

“bitchy,” “pushy,” “frigid,” and “ball-busting”), or as warm but incompetent, illogical, and irrational; the doormat whom no one takes seriously (also “ditsy,” “silly,” “airhead,” or “emotional”).

However, while these accounts may resonate with common public perceptions, there is a lack of systematic large-scale research on the media coverage sentiment of women and men, in particular as they

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talented, ambitious, and hard-working than equivalent men as they must overcome institutional barriers against women's advancement. For example, women in politics may be subjected to more stringent selection and promotion processes (Jalalzi 2008; Palmer and Simon 2008). It therefore stands to reason that as they move up the organizational hierarchy, those women who remain in the pool of potential candidates for promotion will be more qualified than their male counterparts. Recent studies on female politicians show that on average they indeed tend to be of higher quality, work harder, and perform better than their male colleagues (Bauer 2020; Fulton 2012; Lazarus and Steigerwalt 2018).

Some recent research further suggests that women in leading executive positions in business may offer advantages to their firms, including improved firm performance, though evidence is not unequivocal (

These arguments then lead to the same prediction as the one produced by the paper cut argument: an interaction effect of gender and fame on media sentiment (H2). At the same time, if the mechanism driving this interaction effect is the media acting as a mirror, then famous women's worse media sentiment does not stem from media bias but rather reflects a disproportionate frequency of negative events occurring in famous women's public lives. These negative events are part of their bi-

DATA AND ANALYTICAL STRATEGY

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Our primary data source for analyzing newspapers' coverage volume and sentiment is the Lydia text analysis system (Bautin, Vijayarenu, and Skiena 2008)

sub-categories. While for many categories, lists are not exhaustive, they nevertheless tend to capture the large majority of men and women who have made the most significant imprint in specific domains. Importantly, previous research has found that Wikipedia editors are predominantly white and male (Antin et al. 2011; Collier and Bear 2012). This has the potential to introduce racial and gender underrepresentation into the contents of Wikipedia. However, while some studies suggest that women are underrepresented in certain categories of Wikipedia, such as sociologists (Adams, Brückner, and Naslund 2019) and engineers (White 2018), others report that relative to their share in various occupational domains, women are not underrepresented on Wikipedia and may, in fact, be slightly overrepresented (Wagner et al. 2015; Wang, Pappu, and Cramer 2021). While such potential misrepresentation may affect some of our analyses, for some categories, such as senators, lists are exhaustive and hence representative.

In order to collect our index of names, we first generated an initial list of larger social and occupational domains, based in part on common newspaper categorizations. These domains include politics, business, entertainment, sports, science, and crime. We then devised a list of important sub-domains within each of these larger categories. For example, within the domain of entertainment we identified the following sub-categories: Actors (TV and film), directors, singers, and dancers. Finally, for some domains, we identified more specific sub-categories, in which individuals are particularly likely to attract media attention (e.g., U.S. senators in politics, Oscar nominees in entertainment, and Pulitzer Prize winners in literature).

Next, we merged this domain-specific data with our Lydia data, which provided the number of

co-occur with these negative or positive life events, providing support for the validity of our sentiment measure.

It could be argued that a sentiment analysis that simply measures “positive” vs. “negative” references is too crude when trying to capture subtle differences in media coverage, in particular, differences between women and men. For example, some scholars have argued that news reports on women of-

T 1. Descriptive Statistics (N = 42,862)

Variable	Mean	Std.
Fame		
Number of media mentions per person	4,400	50,152
Number of media sentences per person	3,297	36,088
Number of media articles per person	1,468	11,405
Media sentiment	.214	.480
Encyclopedic sentiment	.512	.354
	Percentage	
Woman	29.9%	
Politicians	9.2%	
House representatives	1.5%	
Senators	0.4%	
Businesspeople	7.0%	
CEOs	1.8%	
Billionaires	1.1%	
Entertainers	33.8%	
Oscar nominees	1.1%	
Emmy nominees	1.2%	
Criminals	5.2%	
Athletes	9.2%	
Tennis Grand Slam winners	0.3%	
Olympic medalists	0.7%	
Scientists	13.5%	
Nobel Prize winners	0.5%	

representatives and Oscar and Emmy nominees. In other subcategories – such as tennis Grand Slam winners and Nobel Prize winners – there is no statistically significant difference. These results provide strong support for H1 that women’s media coverage overall is more positive than men’s.

We next examine the role of fame in producing divergent sentiment for men and women. In Figure 1, we present two panels showing the interaction between gender, fame, and coverage sentiment. Panel 1 is based on the data from our larger sample of nearly 14 million person names (the Lydia newspapers sample), showing results for both well-known individuals and relatively obscure ones, who have appeared in the news only once or twice during the period of the study. Panel 2 is based on the smaller sample we collected from Wikipedia (N = 42,862), including individuals who are all well-known enough to have a Wikipedia entry. Note that there are relatively few individuals on Wikipedia with very little coverage, as indicated by the widening confidence intervals at lower levels in panel 2, but not in panel 1. The analyses of both samples show a similar pattern: at low levels of fame (1 to 10 yearly mentions), women receive coverage that is substantially more positive than that of equally renowned men (a 10 percent to 20 percent difference in coverage tone). However, as the number of mentions grows, the coverage tone associated with men remains fairly stable and even slightly improves, while the coverage tone for women becomes increasingly negative, resulting in an eventual elimination, and even reversal of sentiment differences. Indeed, among the most famous individuals, those who received in the order of one million mentions, the coverage of men is more positive than that of women.

While Figure 1 supports the notion that women, unlike men, are more heavily scrutinized when they are famous, it leaves important questions about the origins of the effect unanswered. In

T 2. Media Sentiment by Gender and Domain

Field	Women			Men			Difference	
	N in sample	Median # mentions per year	Mean sentiment	N in sample	Median # mentions per year	Mean sentiment	Women vs. men: sentiment difference	
House representatives	1,061	339	.19	2,897	324	.16	.04*	
Senators	141	4,784	.24	296	7,615	.18	.05*	
CEOs	484	32,400	.23	146	33,451	.22	.01	
Billionaires	149	208	.39	2,543	161	.31	.08***	
Oscar nominees	53	378	.38	653	199	.37	.01	
Emmy nominees	5,950	139	.45	421	652	.39	.06	
Tennis Grand Slam winners	234	202	.28	8,532	341	.21	.07***	
Olympic medalists	235	6,920	.24	231	15,771	.18	.06**	
Nobel Prize winners	356	3,000	.27	259	5,268	.20	.07**	
	953	214	-.25	1,880	147	-.39	.14***	
	55	814	.41	2,994	824	.32	.10***	
	160	6,403	.28	54	6,223	.31	-.04	
	1,220	1,562	.51	128	2,927	.42	.09**	
	20	63	.27	4,555	76	.22	.05**	
		442	.35	214	146	.41	-.06	

*p < .05
 **p < .01
 ***p < .001 (two-tailed independent sample t-test)

In [Figure 2](#), we present results for coverage tone by gender and fame for men and women who were classified into six major social and occupational domains by the Wikipedia categorization pages. Panels one through six of the figure present results for politicians, businesspeople, entertainers, criminals, athletes, and scientists (see [online Appendix C](#) for a random sample illustrating more- and less-famous individuals included in each of these categories). Because of the reduced sample sizes, the top categories are now too sparse for most domains, so we collapsed the 1,000,000 and 100,000 categories into the 10,000 mentions category.

The results presented in [Figure 2](#) demonstrate.

T 3. OLS Regression of Media and Biographical Sentiment

	Model 1: media sentiment		Model 2: media sentiment		Model 3: biographical sentiment		Model 4: biographical sentiment	
	β	SE(β) ¹	β	SE(β) ¹	β	SE(β) ¹	β	SE(β) ¹
Fame (log10)	-.01**	.00	-.02***	.00	-.02***	.00	-.02***	.00
Female	.15***	.02	.12***	.02	.05***	.01	.03**	.01
Female * Fame	-.03***	.01	-.03***	.01	.00	.00	.01	.00
Politician			-.06***	.01			-.06***	.01
Criminal			-.59***	.01			-.29***	.01
Businessperson			.10***	.01			-.03***	.01
Entertainer			.00	.01			-.02***	.00
Athlete			.13***	.01			-.07***	.01
Scientist			-.01	.01			-.02***	.01
Interaction	.19***	.01	.25***	.01	.54***	.01	.58***	.01
N	42,862		42,862		42,862		42,862	
R ²	.01		.09		.01		.04	

¹Heteroskedasticity-consistent standard errors

*p < .05

**p < .01

***p < .001 (two-tailed)

The robustness of these results is confirmed in regression analysis. In Table 3 we present results from OLS regression models predicting coverage sentiment from gender, fame, and their interaction. Model 2 is the same as model 1, except that it includes dichotomous variables measuring membership of six major social and occupational domains, into which names on Wikipedia are categorized. We use heteroskedasticity-robust standard errors because at very low fame levels, numbers of positive and negative mentions are naturally also low, leading to higher variance in the dependent variable. Both models show a significant interaction effect: On our sentiment scale from -1 to 1, for each unit (=10-fold) increase in fame the gender difference in sentiment is a full .03 points smaller. At low and intermediate levels of fame, women receive better coverage. At very high levels of fame, men receive better coverage.

Media as a Mirror?

The robust interaction effect we present above lends support to the paper cut thesis that media discourse about women vis-à-vis comparable men becomes more negative as they acquire greater fame. However, the evidence presented so far may alternatively be interpreted as reflecting negative real-world actions or occurrences in the life of famous women (H3). That is, the media may be accurately reporting on true variability in the actions taken by or events occurring to men and women of different fame levels. Perhaps famous women “deserve” more negative coverage, for example, because they are put into tougher situations or are being deliberately thwarted, hindered, or blocked from succeeding.

To differentiate between these two alternative accounts, we evaluate parallel patterns in biographical sentiment, testing H3 and H4. The “media as a mirror” account predicts that biographical sentiment patterns will match media sentiment patterns. The “paper cut” account instead predicts that biographical sentiment will be more positive for women at all levels of fame. These predictions do not consider the spillover problem mentioned earlier, whereby media coverage may be partly reflected in encyclopedic content. The setup of the test is thus stacked against the paper cut thesis, as it increases the likelihood of finding evidence for the media as a mirror thesis.

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