Gender Inequality in Popular Films: Examining On Screen Portrayals and Behind-the-Scenes Employment Patterns in Motion Pictures Released between 2007-2009

We examined 4,342 speaking characters for gender and attributes of hyper sexualization in 100 top-grossing films from 2009. We also compared our current findings to those obtained when evaluating at 100 popular films released in 2007 and 2008. Below are the key findings.

Key Findings

Prevalence

32.8 percent of the speaking characters are female and 67.2% are male. This translates into 2.05 males to every one female. The percentage of female characters in 2009 films is identical to the percentage in 2008 films.

Less that 17% of films are "gender balanced" or feature girls or women in 45-54.9% of all speaking roles. These findings are just shy of our 5% criterion demarcating change from 2007 to 2009. The lack of gender parity is surprising, as females represent 50% of the population and purchase roughly 50% of domestic movie tickets sold.

Gender equality does not exist behind the camera. Across 1,240 gate-keeping positions, females accounted for only 3.6% of directors, 13.5% of writers, and 21.6% of producers. This calculates into a ratio of 4.51 males to every one female. Again, no movement in these numbers occurred across the last three years.

Sexualization

In 2009, females are more likely than males to be shown in sexy attire (25.8% vs. 4.7%), partially naked (23.6% vs. 7.4%), and attractive (10.9% vs. 2.5%). Looking at females specifically, 13-20 year olds are just as likely as 21-39 year olds to be shown in sexy attire (33.8% vs. 33.5%, respectively) and partially naked (28.2% vs. 30.5%, respectively). Female teens are more likely to be depicted as attractive (21.5%) than are female 21-39 year olds (13.8%) or female 40-64 year olds (3.9%). Of these three measures (sexy attire, nudity, attractiveness), physical beauty is the only one that has *decreased* meaningfully from 2007 to 2009.

Stereotyping

Females are still shown in a stereotypical light. 62.8 percent are depicted in a committed romantic relationship, which is significantly higher than the percentage of males in this category (51.8%). The percentage of females in a relationship has *increased* across the three years evaluated. Only 22.2% of all speaking females are 40- to 64-years of age whereas 35.2% of speaking males are 40- to 64 years of age. Thus, fewer women are working than men on the silver screen in their 40s, 50s, early 60s.

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The purpose of the present study is to document gender in popular motion picture films. This is our third report, which will focus on the gender prevalence on screen and behind-the-camera in 100 top-grossing theatrically-released films in 2009.[1] We will compare the findings obtained in the 2009 sample with those we have already reported on in 2008 (100 films) and 2007 (100 films). In all our research, we content analyze speaking or named characters shown on screen.[2] Our major findings are reviewed below.

#1 Gender Imbalance is Thriving in Top-Grossing Films

A total of 4,342 speaking characters were evaluated for biological sex (male, female). 32.8 percent of the speaking characters are female (*n*=1,423) and 67.2% are male (*n*=2,919). This translates into 2.05 males to every one female. We looked at one other on screen barometer of gender equality: balanced casts. By balanced cast we mean that 45-54.9% of the speaking characters are female. We found that only 16.83% of films in 2009 featured females in roughly half of all speaking characters. The vast majority of films featured a higher percentage of boys and men than girls and women. Only five films depicted more females than males.

Table 1
2009 Employment Behind-the-Camera by Biological Sex and Title

	Males	Females	Total
Directors	96.4% (*n*=107)	3.6% (*n*=4)	111
Writers	86.5% (*n*=243)	13.5% (*n*=38)	281
Producers	78.4% (*n*=665)	21.6% (*n*=183)	848
Total	1,015	225	1,240

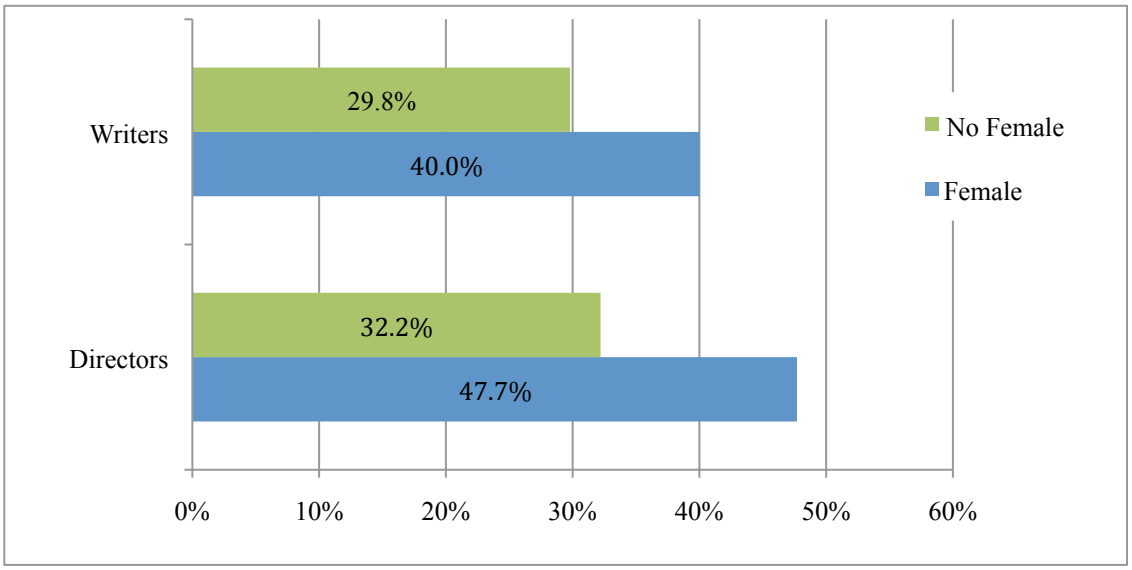
Note: The percentages are calculated within rows for each of the gate-keeping positions.

Turning to behind-the-scenes employment, the picture is even more problematic for females in film.[3] Only 3.6% of directors (Betty Thomas, *Alvin & the Chipmunks: The Squeakquel*; Anne Fletcher, *The Proposal*; Nancy Meyers, *It's Complicated*; Nora Ephron, *Julie & Julia*) 13.5% of writers, and 21.6% of producers were female across the 100 top-grossing films in 2009. This calculates into a ratio of 4.51 males to every one female. Not employing women in content creation seems short sighted, as the MPAA estimates that females purchased over 50% of domestic ticket sales in 2009.[4]

Does featuring a female behind-the-scenes matter for on screen portrayals of girls and women? Our findings suggest that it may. As shown in Figure 1, the percentage of girls/women on screen is significantly higher when at least one female is involved in the directing or writing process.[5] A 10.2% increase of females on screen is observed when one or more women are involved as screenwriters on motion pictures. The findings for director should be interpreted with caution, given the small sample size of female directors (*n*=4) noted above. No differences were found in the percentage of on screen girls and women by producer biological sex.

These findings are somewhat similar to other findings we have observed across 150 Academy Award® best picture nominated films from 1977 to 2006 as well as films released theatrically in 2007 and 2008.[6] These results suggest that females may be advocating for other females. Or, studio executives may feel more comfortable giving female-driven properties and story lines to female directors and screenwriters.

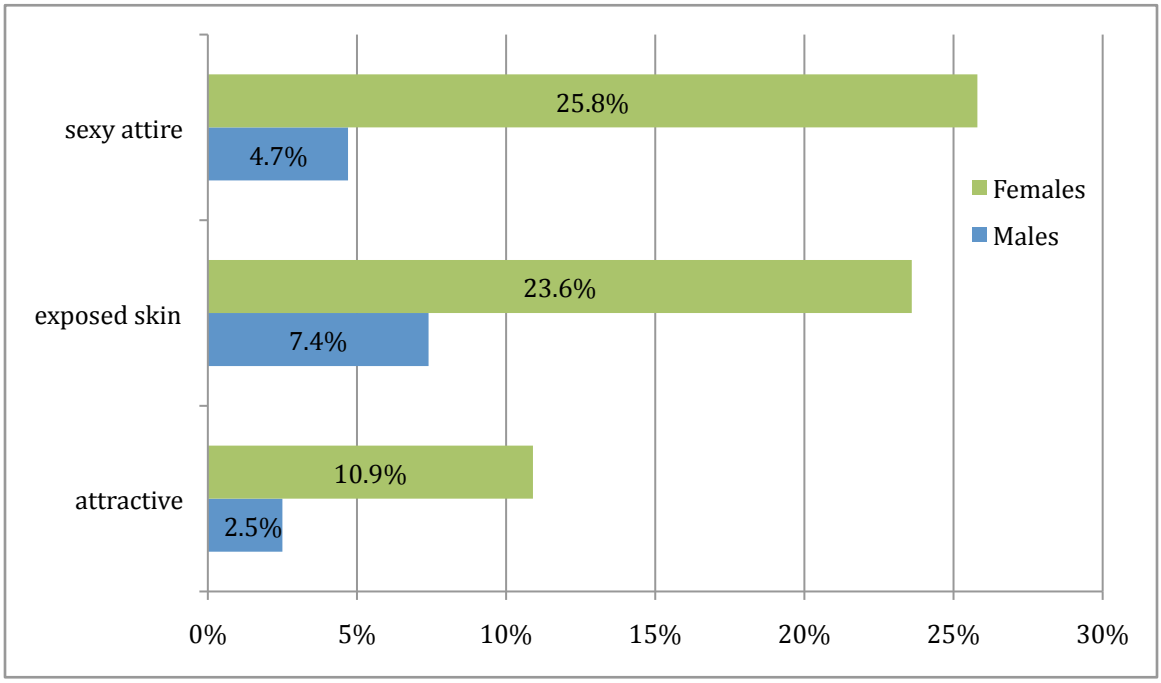
Figure 1
Percentage of Females On Screen by Involvement of Females Behind-the-Scenes



#2 Not Only are Females Infrequent, But They are Also Stereotyped or Sexualized

Traditional roles can still be found in popular motion pictures. Here we look at the percentage of male and female speaking characters depicted as parents or relational partners. In 2009, females were more likely than males to be shown as parents (50.5% vs. 43%). Though, this finding was just shy of statistical significance.[7] In terms of relationships, males are significantly more likely to be depicted as single (41.3%) than are their female counterparts (33.4%) in film.[8] Put differently, a higher percentage of female characters than male characters are shown in a committed romantic relationship (62.8% vs. 51.8%, respectively).

Figure 2
Appearance Indicators by Character Gender



We also measured age, as many have argued that females are younger in films than are their male counterparts.[9] In terms of adults, a higher percentage of females than males are shown between 21-39 years of age (56.6% vs. 48.7%, respectively). However, of all the adult characters 21-39 years of age in film, 36.85% are female. A higher percentage of males than females are depicted between 40 to 64 years old (35.2% vs. 22.2%, respectively). Looking at this in another light, only 24% of 40 to 64 year olds are females! In terms of elderly characters, only 26.9% are female. Thus, these data suggest that gender imbalance is most problematic among older characters (40+).

Table 2
Age by Gender of Speaking Characters

	Males	Females
Children (0-12)	5.1%	7.1%
Teens (13-20)	6.4%	10.7%
Adults (21-39)	48.7%	56.6%
Middle Age (40-64)	35.2%	22.2%
Elderly (65+)	4.6%	3.4%

Note: The percentages are based on column percentages. Thus, the total percentage is 100% within each gender.

Turning to another stereotype, we find gender differences across three appearance indicators (see Figure 2).[10] Females are more likely than males to be shown in sexy attire (25.8% vs. 4.7%), with some exposed skin (23.6% vs. 7.4%), and referenced as attractive (10.9% vs. 2.5%). Given the concern over the sexualization of female characters at younger and younger ages, [11] we analyzed these three measures for females (only) between the ages of 13-20 years old, 21-39 years old, and 40-64 years old. As noted in Table 2, very little deviation appears across the two younger age groups.[12] Thus, teenaged females are just as likely as adult women to be portrayed in a sexy or attractive light. The same cannot be said for female characters over 40.

Table 2
Female Speaking Characters by Appearance Indicators Across Three Age Groups

	13-20 yrs	21-39 yrs	40-64 yrs
% in sexy attire	33.8%	33.5%	14.4%
% w/some nudity	28.2%	30.5%	14.1%
% attractive	21.5%	13.8%	3.9%

Note: The percentages are based on row percentages. Thus, 33.8% of 13-20 year olds were shown in sexy attire. This means that 66.2% of females in this age group were not.

#3 Little Change in Gender Prevalence or Portrayal across Three Years

We compared the findings from 2009 to those obtained in our 2008 and 2007 samples. The results appear in Table 3. To indicate change, we specified that two conditions had to be met. First, a 5% difference (absolute using decimal places) had to be observed from 2007 to 2009 on the measure in question. Second and looking across all three years, the percentages had to reveal a consistent increase or decrease in the same direction. Using these criteria, there are two changes observed in Table 3.

Table 3
Females On Screen & Behind the Camera 2007-2009

Prevalence Behind Camera	2007	2008	2009
% of female directors	2.7%	8%	3.6%
% of female writers	11.2%	13.6%	13.5%
% of female producers	20.5%	19.1%	21.6%
Prevalence On Screen			
% of female characters	29.9%	32.8%	32.8%
% of films w/balanced casts	11.88%	15%	16.83%
Stereotyping On Screen			
% parents	50%	52.9%	50.5%
% relational partners*	55.9%	58.3%	62.8%
% in sexy attire	27%	25.7%	25.8%
% partially naked	21.8%	23.7%	23.6%
% attractive*	18.5%	15.1%	10.9%

In terms of stereotyping, the two changes in Table 3 seem to be working in the opposite direction. The percentage of females shown in committed relationships has *increased* over time. Yet, when we turn to one of the appearance indicators, the percentage of characters referenced as attractive has *decreased* over time. This finding may indicate that fewer women are being verbally or nonverbally objectified in film. Given that the other two indicators – sexy clothing, exposed skin – have not changed, this does not seem likely to be the case.

Conclusion

Overall, the landscape of cinematic content is still grossly imbalanced. Females are not only infrequent, but they are also stereotyped and sexualized in popular motion picture content. Little change has occurred across the three years studied, with absolutely no movement in the percentage of females working behind-the-scenes in key gate-keeping positions. As for on screen portrayals, an increase was observed in the percentage of films depicting gendered-balanced casts. But this increase was a hair shy of our 5% criterion. Less than one-fifth of roughly 300 films evaluated featured stories with gender parity. Very few films featured females as the majority of speaking characters, however (2007=5 movies; 2008=6 movies; 2009=5 movies). Clearly, females are not as valued as males on screen, behind-the-camera, or as consumers of motion picture content. Otherwise, our findings would be different.

Acknowledgements

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Appendix A
List of Films in the Sample

Avatar	The Princess and The Frog	Year One
Transformers 2: Revenge of the Fallen	Public Enemies	The Unborn
Harry Potter and the Half-Blood Prince	Julie & Julia	Planet 51
The Twilight Saga New Moon	He's Just Not That Into You	Drag Me To Hell
Up	Madea Goes to Jail	Orphan
The Hangover	The Ugly Truth	Duplicity
Star Trek	Up in the Air	Crazy Heart
The Blind Side	Knowing	Surrogates
Alvin and the Chipmunks the Squeakquel	Hannah Montana The Movie	Ninja Assassin
Sherlock Holmes	Where the Wild Things Are	Invictus
Monsters vs Aliens	Zombieland	State of Play
Ice Age 3 Dawn of the Dinosaurs	Coraline	Notorious
X-Men Origins Wolverine	Law Abiding Citizen	The Pink Panther 2
Night at the Museum Battle of the Smithsonian	Hotel For Dogs	All About Steve
2012	I Love You, Man	Halloween II
The Proposal	Obsessed	The Informant!
Fast & Furious	Race to Witch Mountain	The Last House on the Left
GI Joe: The Rise of Cobra	The Final Destination	The Men Who Stare At Goats
Paul Blart Mall Cop	The Taking of Pelham 123	(500) Days of Summer
Taken	Friday the 13th	Push
A Christmas Carol	17 Again	9
Angels & Demons	The Time Traveler's Wife	The Soloist
Terminator Salvation	Brüno	Toy Story / Toy Story 2
Cloudy With a Chance of Meatballs	Bride Wars	Did You Hear About the Morgans?
Inglourious Basterds	The Haunting in Connecticut	The Stepfather
G-Force	Ghosts of Girlfriends Past	The Uninvited
District 9	Funny People	Brothers
It's Complicated	I Can Do Bad All By Myself	Saw VI
Couples Retreat	My Bloody Valentine	Dance Flick
Paranormal Activity	Old Dogs	The Fourth Kind
Watchmen	Land of the Lost	The International
	My Sister's Keeper	Aliens in the Attic
	Precious	Observe and Report
	Underworld Rise of the Lycans	
	Confessions of a Shopaholic	
	The Lovely Bones	

Footnotes

[1.] Popularity was based on domestic box office performance as determined by Box Office Mojo. No documentaries were evaluated for this study. One film in our 2009 sample was released (i.e., *Toy Story, Toy Story 2*) as a "double feature." Given that both movies had a different story line and production crew, we treated the double feature as two separate films. The same situation occurred in our 2007 sample with one double feature (i.e., *Grindhouse*: *Death Proof* and *Planet Terror*).

[2.] As indicated above and in our 2007 and 2008 reports, the speaking character is the major unit to be described or explained in this study. Speaking characters may utter one or more words of dialogue independently or in a group context. Groups were only unitized when characters appeared identical and spoke at different times in the plot making their independent identities impossible to ascertain (i.e., Oompa Loompas). In 2009, only 8 lines of data featured groups. None of these lines were included in the analyses, however. As a point of comparison, only 5 groups were coded in 2007 and 7 in 2008.

In terms of coding, a series of demographic and appearance indicators were evaluated. Only a subset is reported in this document. Demographics captured the apparent age (i.e., 0-5, 6-12, 13-20, 21-39, 40-64, 65+) and biological sex (male, female) of each speaking character. We also measured the parental status and relational status of the characters. Parental (non parent, single parent, co-parent, parent but relational status unknown) and relational (single, married, committed relationship/not married, committed relationship/status unknown, divorced, widowed) status can change across the unfolding narrative, however. As such, coders were instructed to code these variables by focusing on the parental/relational status held for the longest duration across the plot.

We also measured three appearance indicators: sexually revealing clothing, exposed skin, and physical beauty (see Downs, E., & Smith, S. L. (2009). Keeping abreast of hypersexuality: A video game character content analysis. *Sex Roles*. http://www.springerlink.com/content/1646t346 76837317/ fulltext.pdf). As stated in our 2008 report (see page 6), "*Sexually revealing clothing* (SRC) refers to tight or alluring apparel that may arouse interest in other characters. SRC was coded as present or absent." A complimentary measure assessed the level of nudity present. Nudity captured the amount of exposed skin between the lower neck and high upper thigh region. The values for nudity include: none, some (cleavage, midriff, high upper thigh on females; cleavage or bare chest, midriff, high upper thigh on males; also includes exposed buttocks for males/females), and full (exposed genitals, or fully naked from neck to knees; for females, nipple exposure is also considered full nudity). We collapsed this variable into two levels: none vs. some (partial and full). Only 43 or 8% of instances of exposed skin were coded as "full."

The third appearance indicator is physical beauty. As stated in 2008 (see page 7), this variable "assesses whether one or more characters verbally (e.g., referring to a character as gorgeous, pretty, handsome, or any equivalent synonym) and/or nonverbally (e.g., whistling, starring) communicate the desirousness of another character. There were three levels to this variable: not attractive, attractive (i.e., one verbal or nonverbal reference), or very attractive (i.e., two or more verbal or nonverbal references)." We collapsed this variable into two levels at analysis: attractive (one or more instances of desirousness) vs.

non attractive. It must be noted that for each appearance and demographic variable, two additional values were possible to use: can't tell and not applicable.

Research assistants are trained in a classroom context to evaluate films. The training is conducted by the second author and takes roughly 6 weeks during the Fall and Spring months. Coder training is accelerated in the summer term. Six different groups of students evaluated the content, as portions of the sample were included in another study (Spring 2009, *n*=27; Summer 2009, *n*=4; Fall 2009, *n*=35; Spring 2010, *n*=23, Fall 2010, *n*=20; Spring 2011, *n*=12). Some of these research assistants worked with us across more than one term. Both unitizing and variable coding are evaluated during training. After multiple diagnostics, the coders begin evaluating the sample. Films are randomly assigned and evaluated by 3-5 independent research assistants, given the complexity of unitizing speaking characters. After a film is completed by each coder, reliability is calculated per movie and errors/disagreements are highlighted for fixing and/or discussion. In most cases, discussion involves the research assistants evaluating the film. In some instances, scheduling difficulties emerged and the entire group was prevented from meeting. When this occurred, the second author and at least one of the student researchers that evaluated the film discussed each of the discrepancies, re-viewing areas of disagreement in each movie.

For unitizing, we calculate the number of agreed upon lines (% of speaking characters) coded by all but one research assistant (majority or greater). We report unitizing agreement by quartile: 1-25 (# of lines seen by all but 1, 100%-91.49%), 26-50 (91.30%-84.91%), 51-76 (84.85%-77.08%), 77-101 (76.70%-53.73%). Five films were below 70% (69.12%, 68.63%, 63.33%, 54.17%, 53.73%) and thus were quite arduous in terms of unitizing. For variable coding, we used the Potter and Levine Donnerstein (1999) reliability formula that corrects for chance agreement with multiple coders. Here, we report median reliability coefficients along with the range for each variable across the 100 films: *form* (1.00, range=1.00); *age* (1.00, range=.65-1.0), *parental status* (1.00, range=0-1.0), *relational status* (1.0, range=0-1.0), *beauty* (1.0, range=.74-1.0), *sexually revealing clothing* (1.0, .737-1.0), and *nudity* (1.0, .74-1.0).

It should be noted that one film yielded 0 reliability for both parental and relational status, which is not something we have encountered before. This was due to the fact that the three coders who evaluated the movie (*9*) could not decide how to code post-apocalyptic, animate but robotic characters for parental and relational status (i.e., one coded "absent" for all the characters, another "can't tell," and still another "not applicable"). During discussion, the group came to consensus on how these measures should be treated (i.e., technically robots can adopt children and form committed relationships). The next lowest coefficient for parental and relational status was .642 & .652, respectively. In sum, unitizing and reliability coding pre-discussion for each film was acceptable across most of the sample.

3. For each film, we obtained the list of directors, writers, and producers from IMDbPro.com. The biological sex of each content creator (over 1200 individuals) was looked up online by at least two research assistants during the first week of February 2011. Students had to render a decision about the biological sex of the content creator and provide a link to where they obtained their source material. To this end, a photo or pronoun was scoured on IMDb, inBaseline, or other websites to make the judgment. Two independent research assistants achieved 100 percent agreement on 1,212 judgments of biological sex. Another 29 content creators were coded for biological sex by one of the study authors and a research assistant.

100 percent agreement was also obtained. A total of 43 content creators posed challenges for coders. In 19 instances, one coder entered 0 (male) but the second coder entered 1 (female). However, the source material revealing the biological sex of the content creator yielded the same conclusion. Thus, the entries are most likely to be simple keystroke errors.

In another 18 instances, one of the research assistants found and coded the content creator for biological sex whereas the second one put "can't tell" because they could not find evidence for their judgment. One of the study authors looked up these instances and provided a second, confirmatory code. A total of six content creators proved difficult to code, thereby necessitating a call or email to ascertain biological sex. This process was successful for five of the final six individuals. For the final content creator Babynames.com was used to determine their likely biological sex as all other methods to confirm it were unreliable (i.e., a restricted facebook.com profile page).

After the above coding process was accomplished the credits of each film were retrieved a final time during the week of August 22nd, 2011 from IMDbPro.com. A total of 16 additional names were added to the entire group. One of the authors and a research assistant independently retrieved the same conclusion when determining the biological sex of these new content creators. All information from the previous pass through was loaded on this final collection of credits. For the final analyses we removed any content creators that were listed on IMDBPro.com as "uncredited." A name appearing with two credits in any one major category (i.e, director, writer, producer) was only counted once. However, if the same name appeared within more than one of the major groups, then it was counted each time it was featured (i.e., once for director, once for writer).

4. Motion Picture Association of America (n.d.). Theatrical market statistics 2010. Retrieved from http://www.mpaa.org/policy/industry

5. The chi-square for *character sex* by *director sex* was significant, X^2 (1, 4,342)=18.05, $p < .01$, phi=.06 as was the chi-square for *character sex* by *writer sex*, X^2 (1, 4,342)=41.80, $p < .01$, phi=.10. The analysis on producer sex was not significant, however X^2 (1, 4,342)=1.32, p=.25, phi=.017.

6. Smith, S. L., Choueiti, M., Granados, A. & Erickson, S. (2008). *Asymmetrical Academy Awards®? A look at gender imbalance in best picture nominated films from 1977 to 2006*. http://annenberg.usc.edu/Faculty/ Communication /~/media/93914BE9EB5 F4C2795A3169E5A CDB84F.ashx. Smith, S. L. & Choueiti, M. (2010a). *Gender oppression in cinematic content? A look at females on-screen and behind-the-camera in top-grossing 2007 films. annenberg.usc.edu/News%20and%20Events /News/~/.../07GenderKey.ashx* Smith, S. L., & Choueiti, M. (2011). Gender inequality in cinematic content? A look at females on screen & behind-the-camera in Top-Grossing 2008 Films. http://annenberg.usc.edu/ Faculty/Communication%20and%20Journalism/SmithS.aspx

7. Chi-square analysis for *parental status* by *character sex* approached significance, X^2 (1, 644)=3.64, p=.056, phi=.075.

8. The analysis for *character sex* by *relational status* was significant, X^2 (2, 697)=9.44, $p < .01$, phi=.12.

[9.] The analysis for *character sex* by *age* X^2 (5, 4,171) =94.14, p < .01, phi=.15.

[10.] The three chi-squares for each of the appearance indicators by character sex were significant: *sexually revealing clothing*, X^2 (1, 4,091)=388.94, p < .01, phi=.31; *nudity* X^2 (1, 4,089)=213.15, p < .01, phi=.23; *physical beauty,* X^2 (1, 4,342)=135.40, p < .01, phi=.18. These are only a few of our typical hypersexuality measures. We are not reporting waist size, chest size, and thinness due to problems that emerged while coding part of the 2009 sample. We plan to release these measures at a later date.

[11.] American Psychological Association. (2010). Report of the APA Task force on the sexualization of girls. Retrieved online, http://www.apa.org/pi/women/programs/girls/report.aspx

[12.] The chi-square analysis revealed a significant association between *age* and females' *sexy attire*, X^2 (2, 1,218)=41.14, p < .01, phi=.18; *nudity*, X^2 (2, 1,215)=30.70, p < .01, phi=.16; and *physical beauty*, X^2 (2, 1,247)=33.67, p < .01, phi=.16. Additionally, and for the USC Annenberg Story, we examined how teenaged boys and girls compared across the three appearance indicators. Each analysis for teen characters only was statistically significant: *sexy attire*, X^2 (1, 311)=41.81, p < .01, phi=.37; *nudity*, X^2 (1, 311)=14.38, p < .01, phi=.215; and *physical beauty*, X^2 (1, 327)=10.10, p < .01, phi=.18.