



Methodology and GD-IQ findings from editorial:
"The women missing from the silver screen and the technology used to find them"

February 24, 2017

Our Methodology

In effort of identifying an objective metric to define and better understand unconscious gender biases in movies, we scanned 2014, 2015, and 2016 100 highest grossing films with a machine learning tool called GD-IQ. The films were procured by *The Numbers* and were curated to exclude animated films, films with mostly masked characters, and for 2016 only—films that were not available for download as of February 20, 2017. The GD-IQ data surfaced the average percentage of female on-screen time and speaking time in films, which was analyzed against popular movie genres, MPAA Ratings, and Oscar-winning films.

Top 100 Grossing Domestic (US) Films																				
2016							2015							2014						
Movie ID#	Genre 1	Genre 2	MPAA	Gross Earnings (Million)	F On-Screen Time %	F Speaking Time %	Movie ID#	Genre 1	Genre 2	MPAA	Gross Earnings (Million)	F On-Screen Time %	F Speaking Time %	Movie ID#	Genre 1	Genre 2	MPAA	Gross Earnings (Million)	F On-Screen Time %	F Speaking Time %
1	Fantasy	Sci Fi	PG-13	\$325,100,054	21.83875795	24.19233102	1	Fantasy	Sci Fi	PG-13	\$742,208,942	19.48	25.12	1	Drama	Action	R	\$350,126,372.00	25.78	15.61
2	Thriller	Action	PG-13	\$162,192,920	15.48528363	18.75759581	2	Sci Fi	Thriller	PG-13	\$652,198,010	41.70	41.18	2	Fantasy	Sci Fi	PG-13	\$323,734,502.00	58.21	42.12
3	Fantasy	Sci Fi	PG-13	\$158,848,340	13.64189109	25.33052765	3	Sci Fi	Action	PG-13	\$459,005,868	26.62	22.49	3	Sci Fi	Action	PG-13	\$259,746,958.00	21.34	20.66
4	Fantasy	Sci Fi	PG-13	\$128,350,574	48.70337653	63.49704977	4	Crime	Thriller	PG-13	\$351,032,910	25.15	23.32	4	Fantasy	Action	PG	\$241,407,328.00	82.36	45.82
5	Crime	Action	PG-13	\$127,440,871	23.58871804	41.16102768	5	Sci Fi	Adventure	PG-13	\$274,185,395	59.97	33.49	5	Fantasy	Thriller	PG-13	\$233,921,534.00	13.89	14.04
6	Drama	Action	PG-13	\$126,643,061	21.6446023	19.33291252	6	Sci Fi	Drama	PG-13	\$225,910,757	21.53	26.45	6	Fantasy	Action	PG-13	\$220,602,017.00	19.50	14.11
7	Drama	Biography	PG-13	\$124,991,036	21.6288769	21.78739876	7	Fantasy	Sci Fi	PG	\$201,151,353	51.68	63.94	7	Comedy	Action	R	\$191,719,337.00	18.03	29.52
8	Comedy	Romance	R	\$113,257,297	86.00086178	78.71282015	8	Thriller	Action	PG-13	\$197,833,291	21.74	14.54	8	Mystery	Sci Fi	PG-13	\$182,802,094.00	32.39	21.08
9	Fantasy	Sci Fi	PG-13	\$103,144,286	25.02046728	22.96831262	9	Thriller	Action	PG-13	\$195,042,377	21.24	20.66	9	Mystery	Drama	R	\$166,726,809.00	41.42	44.41
10	Mystery	Thriller	R	\$102,470,008	60.1787968	37.84204861	10	Comedy	Musical	PG-13	\$183,785,415	67.56	61.88	10	Mystery	Sci Fi	PG-13	\$150,947,895.00	47.41	43.70
11	Crime	Action	PG-13	\$93,423,063	19.28279704	15.26122135	11	Drama	Thriller	R	\$183,637,894	13.67	11.11	11	Comedy	N/A	R	\$150,086,800.00	27.82	34.96
12	Action	Comedy	PG-13	\$90,862,685	28.9512158	41.24553878	12	Sci Fi	Thriller	PG-13	\$180,202,163	17.54	26.01	12	Comedy	Action	PG-13	\$134,202,565.00	8.03	39.64
13	Crime	Thriller	R	\$89,217,875	45.34289997	27.96323494	13	Drama	Romance	R	\$166,167,230	51.21	51.83	13	Thriller	Action	R	\$126,573,960.00	44.54	35.76
14	Fantasy	Drama	PG-13	\$86,973,287	48.65290251	35.17420599	14	Drama	Biography	R	\$161,058,685	13.12	24.87	14	Drama	Romance	PG-13	\$124,872,350.00	45.55	41.83
15	Crime	Drama	R	\$85,931,907	33.89942741	25.8963501	15	Drama	Disaster	PG-13	\$155,190,832	47.00	36.56	15	Drama	Fantasy	R	\$106,580,051.00	31.70	33.59
16	Fantasy	Adventure	PG	\$77,042,381	63.97818569	37.23916251	16	Fantasy	Sci Fi	R	\$153,636,354	35.38	37.67	16	Mystery	Sci Fi	PG-13	\$102,242,014.00	22.56	25.39
17	Mystery	Drama	R	\$75,395,035	69.62958523	48.37101238	17	Sci Fi	Thriller	PG-13	\$130,179,072	45.78	28.43	17	Crime	Thriller	R	\$101,436,176.00	18.62	14.30
18	Fantasy	Mystery	PG-13	\$72,082,999	46.86183144	24.99647853	18	Crime	Sci Fi	R	\$128,261,724	14.93	16.79	18	Fantasy	Drama	PG-13	\$101,200,044.00	48.12	15.33
19	Thriller	N/A	PG-13	\$67,268,835	65.27304982	55.57506185	19	Crime	Action	R	\$110,825,712	62.80	61.89	19	Action	Adventure	PG-13	\$100,206,256.00	15.32	21.26
20	Mystery	Sci Fi	PG-13	\$66,184,051	42.70087261	27.04915056	20	Drama	Romance	R	\$110,038,130	36.67	52.52	20	Thriller	Action	PG-13	\$91,742,160.00	23.34	21.10
21	Mystery	Crime	PG-13	\$65,075,540	20.89280248	19.50373746	21	Drama	Sport	PG-13	\$103,122,271	14.73	21.67	21	Drama	N/A	PG	\$91,366,097.00	48.27	38.12
22	Comedy	N/A	R	\$63,077,560	80.03139464	77.67278285	22	Comedy	Family	PG-13	\$93,889,861	29.16	37.65	22	Fantasy	Adventure	PG	\$90,871,655.00	61.19	67.36
23	Crime	Drama	R	\$62,524,260	16.80685389	19.27706021	23	Fantasy	Mystery	PG	\$93,436,322	41.44	52.50	23	Fantasy	Adventure	PG	\$89,847,179.00	18.68	20.19
24	Fantasy	Drama	PG	\$61,705,123	51.69707534	64.77909836	24	Comedy	N/A	R	\$90,411,453	15.74	17.02	24	Drama	History	PG-13	\$87,651,495.00	10.05	18.15
25	Drama	Thriller	PG-13	\$61,433,527	20.17782227	19.64395335	25	Fantasy	Sci Fi	PG-13	\$89,760,956	22.75	23.10	25	Drama	Action	R	\$85,509,098.00	10.22	14.24
26	Romance	Comedy	PG-13	\$59,689,605	55.67664131	59.82894321	26	Thriller	Action	PG-13	\$89,256,424	13.77	20.68	26	Comedy	N/A	PG-13	\$85,392,580.00	24.37	34.43
27	Mystery	Crime	PG-13	\$58,574,515	24.43051682	33.87511104	27	Sci Fi	Thriller	PG-13	\$81,660,593	25.82	25.54	27	Comedy	N/A	R	\$84,525,432.00	69.93	72.84
28	Drama	Romance	PG-13	\$56,245,075	44.49050166	45.13177975	28	Comedy	N/A	R	\$81,284,830	39.16	37.00	28	Horror	N/A	R	\$84,273,813.00	69.41	29.37
29	Comedy	N/A	R	\$55,340,730	51.64418901	48.82258266	29	Fantasy	Adventure	PG	\$79,370,088	35.59	44.59	29	Romance	Comedy	PG-13	\$83,911,193.00	71.70	78.33
30	Drama	Thriller	PG-13	\$55,121,623	66.67541844	34.60063227	30	Fantasy	Sci Fi	PG-13	\$78,747,585	28.22	31.78	30	Action	Adventure	R	\$82,390,774.00	12.45	33.84
31	Comedy	Drama	PG	\$54,030,051	30.32402985	32.58402283	31	Drama	Comedy	PG-13	\$75,711,361	45.64	49.83	31	Drama	Action	PG-13	\$78,031,620.00	15.62	13.74
32	Thriller	Drama	R	\$52,853,219	13.41538824	9.60364522	32	Crime	Action	PG	\$71,038,190	24.94	19.18	32	Fantasy	Action	PG-13	\$72,688,614.00	19.34	26.74
33	Fantasy	Drama	PG-13	\$48,003,015	38.90119533	33.36110402	33	Drama	Thriller	PG-13	\$70,610,153	15.52	14.85	33	Drama	Comedy	PG	\$72,460,370.00	61.42	52.95
34	Romance	Comedy	R	\$46,843,513	69.1492592	68.62270534	34	Drama	N/A	PG	\$67,790,117	31.34	51.96	34	Thriller	Action	R	\$71,562,550.00	52.17	28.52
35	Romance	Comedy	R	\$46,009,673	42.87649275	53.01074438	35	Drama	Musical	R	\$66,013,057	32.90	29.48	35	Comedy	Family	PG	\$66,032,663.00	58.70	67.14
36	Crime	Thriller	R	\$46,009,673	26.35504293	24.35583498	36	Thriller	Horror	PG-13	\$65,112,020	75.54	80.80	36	Comedy	Romance	PG-13	\$65,028,687.00	34.55	51.26
37	Crime	Drama	R	\$43,034,523	18.43482913	27.59371107	37	Action	Romance	R	\$64,460,211	26.62	41.49	37	Drama	Action	PG-13	\$61,342,935.00	22.54	13.23
38	Crime	Drama	R	\$41,012,075	21.92080027	38.26343046	38	Crime	Drama	R	\$62,575,678	11.69	21.29	38	Drama	Comedy	PG	\$60,755,732.00	35.92	25.06
39	Drama	Thriller	R	\$39,598,941	34.23785183	43.51234502	39	Comedy	N/A	R	\$61,884,110	74.95	77.62	39	Drama	History	PG-13	\$59,700,064.00	21.43	9.45
40	Mystery	Crime	PG-13	\$38,583,626	52.48458212	61.28756694	40	Adventure	Comedy	R	\$58,884,188	41.92	44.47	40	Crime	Drama	R	\$59,076,019.00	10.61	9.22
41	Mystery	Drama	PG-13	\$36,880,033	3.491547573	7.693348386	41	Drama	Thriller	PG-13	\$57,017,904	51.71	38.57	41	Fantasy	Drama	PG-13	\$55,991,880.00	19.97	14.36
42	Mystery	Crime	R	\$36,261,763	27.9874817	33.81901753	42	Fantasy	Sci Fi	PG-13	\$56,117,548	27.99	20.80	42	Drama	Romance	PG	\$54,235,441.00	33.23	38.10
43	Mystery	Thriller	PG-13	\$35,819,556	61.81763995	33.83595883	43	Crime	Drama	PG-13	\$53,862,963	31.00	24.82	43	Crime	Comedy	R	\$53,063,469.00	7.57	29.69
44	Comedy	Adventure	R	\$35,593,113	28.19968835	27.55201267	44	Drama	Thriller	R	\$52,421,953	20.05	25.78	44	Crime	Thriller	PG-13	\$52,543,632.00	19.31	43.91
45	Thriller	Horror	PG-13	\$35,144,505	69.26782774	44.12939785	45	Fantasy	Drama	PG-13	\$52,218,558	54.46	49.86	45	Drama	History	PG-13	\$52,076,908.00	19.93	16.33
46	Sci Fi	Thriller	PG-13	\$34,912,982	39.29606935	43.23852664	46	Fantasy	Sci Fi	PG-13	\$47,482,519	44.53	41.87	46	Thriller	Action	PG-13	\$50,856,010.00	47.86	69.24
47	Mystery	Crime	PG-13	\$34,237,873	30.83492131	21.88834727	47	Fantasy	Horror	PG-13	\$47,425,125	59.83	58.30	47	Thriller	Drama	PG-13	\$50,577,412.00	16.28	18.01
48	Drama	Comedy	PG-13	\$32,492,859	64.81115336	62.57677972	48	Mystery	Crime	R	\$46,823,967	16.95	17.50	48	Drama	Romance	PG-13	\$50,474,843.00	37.11	55.85
49	Fantasy	Action	PG-13	\$31,153,464	27.39202063	21.50045129	49	Action	Adventure	PG-13	\$45,445,109	21.57	19.68	49	Comedy	Drama	R	\$48,637,684.00	42.10	59.51
50	Mystery	Drama	PG-13	\$30,080,225	19.06285502	18.71133129	50	Drama	Sport	PG	\$44,480,275	22.18	23.10	50	Fantasy	Disaster	PG-13	\$47,602,194.00	32.84	31.29
51	Mystery	Drama	PG-13	\$29,747,603	48.50259135	40.85022267	51	Disaster	Thriller	PG-13	\$43,309,450	22.58	24.60	51	Crime	Drama	R	\$47,063,106.00	14.95	14.71
52	Comedy	Adventure	PG-13	\$28,848,693	36.1810838	37.91012934	52	Mystery	Thriller	R	\$43,787,265	27.94	33.54	52	Comedy	Romance	PG-13	\$46,290,741.00	59.26	55.35

Top 100 Grossing Domestic (US) Films																					
2016							2015							2014							
Movie ID#	Genre 1	Genre 2	MPAA	Gross Earnings (Million)	F On-Screen Time %	F Speaking Time %	Movie ID#	Genre 1	Genre 2	MPAA	Gross Earnings (Million)	F On-Screen Time %	F Speaking Time %	Movie ID#	Genre 1	Genre 2	MPAA	Gross Earnings (Million)	F On-Screen Time %	F Speaking Time %	
53	Drama	Romance	R	\$28,751,693	59.05867049	60.90363719	53	Comedy	N/A	R	\$42,977,255	29.32	27.24	53	Drama	Biography	R	\$47,047,013.00	16.91	30.57	
54	Drama	Disaster	PG	\$27,569,558	29.37512398	13.28217572	54	Action	Adventure	PG	\$42,656,255	39.78	32.60	54	Fantasy	Drama	PG-13	\$45,090,374.00	40.06	31.06	
55	Drama	Comedy	PG-13	\$27,383,770	30.84177434	37.30123963	55	Fantasy	Drama	PG-13	\$42,629,776	56.48	45.88	55	Drama	Action	PG-13	\$43,568,507.00	21.01	13.80	
56	Crime	Drama	R	\$27,007,844	15.81981467	19.01767238	56	Fantasy	Horror	PG-13	\$42,277,730	61.29	47.81	56	Drama	Comedy	PG-13	\$43,478,246.00	51.84	49.34	
57	Mystery	Drama	PG-13	\$26,594,261	54.93489897	29.79866892	57	Drama	History	PG-13	\$38,521,065	63.48	54.15	57	Crime	Thriller	R	\$42,925,323.00	10.00	12.48	
58	Drama	Action	PG-13	\$26,410,477	20.34924061	15.44477234	58	Drama	Romance	PG-13	\$37,446,117	51.34	46.13	58	Comedy	Western	R	\$42,720,965.00	27.08	33.31	
59	Mystery	Horror	R	\$25,138,705	48.18738739	60.45971074	59	Mystery	Thriller	R	\$35,423,380	47.93	51.08	59	Thriller	Action	PG-13	\$39,322,544.00	4.21	5.46	
60	Romance	Comedy	R	\$24,139,805	47.78699013	71.15945743	60	Fantasy	Family	PG	\$35,081,641	49.12	44.25	60	Sci Fi	Adventure	PG	\$38,934,842.00	71.50	66.34	
61	Comedy	Documentary	R	\$23,591,043	24.35642352	46.26247884	61	Crime	Action	PG-13	\$34,580,201	73.11	73.21	61	Comedy	N/A	R	\$38,543,473.00	42.32	58.54	
62	Drama	Biography	R	\$23,083,334	53.46460825	46.99495367	62	Teen	Comedy	PG-13	\$34,030,343	68.39	67.76	62	Drama	Sport	PG	\$36,447,959.00	12.94	30.75	
63	Drama	Thriller	R	\$21,587,519	18.57288868	16.17284075	63	Drama	History	PG-13	\$33,307,793	43.26	38.27	63	Drama	Comedy	R	\$34,296,320.00	37.00	41.96	
64	Drama	Action	R	\$20,810,036	18.96839761	24.98860009	64	Drama	Comedy	PG	\$33,078,266	43.48	44.45	64	Drama	Thriller	R	\$31,983,186.00	19.11	28.40	
65	Horror	Thriller	R	\$20,777,061	36.46918132	52.22907102	65	Drama	Comedy	R	\$33,055,481	12.92	22.83	65	Drama	Adventure	R	\$31,424,004.00	25.75	27.94	
66	Drama	N/A	PG	\$20,773,069	42.89712303	32.59603148	66	Mystery	Thriller	R	\$32,482,090	80.32	62.11	66	Drama	Thriller	PG-13	\$30,697,999.00	27.94	37.91	
67	Comedy	N/A	R	\$20,591,853	11.94362018	24.36409045	67	Comedy	N/A	R	\$32,363,404	19.67	26.66	67	Thriller	Action	R	\$30,577,122.00	15.45	21.40	
68	Fantasy	Drama	PG	\$20,007,149	45.1724819	45.62214272	68	Mystery	Drama	PG-13	\$32,000,304	32.82	26.92	68	Drama	Biography	PG-13	\$30,569,935.00	28.76	32.57	
69	Fantasy	Comedy	PG	\$19,700,032	38.05147318	45.40363519	69	Crime	Sci Fi	R	\$31,569,268	15.37	35.33	69	Drama	Thriller	PG-13	\$30,472,090.00	23.72	19.99	
70	Drama	Romance	PG	\$19,634,643	57.23845241	63.10282265	70	Fantasy	Mystery	R	\$31,090,320	48.56	32.66	70	Drama	Sport	PG	\$30,127,963.00	19.67	17.38	
71	Biography	Sport	PG-13	\$19,115,191	16.6257506	16.31187447	71	Drama	Biography	R	\$29,499,394	21.97	25.16	71	Drama	Sport	PG-13	\$28,842,237.00	16.62	13.47	
72	Drama	Romance	PG-13	\$18,730,891	34.96585055	41.13457492	72	Mystery	Crime	R	\$29,045,855	16.19	20.71	72	Thriller	Mystery	R	\$27,695,246.00	56.58	33.99	
73	Drama	Thriller	R	\$18,704,596	21.22101599	31.22518775	73	Horror	N/A	R	\$27,740,955	45.78	28.20	73	Drama	Thriller	R	\$27,606,266.00	27.96	21.91	
74	Crime	Action	PG-13	\$17,356,894	40.23115514	37.07706734	74	Fantasy	Action	PG-13	\$27,367,680	27.38	27.40	74	Drama	Romance	PG-13	\$26,739,759.00	42.16	34.53	
75	Drama	History	R	\$15,861,566	15.95915481	28.37415215	75	Thriller	Action	R	\$27,288,872	37.19	31.11	75	Romance	Comedy	R	\$26,068,955.00	33.19	32.05	
76	Drama	Sport	PG-13	\$15,789,389	14.7340142	20.86445558	76	Crime	Drama	R	\$27,108,972	14.15	18.00	76	Mystery	Thriller	R	\$26,017,685.00	6.48	13.14	
77	Crime	Drama	R	\$15,436,808	20.78572793	25.57933683	77	Drama	Comedy	PG-13	\$26,822,144	57.68	47.87	77	Drama	Biography	R	\$25,880,904.00	60.50	45.16	
78	Action	Comedy	PG-13	\$14,904,426	36.84910036	43.65059098	78	Mystery	Crime	R	\$26,461,644	10.00	10.32	78	Drama	Comedy	R	\$25,424,568.00	33.26	44.37	
79	Documentary	N/A	PG-13	\$13,099,931	32.09778857	24.13007408	79	Comedy	Romance	PG-13	\$26,193,757	51.79	43.93	79	Thriller	Action	R	\$25,018,119.00	33.97	25.97	
80	Crime	Drama	R	\$12,639,297	15.53165201	22.94605532	80	Sci Fi	Thriller	PG-13	\$25,801,570	52.58	24.05	80	Drama	Romance	PG-13	\$24,772,350.00	55.74	33.00	
81	Drama	Romance	PG-13	\$12,545,979	28.13360773	31.74146569	81	Fantasy	Mystery	R	\$25,440,971	23.60	24.19	81	Fantasy	Drama	R	\$24,299,768.00	42.86	40.57	
82	Comedy	N/A	R	\$11,686,940	46.34225248	58.87147516	82	Drama	Sport	PG-13	\$25,266,650	21.22	18.09	82	Romance	Comedy	R	\$23,740,325.00	38.51	49.70	
83	Comedy	N/A	PG-13	\$11,528,613	49.05119885	65.88843762	83	Drama	Thriller	PG-13	\$23,750,170	13.29	10.84	83	Drama	Romance	PG-13	\$23,438,250.00	29.71	32.91	
84	Drama	Romance	PG-13	\$11,103,205	47.55114327	40.4201707	84	Thriller	Horror	R	\$22,764,410	38.01	52.42	84	Drama	Action	PG-13	\$23,169,033.00	35.24	27.80	
85	Thriller	Action	PG-13	\$10,907,291	50.009458	36.02625071	85	Crime	Thriller	R	\$22,467,450	27.90	31.32	85	Thriller	Drama	PG-13	\$23,022,309.00	37.66	23.78	
86	Thriller	Horror	PG-13	\$10,753,574	47.07904395	36.79691553	86	Crime	Thriller	PG-13	\$22,402,176	12.06	14.00	86	Horror	Thriller	R	\$21,222,315.00	60.18	49.87	
87	Drama	Thriller	R	\$10,185,257	48.90598491	30.46516409	87	Fantasy	Sci Fi	PG-13	\$22,348,241	33.44	46.26	87	Drama	Action	PG-13	\$20,396,829.00	11.18	11.70	
88	Drama	Biography	PG-13	\$10,021,175	25.91593514	53.77145616	88	Drama	N/A	PG-13	\$21,571,189	30.15	27.82	88	Fantasy	Thriller	PG-13	\$19,075,290.00	65.22	33.60	
89	Comedy	Romance	R	\$9,669,521	29.7161427	42.80102604	89	Drama	Action	PG-13	\$21,052,030	36.13	38.36	89	Fantasy	Action	PG-13	\$18,848,538.00	21.51	16.15	
90	Comedy	Drama	R	\$9,496,130	21.81179302	25.3037465	90	Drama	Romance	PG-13	\$20,812,853	50.43	59.85	90	Drama	Thriller	R	\$17,390,770.00	40.34	63.93	
91	Sci Fi	Thriller	R	\$9,252,038	45.61948349	16.93089475	91	Mystery	Crime	PG-13	\$20,119,034	34.64	38.25	91	Horror	Comedy	R	\$17,329,487.00	34.89	50.71	
92	Sci Fi	Fantasy	R	\$9,196,278	34.12227814	38.42885232	92	Drama	N/A	PG-13	\$18,656,400	66.24	56.00	92	Crime	Thriller	R	\$17,237,855.00	26.28	26.52	
93	Comedy	N/A	R	\$9,097,072	32.94776209	42.31088622	93	Horror	N/A	R	\$18,297,124	60.80	39.49	93	N/A	Romance	R	\$16,170,632.00	41.71	36.21	
94	Drama	Sport	PG	\$8,857,311	35.51567497	50.16884372	94	Drama	Biography	R	\$17,766,658	26.35	33.34	94	Drama	N/A	PG-13	\$15,995,891.00	75.40	66.64	
95	Drama	Romance	PG-13	\$7,482,608	30.7380494	27.20768564	95	Mystery	Crime	PG	\$17,737,646	32.82	26.89	95	Horror	N/A	R	\$15,821,461.00	55.12	44.73	
96	Drama	Biography	J	\$7,030,902	54.81543233	57.45222363	96	Fantasy	Sci Fi	PG-13	\$17,223,265	32.87	22.84	96	Drama	Romance	PG-13	\$15,160,801.00	45.41	58.33	
97	Drama	N/A	R	\$6,897,838	67.32945238	33.35382819	97	Sci Fi	Comedy	R	\$12,314,651	19.56	43.75	97	Drama	Romance	PG-13	\$14,904,384.00	40.48	39.64	
98	Comedy	Action	R	\$6,864,016	28.6713066	29.19135646	98	Drama	Thriller	PG-13	\$11,473,908	57.03	56.68	98	Drama	Romance	PG-13	\$14,564,709.00	52.70	46.44	
99	Drama	Romance	PG-13	\$6,304,223	6.589456889	44.59057726	99	Thriller	N/A	R	\$10,664,749	21.20	13.31	99	Thriller	Horror	R	\$14,118,761.00	40.93	34.50	
100	Drama	Romance	R	\$5,879,835	49.06724289	38.44125894	100	Comedy	N/A	R	\$10,219,501	13.18	24.31	100	Thriller	Mystery	PG-13	\$14,019,924.00	39.66	41.80	
AVG					37.22	36.98						35.65	35.36						34.47	33.77	

How we measure

For this report, we measure on-screen time by partitioning the movie into face-tracks by tracking the detected faces locally in time. Gender is computed for each face-track separately. We then calculate total screen time by gender for each film using the track duration. We measure speaking time by applying an automatic speech detection program that classifies the speaker as female or male.

How we analyze

We scanned 300 films with the GD-IQ and analyzed the data by genre, MPAA Ratings, and Academy Award-winning films. Genre: 1-2 genres were assigned to each film, then curated to a list of nine genres based on popularity. MPAA Ratings: PG, PG-13, and R rated films were analyzed to identify female on-screen/speaking time amongst various age groups. Academy Award-winning: Films from all Oscar categories, except animated films.

Genre	Average % Female Onscreen Time				Average % Female Speaking Time			
Genre	2016	2015	2014	Combined Average	2016	2015	2014	Combined Average
Horror	50.25	56.88	52.10	53.08	48.4	51.17	41.84	47.14
Romance	45.94	44.68	44.07	44.90	51.12	49.29	45.56	44.66
Comedy	42.26	39.38	38.93	40.19	48.74	42.14	47.17	46.01
Science Fiction	33.87	31.89	42.24	36.00	51.12	41.18	36.55	42.95
Drama	34.17	34.65	32.52	33.78	33.82	35.01	31.27	33.36
Action	27.62	33.30	26.35	29.09	28.64	32.56	24.58	28.59
Biography	34.49	20.48	35.39	30.12	39.26	27.79	36.10	34.38
Crime	26.74	26.48	15.33	22.85	29.09	28.30	21.55	26.31
MPAA Ratings	Average % Female Onscreen Time				Average % Female Speaking Time			
Rating ID	2016	2015	2014	Combined Average	2016	2015	2014	Combined Average
PG	43.81	37.24	45.81	42.28	42.75	40.35	42.65	41.92
PG-13	35.39	38.99	33.04	35.80	34.24	36.10	31.42	33.92
R	37.94	30.68	34.20	34.27	38.93	33.04	34.20	35.39
Oscare-winning Films	Average % Female Onscreen Time				Average % Female Speaking Time			
Oscar-winning Films	2016	2015	2014	Combined Average	2016	2015	2014	Combined Average
Film 1	N/A	21.74	33.26		N/A	14.54	44.37	
Film 2	N/A	35.38	32.39		N/A	37.67	21.08	
Film 3	N/A	12.92	55.74		N/A	22.83	33.00	
Film 4	N/A	16.19	25.78		N/A	20.71	15.61	
Film 5	N/A	14.15	10.61		N/A	18.00	9.22	
Film 6	N/A	23.60	12.27		N/A	24.19	12.78	
Film 7	N/A	13.29	44.01		N/A	10.84	43.91	
Film 8	N/A	66.24	23.74		N/A	56.00	6.53	
Film 9	N/A	76.66	5.63		N/A	58.62	12.47	
Film 10	N/A	60.73	53.05		N/A	40.84	44.10	
Film 11	N/A	66.79	42.71		N/A	40.63	32.96	
Film 12	N/A	42.58	43.84		N/A	44.56	46.26	
Film 13	N/A	3.07	N/A		N/A	21.06	N/A	
Film 14	N/A	23.40	N/A		N/A	20.05	N/A	
Combined Average	N/A	34.05	31.92	32.99	N/A	30.75	26.86	28.81