analyse effect of status signals **subsequent status**
  - ...have **difficulty to isolate status bias** from performance
  - ...do not investigate **accumulation over time**

Background 00000	Data & Analytical Strategy 0000000	Findings 00000	Backup 00

## Our Contribution and Research Questions

- we **add** an explicit investigation of how status leads to confirmation of that status → **status persistence**
- we **isolate status bias** from performance pre- and post-treatment
- we model accumulation over time and isolate cumulative status bias
- $\circ~$  we use a setting with clear-cut meritocratic criteria and low uncertainty  $\rightarrow$  **conservative test**
- **RQs:** Does an NBA All-Star nomination last year increase the chance of becoming an NBA All-Star this year?
- How large a role does status bias play?
- Is the process cumulative, thus further entrenching status year after year?

Background	Data & Analytical Strategy	Findings
	•000000	

# Empirical Setting and Data I

- NBA All-Star game played midseason every year
- **fans elect 5 starters** for each team (East vs. West) ideally based on performance
- coaches add 7 reserves for each team
- **data** on all NBA players 1984-2016 (N=1,890, n=10,627)
- data on who was elected to the **All-Star** game each year (N=172, n=626)

Background 00000	Data & Analytical Strategy 0●00000	Findings 00000	

## Empirical Setting and Data II

Sections   Intel   Intels								_	_	_	_	_	_	_	_
BASKE	TRALL				_	-								tion, et	
REFEREN	CE								ceae o			san,	240	tion, et	
Report Seams 5	asons La	oders	6004		-	et cyn		(ka1		5140	head		No.	sister	~
Kobe Brya		5 Adva	nce	d Ga	m	e Lo	9								
Red Martin No. 1		him Marian									1	-	A Dat		
Particle, Strat Forward	admonyout	Brodu Tur													
Barn Canad 23, 137	THORE										- 6	•••			h finan Mit
Ded. Joseph Di. 2020															
											1	1	24		
Career 1040 250 52 53	100 1000	~ ~										_			
Gener 1345 250 52 43	447 38.8	82.48	1	4 10	2.7										
Edia Byort Charles															
The other Delivery and the second															
- Bethin to Beets Game Los															
2015-16 Regular Season															
R. C. Data Age Ter Over	LTO 126.M	101 101	10	11.4	14	7.8	3.2	10	1.1	36.7	-	206	10.9	-	
	1000 1 28.02	10.00	8.2	1.0	9.2	2.5	4.8	44	16.4	31.4	10	134	1.2	-10	
· · · · · · · · · · · · · · · · · · ·	1.(10) 1.00.00 1.(10) 1.07.00		**	-	**	- 14	**	**	**	817	-	10		-	
	W1040 1 10.44	183 381	4.4	4.4	4.4	10.0	4.4	44	11.1	84.5		101	14		
· · · · · · · · · · · · · · · · · · ·	1.00 1.00.00	168 300	6.0	6.8	8.8	24.8	1.6	44	43	81.5	**	224	2.8	-14	
<ul> <li>211112 Prov (6.4 K)</li> <li>211112 Prov (6.4 K)</li> </ul>						14									
	1141 128.81		6.0	18.1		23.8	6.0	44	114	11.0			8.1		
10 1 202102 11 00 00 10	WO-121 1 28-43	.49 .30	6.0	11.1	11.7	87	2.8	44	Н2	31.8	14	0	11.4	6.4	
	1040 1094			11.0	4.4	417	**		11.1	11.0	- 18	1.01	1.0	14	
	1010 1010		**	11.7	-	-		**	**	***	**	***			
N 12 212 212 21 21 20 10 10 10	1040 1084	44. 35	4.4	3.2	1.4	11.0	4.4	44	42	88.5		1.01	-	3.2	
20 13 212 12 20 10 000 VA	1040 1080		2.4	4.0	1.1	13.3	1.4	44	44	21.6		100	2.8	1	
N 11 212 D 10 10 10 10 10			- 12	3.2	-11	100	10	쁥	- 22		4		10	÷.	
			- 11	***	**	-	**	**	-	-	-		**	-84	
An of Balance share we do not	1(41) 1(45.51	- 87 - 857													
				38.4					14.1		200	1.11		1.2	
20 10 252-12-00 10-00 10 0 0 0 00 20 10 252-12-00 10-00 10 0 0 00	1040 3 (M.M.		- 10	10	12	14	24		0.3	34.5	1	-	33		
		12 40	1.4		10.7	43.8	45	44	4.4	13.0	104		**		
20 01 003.00.00 10 00 VA 100 20 03 001 00 00 00 00 VA 100	1018 1 17 M	-	- 55	- 22	22	22	10	22	15	22	1	100	11	- 22	
27 211-0-10 D-10 (0, + 0)	L(40)					Do be								-	
30 14 211-12 19 10 10 10 10 10	WOHE 1 28-12 LODD 1 20-04		3.8	33	13	247	1.8	13	3.6	81	124	124	20.3	16.2	
2010 2010 2010 2010 2010 2010 2010 2010	1010 3 28 04		- 12	112	-	100	38	쁥	10	22	-12	-		÷.	
	LOND 3 24-04 LOND 3 28-04	320 AC	10	114	-1	312	-	-	143	10	310	100	1		
NO 10 202-12-20 17-127 (45 0 CM	WO-RE 1 28-04		-22	-02	-	- 22	- 22	2	11.5	- 22	-0	10	-11		
						1 and									
	#1920 1.020					10									
X N 201000 D CP (8 + 10)	1.00 X 20 M		42	42	4.4	28.2	6.8	14		10					
N N 2010 0 10 05 05 N 2010 0 10 05 05	1249 1(28.04 1240)	A8 A8	8.8	8.4	8.3	342	1.8	44	42	364	208	134	10.3	-	
4 11 2010 (2 14 H) M	WORL 1 1844		4.0	18.1	9.2	13.4	3.2	44	12	314			2.2		
this make App Tim Hyp		-	-		***		1.0		-	-	-	-	-	-	
41 10 2010 (2010) 10 10 (2010) 10 10 10 10 10 10 10 10 10 10 10 10 10			3.8	4.0	3.4	24.8	1.0	44	4.0	347	- 10	1.0		-6.5	
	1040 318.00		4.0	10	4.0	24.5		**	***	114	2	114	11	-81	
In IT STATUS IN OF US, 300	1.0480 1.98.88		- 22	4.5	**	8.5			-	***		10	10		
on the state and the own loss of the	1.040 1.08.00				5.4				87	\$2.5	~	1.94	1.8	45.0	
AT ADDRESS OF AN ALL DR.	1041	-		10.0		140	-		10.0	-					

- information on characteristics such as race, height, position,...
- statistics on **performances** (points, rebounds, assists,...)
- information on player's situation (team performance (win %), average minutes played, made playoffs, big market team)
  - data on all games for every player (1.2 million game logs)
  - construct averages for (1) the season up to the All-Star game and (2) the entire period between All-Star games

Background 00000	Data & Analytical Strategy 000000			
	]	Modelling	I	

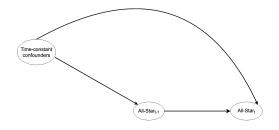
$$log(y_{it}) = \beta_0 + \beta_1 x_{it-1}$$

- logistic regression with player-clustered SE
- **unadjusted association** between All-Star at t-1 and t



Background 00000	Data & Analytical Strategy 0000000	Findings 00000	
	<b>N</b> / T 1 11	· TT	

#### Modelling II

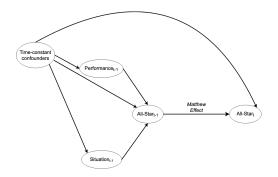


$$log(y_{it}) = \beta_0 + \beta_1 x_{it-1} + \beta_2 z_i$$

• adjust for **constant confounders**  $z_i$  (age when entering league, time since, height, position, race)

Background 00000	Data & Analytical Strategy 0000000	Findings 00000	
	יור דיזער	TTT	

#### Modelling III



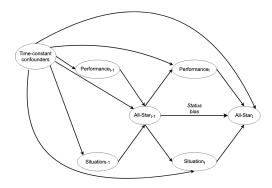
$$log(y_{it}) = \beta_0 + \beta_1 x_{it-1} + \beta_2 z_i$$
$$+ \beta_2 w_{it-1}$$

• adjust for **pre-treatment performance and situation**  $w_{it-1}$  (pts, rbs, ass, team win%, av min, playoffs, big market team)

 $\rightarrow$  estimates total Matthew effect

Background	Data & Analytical Strategy	Findings	Conclusion	Backup
00000	0000000	00000	00	00
	<b>N</b> <i>I</i> 1 11'	ττ τ τ τ		





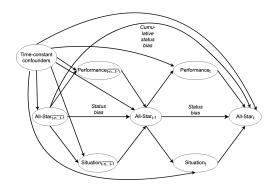
$$log(y_{it}) = \beta_0 + \beta_1 x_{it-1} + \beta_2 z_i$$
$$+ \beta_3 w_{it-1} + \beta_4 w_{it}$$

 adjust for post-treatment performance and situation w<sub>it</sub> (pts, rbs, ass, team win%, av min, playoffs, big market team)

 $\rightarrow$  estimates **status bias** 

Background 00000	Data & Analytical Strategy 000000●	Findings 00000	

#### Modelling VI-VII



$$log(y_{it}) = \beta_0 + \beta_1 x_{it-1} + \beta_2 z_i$$
$$+ \beta_3 \overline{w_{it-n...t-1}} + \beta_4 w_{it}$$
$$+ \beta_5 \overline{x_{it-n...t-1}}$$

adds cumulative
 All-Star elections

 $\overline{x_{it-n...t-1}}$  and cumulative mediators

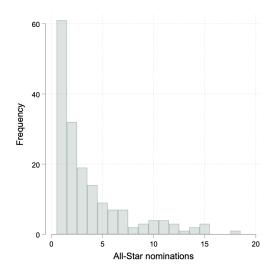
 $\overline{w_{it-n...t-1}}$ 

(+interaction)

 $\rightarrow$  estimates **cumulative** status bias

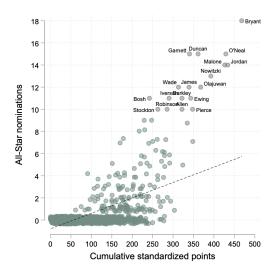
Background 00000	Data & Analytical Strategy 0000000	Findings •0000	

# Distribution of NBA All-Star Elections Across Players Ever Nominated



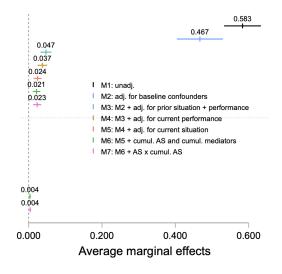
	Findings	
	0000	

# Cumulative All-Star Nominations and Points Scored



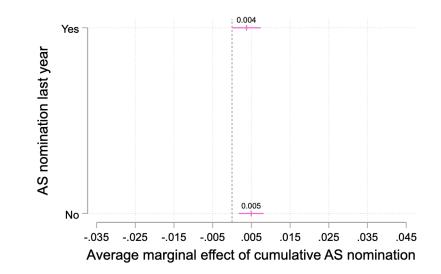
	Findings	
	00000	

# Average Marginal Effects



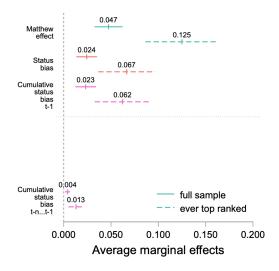
Background 00000	Findings 000●0	

## Variance in Cumulative Status Bias



		Findings		
00000	000000	00000	00	00

# Heterogenous Effects



Background 00000	Data & Analytical Strategy 0000000	Findings 00000	Conclusion •0			
Summary						

- status signal of previous All-Star election increases likelihood of becoming All-Star again (4.7 perc. points) → Matthew effect
- **partly mediated** through better performance and situation but **status bias** still 2.4 perc. points
- prior All-Star elections further increase chance → cumulative status bias (0.4 perc. points)

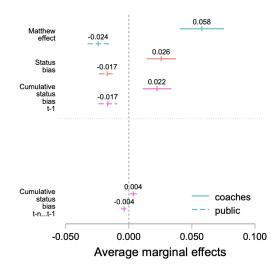
Background 00000	Data & Analytical Strategy 0000000	Findings 00000	Conclusion O			
Implications						

- Implications
- Matthew effect increases **status persistence**, to a significant degree because of **status bias**
- **cumulative status bias** means ever increasing divergence and **entrenchment of status positions**
- if **status allocation status-biased** itself, hard to reconcile even with lax understanding of meritocratic ideals
- conservative setting  $\rightarrow$  if (cumulative) status bias can make it here, it can make it anywhere

Thank you for your attention! t.biegert@lse.ac.uk thomasbiegert.github.io

Background	Data & Analytical Strategy	Findings	Conclusion	Backup
00000	0000000	00000	00	●O

## Uncertainty I: Coaches v. Public



Background 00000	Data & Analytical Strategy 0000000	Findings 00000	Backup ⊙●

## Uncertainty II: Eras

