

BIAS & INCLUSION IN ADVERTISING

AN ANALYSIS OF 2019 CANNES LIONS WORK



Geena Davis Institute *of* on Gender in Media
If she can see it, she can be it.[™]

USC Viterbi
School of Engineering

FOREWARD

Creativity has the power to change culture and the wider world in a deeply positive way. Data has always been the key to inspire dialogue and motivate systemic change across the industry.

Cannes Lions has been working in partnership with the Geena Davis Institute on Gender in Media since 2015. We're thrilled to present this report, the first and only research of its kind, producing clear data points on intersectional representation from a large sample of advertising films.

When Cannes Lions launched the Glass Lion in 2015 as part of an on-going commitment to positively impact the course of communications, it was in the knowledge that marketing actively shapes culture. Rewarding creative work that fights to address the (mis)representation of gender in marketing communication is something we hoped would lead to real change across the industry and society.

We were thrilled when Madeline di Nonno, CEO of the Institute accepted our invitation to be jury president of the Glass Lions in 2016. Following conversations at that Festival, together we set out to create something tangible. Something that would move the conversation, and the industry, forward. Less talk, more progress.

The result? At Cannes Lions 2017, we presented the first study of hard data concerning gender representation in advertising. A sample of Cannes Lions winning and shortlisted work from 2006-2016 was run through the automated coding tool GD-IQ. The shocking results revealed that there had been no improvement in the representation of women in advertising 2006.

Since then, the study has been updated annually and its findings have been shared, for free, right across the industry.

Both Cannes Lions and Geena Davis Institute on Gender in Media are proud members of the Unstereotype Alliance, whose sole aim is to eradicate harmful gender-based stereotypes in all media and advertising content. Through this collective, we work with partners from across the industry to share thought leadership and research, acknowledging the power that media has to help shape perceptions and ultimately work towards gender equality around the world.

The results of this latest report are clear. Though there are some positive stories - the representation of race has improved significantly since 2006 - there is much more work to do.

We hope you find the data useful. We ask you to share it with everyone you work with.



SUSIE WALKER

HEAD OF AWARDS
CANNES LIONS INTERNATIONAL
FESTIVAL OF CREATIVITY



EXECUTIVE SUMMARY

This study examines representations of gender, race/ethnicity, LGBTQ+, disability, age, and body size in Cannes Lions ads from 2006 - 2019, with a focus on new findings from 2019. This is the first public report to analyze all six key identity groups in film-based advertising. We also include an intersectional profile for each identity group. This executive summary presents the major findings.

GENDER

- In 2019 ads, male characters outnumber female characters two-to-one, dropping from a high of 40.2% female characters in 2014 ads. Male characters also have twice the screen time and speaking time as female characters.
- Nearly twice as many male characters are shown working as female characters in ads (22.2% compared with 13.3%). Male characters are also more likely to be depicted as leaders and shown as possessing authority than female characters.
- More male characters are shown as funny than female characters (22.1% compared with 15.4%).
- When it comes to sexualization, female characters are four times more likely to be shown in revealing clothing than male characters (10.8% compared with 2.2%), and nearly twice as likely to be shown as partially nude.

RACE/ETHNICITY

- Characters of color are well-represented in ads (38%), and this has improved significantly since 2006. Characters of color garnered 46.4% of screen time in 2019 ads.
- White characters are more likely to be shown working than characters of color (20.5% compared with 17.2%).
- White characters are more likely to be shown as “smart” than characters of color (10.1% compared with 7.6%).

LGBTQ+

- LGBTQ+ characters are virtually nonexistent. Only 1.8% of characters with a discernible sexual orientation in ads are LGBTQ+ compared to 10.0% of people globally.¹
- Non-LGBTQ+ characters are more likely to be shown working than LGBTQ+ characters (18.9% compared with 6.9%).
- Non-LGBTQ+ characters are more likely to be shown as “smart” than LGBTQ+ characters (8.9% compared with 6.8%).

DISABILITY

- Characters with disabilities make up only 2.2% of characters in 2019 ads, which is well below the 19% of people with disabilities globally.²
- Characters with disabilities are far more likely to be depicted as “smart” than characters without disabilities (35.6% compared with 8.2%).

AGE (60+)

- In ads, only 7.0% of characters are ages 60+, which is well below the number of individuals in this age group globally (19%).
- Younger characters are more likely than characters 60+ to be shown in an office (6.1% compared with 1.7%).
- Characters ages 60+ are nearly twice as likely to be shown as leaders than younger characters (24.9% compared with 13.3%), and older characters are more likely than younger characters to be shown as having authority.
- Characters ages 60+ are more likely to be depicted as “smart” than younger characters (15.0% compared with 8.1%).
- Older characters (ages 60+) are more likely to be depicted with physical comedy than younger characters (15.0% compared with 8.6%).

BODY SIZE

- Only 7.2% of characters are shown with large body types – well below the 39% of people with large body types globally.
- Characters with large body types are more likely to be shown working than other characters (26.1% compared with 18.1%), but 15.3% are shown as “lazy” in ads.
- Characters with large body types are more likely to be shown eating or drinking than other characters (9.1% compared with 5.6%).
- One-in-five characters with large body types are included in an ad for comic relief (20.5%).
- Characters with large body types are many times more likely to be shown as “stupid” than other characters (9.1% compared with 1.8%).

TABLE OF CONTENTS

INTRODUCTION	1
METHODOLOGY	1
DATASET OVERVIEW	2
FINDINGS	3
CONCLUSION	8
APPENDIX	9
ENDNOTES	10



INTRODUCTION

We begin this report with a brief description of our research methodology. Next, we present a profile of our 251 Cannes Lions Film and Film Craft advertisements from 2019. Then we present our findings, ending with a detailed section on conclusions and recommendations.

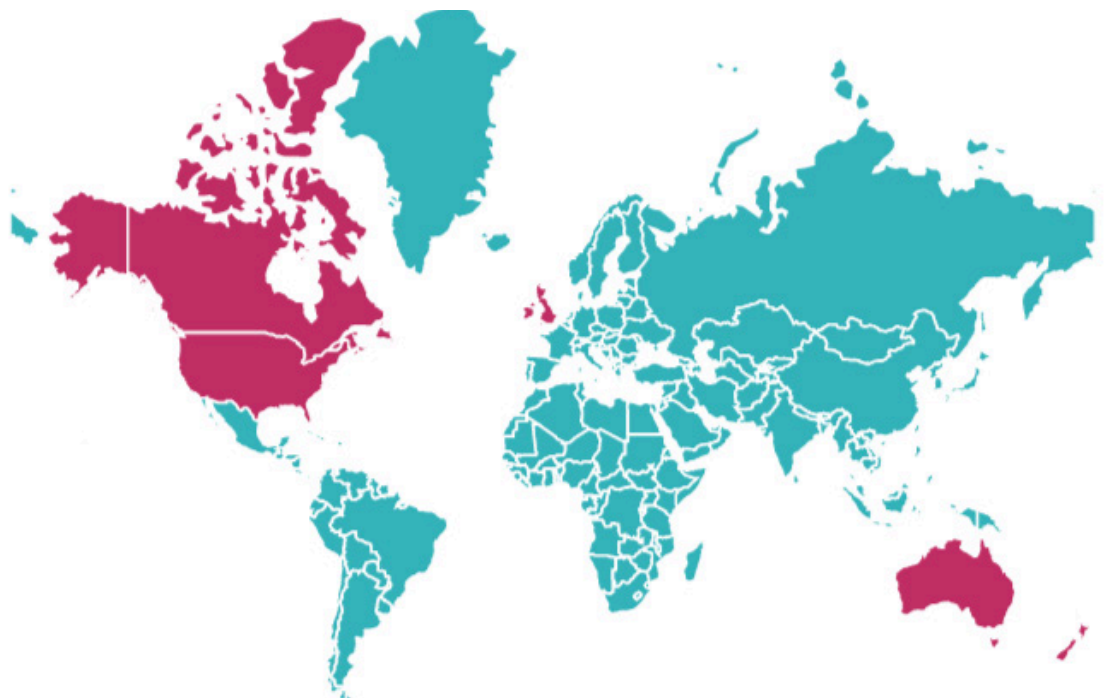
METHODOLOGY

Content analysis is a research method ideal for systematically analyzing the content of communications, such as advertisements. Content analysis is used by social scientists to quantify and examine the presence of certain themes or concepts. We used automated coding (GD-IQ) and hand coding to assess representations of gender, race, LGBTQ+, disability, age, and body size in Cannes Lions Film and Film Craft advertisements. We analyzed 251 English-speaking or English-subtitled Cannes Lions Film and Film Craft advertisements from 2019. This includes ads from the UK, USA, Canada, Ireland, New Zealand, and Australia. We compare these findings to 2,270 Cannes Lions advertisements from 2006 to 2018. All reported differences are statistically significant at the .05 level unless otherwise indicated. The unit of analysis for this study is characters in Cannes Lions Film and Film Craft advertisements.

For automated coding, we employed the Geena Davis Inclusion Quotient (GD-IQ), a ground-breaking software tool developed by the Geena Davis Institute on Gender in Media at Mount Saint Mary's University to analyze audio and video media content. Funded by Google.org, the GD-IQ incorporates machine learning technology as well as the University of Southern California's audio-visual processing technologies, and was the first software tool in existence with the ability to measure screen and speaking time through the use of automation. This revolutionary tool was co-developed by the Institute and led by Dr. Shrikanth (Shri) Narayanan and his team of researchers at the University of Southern California's Signal Analysis and Interpretation Laboratory (SAIL), along with Dr. Caroline Heldman, Vice President of Research and Insights at the Institute. For more information about the GD-IQ, see the Appendix.

For expert human coding, twelve researchers systematically evaluated the characters in Cannes Lions Film and Film Craft advertisements. Prior to initiating the work, the research team engaged in a total of 44 hours of training and codebook development. The team also performed a test to measure inter-rater reliability. Initial inter-rater reliability tests were performed on 10 ads to ensure that members of the research team reached agreement on evaluations. Inter-coder reliability was achieved in terms of both absolute agreement and Cohen's Kappa measures.

COUNTRIES
UNITED KINGDOM
UNITED STATES
CANADA
IRELAND
AUSTRALIA
NEW ZEALAND



DATASET OVERVIEW

FIGURE 1. GENDER IN 2019 FILM & FILM CRAFT ADS

DEMOGRAPHIC BREAKDOWN	PERCENTAGE OF SAMPLE
MALE	61.4%
FEMALE	38.4%
GENDER NON-CONFORMING	0.2%

FIGURE 2. AGE IN 2019 FILM & FILM CRAFT ADS

DEMOGRAPHIC BREAKDOWN	PERCENTAGE OF SAMPLE
CHILD (1-12)	10.6%
TWEEN (13-14)	2.5%
LATE TEENS (15-19)	9.0%
TWENTIES (20-29)	26.8%
THIRTIES (30-39)	22.2%
FOURTIES (40-49)	13.6%
FIFTIES (50-59)	8.4%
SIXTIES (60 AND OLDER)	7.0%
TWO CATEGORIES FOR AGE	
UNDER 60	93.0%
60+	7.0%

FIGURE 3. RACE/ETHNICITY IN 2019 FILM & FILM CRAFT ADS

DEMOGRAPHIC BREAKDOWN	PERCENTAGE OF SAMPLE
WHITE	61.4%
LATINX	5.6%
BLACK	18.2%
NATIVE AMERICAN/INDIGENOUS	1.5%
ASIAN	8.4%
MIDDLE EASTERN	2.0%
MIXED RACE/ETHNICITY	2.9%
TWO CATEGORIES FOR RACE/ETHNICITY	
WHITE CHARACTERS	61.4%
CHARACTERS OF COLOR	38.6%

FIGURE 4. SEXUAL ORIENTATION IN 2019 FILM & FILM CRAFT ADS

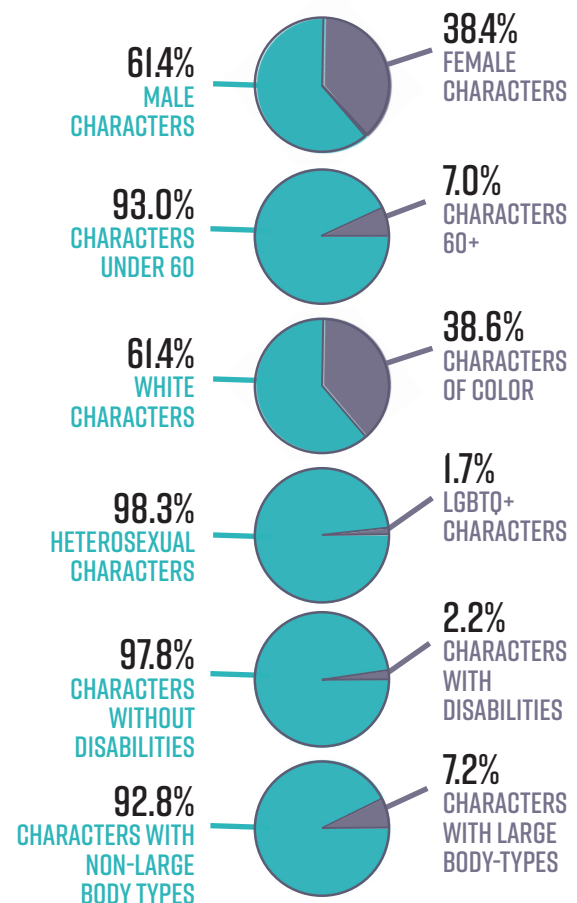
DEMOGRAPHIC BREAKDOWN	PERCENTAGE OF SAMPLE
HETEROSEXUAL	98.3%
LGBTQ+	1.7%

FIGURE 5. DISABILITY STATUS IN 2019 FILM & FILM CRAFT ADS

DEMOGRAPHIC BREAKDOWN	PERCENTAGE OF SAMPLE
PHYSICAL DISABILITY	1.5%
COGNITIVE DISABILITY	0.5%
COMMUNICATION DISABILITY	0.2%
TWO CATEGORIES FOR DISABILITY STATUS	
WITHOUT DISABILITIES	97.8%
WITH DISABILITIES	2.2%

FIGURE 6. BODY SIZE IN 2019 FILM & FILM CRAFT ADS

DEMOGRAPHIC BREAKDOWN	PERCENTAGE OF SAMPLE
SMALL BODY TYPE	30.6%
MEDIUM BODY TYPE	62.2%
LARGE BODY TYPE	7.2%
TWO CATEGORIES FOR BODY SIZE	
NON-LARGE BODY TYPES	92.8%
LARGE BODY TYPES	7.2%



FINDINGS

Our analysis and findings for 2019 ads are broken down into six main sections: representations of gender, race, sexual orientation, ability status, age, and body size. All reported differences are statistically significant at the .05 level.

GENDER

In this section, we analyze the representation of gender by examining prominence, screen time, speaking time, activities, settings, portrayals of occupation and leadership, personal attributes, and sexualization.

Prominence

Male characters outnumber female characters by a wide margin in 2019 Cannes Lions ads (61.6% compared with 38.4%). For context, women make up 51% of the global population.³

As shown in Figure 7, the representation of women has fluctuated over the past decade, peaking at 40.2% in 2014. The work submitted to Cannes Lions in 2019 does not reflect an improvement over the previous year.

FIGURE 7.

GENDER REPRESENTATIONS OVER TIME IN CANNES LIONS ADS

YEAR	% FEMALE CHARACTERS	% MALE CHARACTERS
2019	38.6%	61.4%
2018	39.9%	59.8%
2017	37.1%	62.9%
2016	36.9%	63.1%
2015	38.8%	61.2%
2014	40.2%	59.8%
2013	36.3%	63.7%
2012	32.7%	67.3%
2011	36.9%	63.1%
2010	31.9%	68.1%
2009	27.4%	72.6%
2008	36.1%	63.9%
2007	33.0%	67.0%
2006	33.9%	66.1%

Using the GD-IQ, we analyzed the amount of time characters appeared on screen (screen time) and speaking time by gender.

- Male characters appear on screen twice as often as female characters (69.3% compared with 30.6% of the time faces appear in the frame). This

is down from 38.0% female character screen time in 2018 Cannes Lions ads.

- Male characters speak twice as often as female characters (66.5% compared with 33.5% of the time characters are speaking). This is down from 39.2% female character speaking time in 2018 Cannes Lions work.

Activity

When it comes to various activities engaged in by characters in ads, we find no gender difference in depictions of shopping, driving, cleaning, cooking, socializing, eating/drinking, or exercising. We find a significant gender difference in depictions of work.

- Nearly twice as many male characters are shown working as female characters in Cannes Lions ads (22.2% compared with 13.3%).

Setting

With setting, we find no significant gender differences in depictions in a kitchen, a car, a store, a living room, a restaurant or bar, at the gym, or at a sporting event. We do find gender gaps in portrayals in an office, outdoors, in a bedroom, in a bathroom, and in a classroom.

- Male characters are more likely to be shown in an office than female characters (6.6% compared with 4.1%).
- Male characters are more likely to be shown outdoors than female characters (43.3% compared with 35.9%).
- Female characters are more likely to be located in a bedroom than male characters in Cannes Lions work (7.0% compared with 4.3%).
- Male characters are shown nearly three times more often in a bathroom than female characters (5.9% compared with 2.2%).
- Female characters show up nearly twice as often in a classroom in Cannes Lions ads than male characters (3.9% compared with 1.9%).

Work and Leadership

We find gender gaps in portrayals of work and leadership in Cannes Lions ads.

- Male characters are significantly more likely to be shown as having an occupation than female characters (25.5% compared with 16.7%).
- Male characters are more likely to be shown as leaders than female characters (16.6% compared with 10.1%).

MALE CHARACTERS ARE MORE LIKELY TO BE SHOWN IN AN OCCUPATION THAN FEMALE CHARACTERS

Personal Attributes

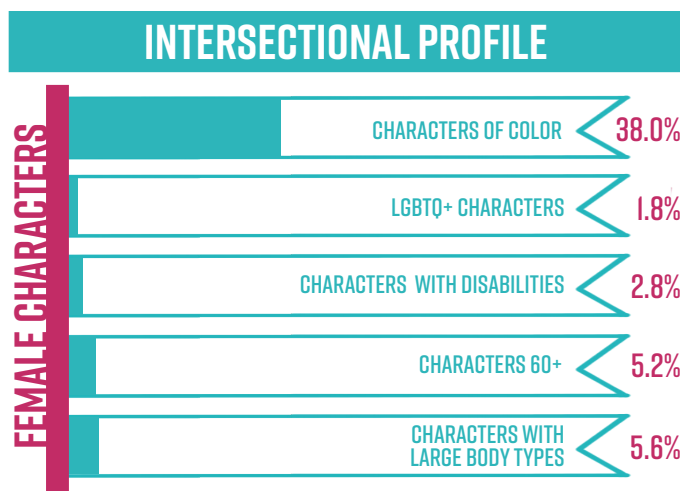
We find no gender differences in intelligence, but we do find gender gaps in humor and authority depictions in Cannes Lions work.

- More male characters are shown as funny than female characters (22.1% compared with 15.4%).
- Male characters are almost twice as likely to be shown as possessing personal authority than female characters (17.0% compared with 9.7%).

Gender Stereotypes

We find significant differences when it comes to the gender stereotype that women are sex objects.

- Female characters are four times more likely to be shown in revealing clothing than male characters (10.8% compared with 2.2%).
- Female characters are nearly twice as likely to be shown as partially nude than male characters (8.1% compared with 4.5%).
- More female characters are shown as visually objectified than male characters (1.8% compared with 0.6%).
- Female characters are also more likely to be verbally objectified than male characters (1.2% compared with 0.2%).



RACE

In this section, we analyze the representation of race in prominence, activities, settings, portrayals of occupation and leadership, and personal attributes.

Prominence

Overall, representation of people of color in 2019 advertisements reached 38.0%.⁴ Characters of color are equally likely as white characters to be featured in both speaking roles and visually prominent roles.

When it comes to screen time, characters of color garnered 46.4% of screen time in 2019 Cannes Lions ads.

As shown in Figure 8, representations of characters of color have improved significantly since 2006, peaking at 43.1% in 2018.

FIGURE 8.

RACE REPRESENTATIONS OVER TIME IN CANNES LIONS ADS

YEAR	% CHARACTERS OF COLOR	% WHITE CHARACTERS
2019	38.0%	62.0%
2018	43.1%	56.9%
2017	41.4%	58.6%
2016	30.7%	69.3%
2015	32.6%	67.4%
2014	33.6%	66.4%
2013	28.8%	71.2%
2012	27.2%	72.8%
2011	20.9%	79.1%
2010	27.3%	72.7%
2009	29.8%	70.2%
2008	22.6%	77.4%
2007	27.6%	72.4%
2006	25.9%	74.1%

Activity

When it comes to activities, we find no differences in shopping, driving, cleaning, cooking, and socializing. We do find racial differences in depictions of work, eating/drinking, and exercise.

- White characters are more likely to be shown working than characters of color (20.5% compared with 17.2%).
- White characters are more likely to be shown eating/drinking than characters of color (6.7% compared with 4.9%).
- Characters of color are twice as likely to be shown exercising than white characters (7.3% compared with 3.1%).

Setting

With setting, we find no significant racial differences in characters located in a kitchen, a car, a store, outdoors, the gym, a bedroom, or a bathroom. We find gaps in depictions in an office, a living room, a restaurant or bar, at the gym, at a sporting event, and in a classroom.

- White characters are more likely to be shown in an office than characters of color (6.5% compared with 4.9%).
- White characters are more likely to be shown in a living room than characters of color (12.1% compared with 9.7%).
- White characters are more likely to be depicted in a restaurant or bar than people of color (4.9% compared with 2.5%).
- Characters of color are more likely to be shown at the gym than white characters (4.2% compared with 1.5%).

- A greater percentage of characters of color are shown at a sporting event than white characters (8.9% compared with 4.7%).
- Characters of color are more likely to be shown in a classroom than white characters (3.5% compared with 2.1%).

Work and Leadership

We find no significant racial differences in representations of leadership, but do find a gap with depictions of work.

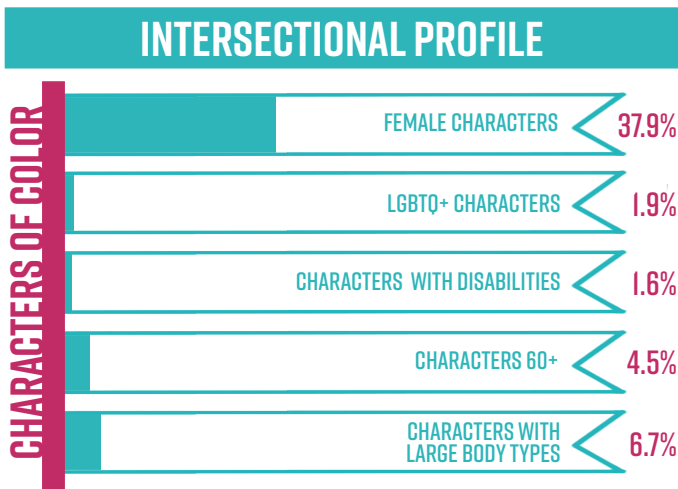
- White characters are more likely to be shown with an occupation than characters of color (24.3% compared with 20.5%).

WHITE CHARACTERS ARE MORE LIKELY TO BE SHOWN IN AN OCCUPATION THAN CHARACTERS OF COLOR

Personal Attributes

We find no racial differences in depictions of personal authority or humor in 2019 Cannes Lions ads, but we do find a difference in representations of intelligence.

- White characters are more likely to be shown as “smart” than characters of color (10.1% compared with 7.6%).



LGBTQ+

In this section, we analyze the representation of LGBTQ+ characters in prominence, activities, settings, portrayals of occupation and leadership, and personal attributes.

Prominence

When it comes to sexual orientation in 2019 Cannes Lions ads, LGBTQ+ characters are virtually nonexistent despite the fact that 10.0% of people globally identify as LGBTQ+. Only 1.8% of characters with a discernible sexual orientation in Cannes Lions ads are LGBTQ+.

Activity

We find no differences by character sexual orientation and shopping, driving, cleaning, cooking, socializing, eating/drinking, or exercising. We find a difference in working.

- Non-LGBTQ+ characters are more likely to be shown working than LGBTQ+ characters (18.9% compared with 6.8%).

Setting

We find no significant differences in character depictions in an office, a car, a store, a restaurant or bar, at the gym, at a sporting event, or in a classroom by sexual orientation. We do find differences in depictions in a kitchen, outdoors, in a living room, in a bedroom, and in a bathroom.

- LGBTQ+ characters are more likely to be shown in a kitchen than other characters (11.4% compared with 3.6%).
- A greater percentage of LGBTQ+ characters are shown outdoors than other characters (56.8% compared with 40.1%).
- LGBTQ+ characters are more likely to be shown in a living room than non-LGBTQ+ characters (20.5% compared with 10.6%).
- LGBTQ+ characters are more likely to be shown in a bedroom than non-LGBTQ+ characters (15.9% compared with 5.2%).
- LGBTQ+ characters are more likely to be shown in a bathroom than non-LGBTQ+ characters (15.9% compared with 4.4%).

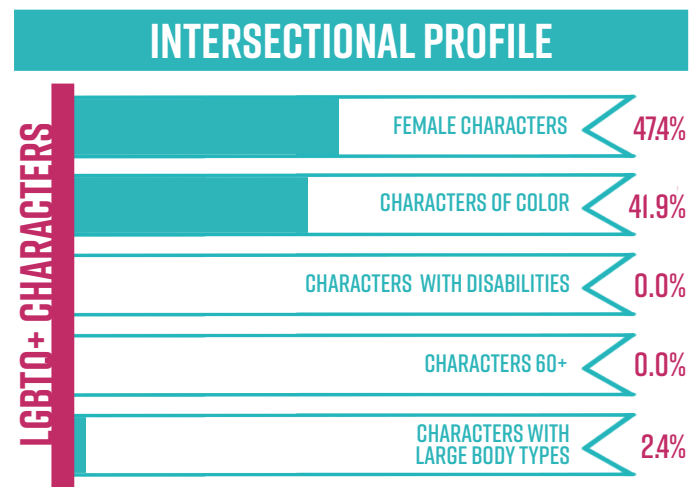
Work and Leadership

We find no significant differences in depictions of work or leadership by sexual orientation.

Personal Attributes

We find no differences in depictions of personal authority or humor by sexual orientation. We do find a difference in portrayals of intelligence.

- Non-LGBTQ+ characters are more likely to be shown as “smart” than LGBTQ+ characters (8.9% compared with 6.8%).



DISABILITY

In this section, we analyze the representation of those with disabilities with regards to prominence, activities, settings, portrayals of occupation and leadership, and personal attributes.

Prominence

Globally, 15.0% of people have some form of cognitive or physical disability, but people with disabilities make up only 2.2% of characters in 2019 Cannes Lions work.

ONLY 2.2% OF CHARACTERS IN CANNES LIONS ADS HAVE A COGNITIVE OR PHYSICAL DISABILITY

Activity

We find no differences in terms of disability and depictions of characters shopping, driving, working, socializing, or eating/drinking. We do find significant differences in portrays of cleaning, cooking, and exercising.

- Characters with disabilities are more likely to be shown cleaning than characters without disabilities (3.4% compared with 0.7%).
- A greater percentage of characters with disabilities are shown cooking than characters without disabilities (3.4% compared with 0.9%).
- Characters with disabilities are more likely to be shown exercising than characters without disabilities (11.9% compared with 4.5%).

Setting

We find no disability differences with depictions in a kitchen, an office, a car, a store, outdoors, in a bedroom, a restaurant or bar, the gym, a living room, or in a bathroom. We do find a difference in depictions at sporting events.

- Characters with disabilities are more likely to be shown at a sporting event than characters without disabilities (16.9% compared with 6.5%).

Work and Leadership

We find no significant differences by disability when it comes to work and leadership.

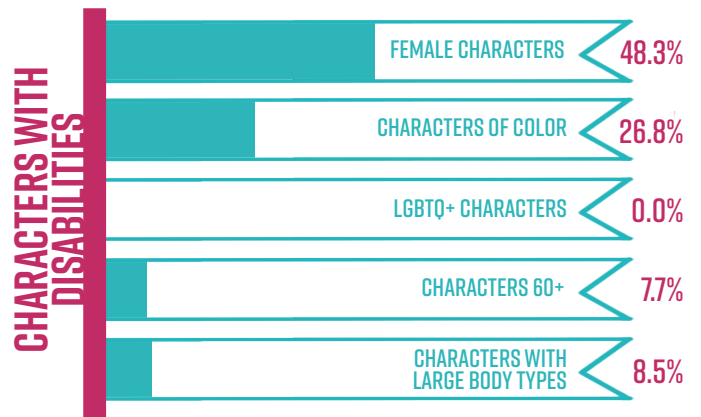
Personal Attributes

No disability differences are found with portrayals of personal authority or humor, but we do find a difference in portrayals of intelligence.

- Characters with disabilities are far more likely to be shown as “smart” than characters without disabilities (35.6% compared with 8.2%).

CHARACTERS WITH DISABILITES ARE MORE LIKELY TO BE “SMART” THAN CHARACTERS WITHOUT DISABILITIES

INTERSECTIONAL PROFILE



AGE

In this section, we analyze the representation of characters ages 60+ with regards to prominence, activities, settings, portrayals of occupation and leadership, and personal attributes.

Prominence

Characters ages 60+ face ageism in many societies, and this is reflected in entertainment media, which vastly underrepresents older adults. In Cannes Lions ads, 7.0% of characters are ages 60+. For context, people ages 60+ make up 19% of the global population.⁵

Activity

We find no significant differences in shopping, driving, cleaning, cooking, working, socializing, eating/drinking, or exercising between characters ages 60+ and younger characters.

Setting

We find no differences between characters ages 60+ and younger characters in a kitchen, a car, a store, a restaurant or bar, a bedroom, a bathroom, or at a sporting event. Differences emerge in depictions in an office, outdoors, a living room, at the gym, and in a classroom.

- Younger characters are more likely than characters 60+ to be shown in an office (6.1% compared with 1.7%).
- Characters younger than 60 are more likely to be shown outdoors than characters 60+ (39.8% compared with 30.1%).
- Characters ages 60+ are more likely to be shown in a living room than younger characters (17.3% compared with 10.2%).
- Younger characters are more likely to be shown at the gym than characters 60+ (2.6% compared with 0.0%).
- Younger characters are more likely than characters 60+ to be shown in a classroom (2.9% compared with 0.0%).

Work and Leadership

We find no differences in depictions of work by age, but do find a difference in leadership portrayals.

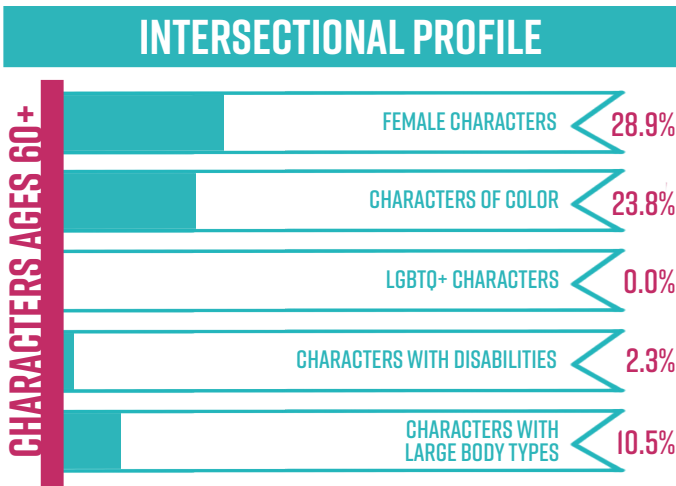
- Characters ages 60+ are nearly twice as likely to be shown as leaders than younger characters (24.9% compared with 13.3%).

CHARACTERS 60+ ARE NEARLY TWICE AS LIKELY TO BE SHOWN AS LEADERS THAN YOUNGER CHARACTERS

Personal Attributes

We find age differences in depictions of authority, intelligence, and humor.

- Characters ages 60+ are twice as likely to have personal authority than younger characters (11.0% compared with 5.1%).
- Characters ages 60+ are more likely to be depicted as “smart” than younger characters (15.0% compared with 8.1%).
- Older characters (ages 60+) are more likely to be depicted with physical comedy than younger characters (15.0% compared with 8.6%).



BODY SIZE

In this section, we analyze the representation of those with large body types with regard to prominence, activities, settings, portrayals of occupation and leadership, and personal attributes.

Prominence

In Cannes Lions work, 7.2% of characters are shown with large body types. For context, people with large body types make up 39% of the global population.⁶

Activity

When it comes to depictions of character activities, we find no body size differences with shopping, driving, cleaning, cooking, socializing, or exercising. We do find differences with working and eating/drinking.

- Characters with large body types are more likely to be shown working than other characters (26.1% compared with 18.1%).
- Characters with large body types are more likely to be shown eating or drinking than other characters (9.1% compared with 5.6%).

Setting

With settings, we find no difference by character body size and depictions in a kitchen, an office, a car, a store, outdoors, a living room, a restaurant or bar, the gym, or a bedroom, a sporting event, or a classroom. We find gaps with depictions in a bathroom by character body size.

- Characters with large body types are twice as likely to be shown in a bathroom than other characters (10.8% compared with 4.4%).

Work and Leadership

We find no leadership differences by body size, but we do find a difference in work portrayals.

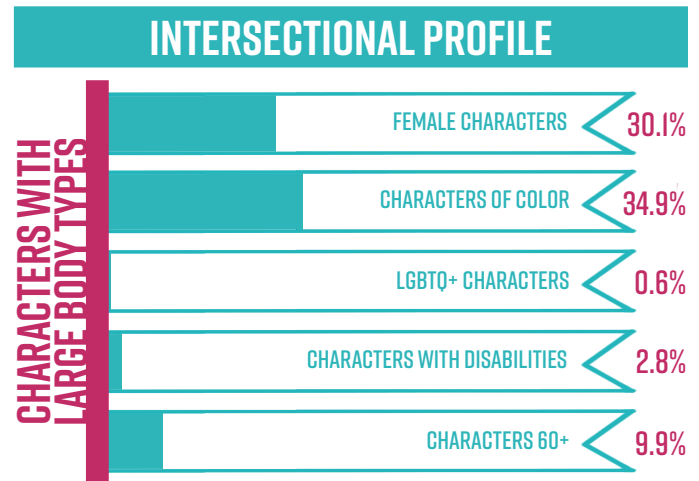
- Characters with large body types are more likely to be shown as having an occupation than other characters (26.1% compared with 22.3%).
- 15.3% of characters with large body types are shown as “lazy” in Cannes Lions ads.

15.3% OF CHARACTERS WITH LARGE BODY TYPES ARE SHOWN AS “LAZY” IN CANNES LIONS ADS

Personal Attributes

Character authority does not vary by character body size, but humor and intelligence do.

- Characters with large body types are nearly three times more likely to be shown as humorous than other characters (37.5% compared with 17.5%).
- One-in-five characters with large body types are included in the ad for comic relief (20.5%).
- Characters with large body types are many times more likely to be shown as “stupid” than other characters (9.1% compared with 1.8%).



CONCLUSION

This study systematically examined representations of gender, race, sexual orientation, disability, age, and body size in 2019 Cannes Lions Film and Film Craft advertisements.

GENDER

Male characters continue to outnumber female characters when it comes to overall characters, screen time, and speaking time, which indicates that women matter less in the worlds created by advertisers. Male characters also take the upper hand with work, leadership, and authority, which reinforces stereotypes that men should be in charge. More male characters are also shown as funny in ads, which plays into the age-old cliché that women are not funny. Lastly, representations of sexualization also reflect stereotypes in that female characters are shown in revealing clothing and as partially nude far more often than male characters. To sum up, women simply appear less often in Cannes Lions work, and when they do appear, they are often depicted as sex objects who lack humor and power.

WRITE AND CAST MORE FEMALE CHARACTERS, SEXUALIZE THEM LESS, AND SHOW THEM AS FUNNY AND HAVING AUTHORITY.

RACE

Characters of color have great representation in Cannes Lions ads in terms of overall numbers and the amount of time they appear on screen. However, they are less likely to be shown working and white characters are shown as smarter. In other words, people of color have a strong presence in Cannes Lions work, but they are presented in ways that reinforce negative stereotypes.

WRITE CHARACTERS OF COLOR AS INTELLIGENT PROFESSIONALS IN AD SCRIPTS.

LGBTQ+

LGBTQ+ characters are virtually nonexistent in Cannes Lions ads, and on the rare occasion they do appear, they are less likely to be depicted as working or smart than other characters. This means that LGBTQ+ characters are both erased and stereotyped in Cannes Lions work.

WRITE AND CAST MORE LGBTQ+ CHARACTERS, AND WRITE THEM AS PROFESSIONAL AND INTELLIGENT.

DISABILITY

Characters with disabilities are virtually absent in Cannes Lions ads, but when they do appear, their representations do not reinforce negative stereotypes. Characters with disabilities are shown as smarter than other characters.

WRITE AND CAST MORE CHARACTERS WITH DISABILITIES.

AGE

Characters who are 60+ are vastly underrepresented in Cannes Lions ads, and when they appear, they are represented in both positive and stereotypical ways. Younger characters are more likely to be seen in an office, but characters ages 60+ are more likely to be shown as leaders, as possessing authority, and as smart. However, their physicality is commonly a punchline.

WRITE AND CAST MOST CHARACTERS AGES 60+, AND MAKE SURE THAT THEIR PRESENCE ISN'T A PUNCHLINE ABOUT AGE.

BODY SIZE

Characters with large body types are vastly underrepresented. When they appear, characters with large body types are more likely to be shown working, but they are also commonly depicted as lazy. A surprising one-in-five characters with large body types is included in the ad as comic relief, and they are nearly five times more likely to be depicted as “stupid” than characters with medium or small body types. Depictions of characters with large body types reinforce some very ugly stereotypes about body size.

PRIORITIZE BETTER REPRESENTATIONS OF CHARACTERS WITH LARGE BODY TYPES SINCE THEY ARE DEPICTED IN HIGHLY DAMAGING WAYS. FIRST, WRITE AND CAST MORE CHARACTERS WITH LARGE BODY TYPES. SECOND, MAKE SURE THEY AREN'T BEING INCLUDED IN THE AD AS LAZY, STUPID, OR A PUNCHLINE.

APPENDIX

The GD-IQ was funded by Google.org. Incorporating Google’s machine learning technology and the University of Southern California’s audio-visual processing technologies, this tool was co-developed by the Institute and led by Dr. Shrikanth (Shri) Narayanan and his team of researchers at the University of Southern California’s Signal Analysis and Interpretation Laboratory (SAIL), along with Dr. Caroline Heldman.

To date, most research investigations of media representations have been done manually. The GD-IQ revolutionizes this approach by using automated analysis, which is not only more precise, but makes it possible for researchers to quickly analyze massive amounts of data, which allows findings to be reported in real time. Additionally, the GD-IQ allows for more accurate analysis, and because the tool is automated, comparisons across data sets and researchers are possible, as is reproducibility. Automated analysis of media content gets around the limitations of human coding. Beyond the significant advantage of being able to efficiently analyze more films in less time, the GD-IQ can also calculate content detail with a level of accuracy that eludes human coders. This is especially true for factors such as screen and speaking time, where near exact precision is possible. Algorithms are a set of rules of calculations that are used in problem-solving. For this report, we employed two automated algorithms that measure screen time by gender and race, and speaking time of characters by their gender. Here is an overview of the procedures we used for each algorithm.

SCREEN TIME ANALYSIS

We compute the screen time of female characters by calculating the ratio of female faces to the total number of faces in the film’s visuals. The screen time is calculated using online face detection and tracking with tools provided by Google’s machine learning technology. In the interest of precision and time, we estimate screen time by computing statistics over face-tracks (boxes tracking the general outline of each face) instead of individual faces. The face-tracks returned by technology include different attributes of the face with the corresponding time of occurrence in the video. Among the attributes returned for each of the detected faces, we use two parameters—the confidence of the detected face and the system’s posterior probability for gender prediction. A threshold of 0.25 was empirically chosen for determining confident face detection.

Due to multiple characters appearing on screen simultaneously, the face-tracks can be overlapping. A gender label is then assigned to each track using the average gender posterior associated with the confident faces in the track. If the average gender posterior probability of the track is greater than 0.5, the track is classified as a “female track,” otherwise, it is a “male track.” The number of frames with confident face detections in each track is summed up across all tracks to get the total number of faces. The number of female tracks is aggregated to get the total number of faces predicted as female. Finally, the screen time is computed as the ratio between the number of female face detections to the total number of face detections across the length of the movie. Supplementary analysis shows that screen time estimated at frame-level (individual faces) instead of using face-tracks was not significantly different and was comparable. Furthermore, computing the average of gender posterior over tracks has an added benefit of “smoothing out” some of the local gender prediction errors. Face-tracking incorporates temporal contiguity information to reduce transient errors in gender prediction that may occur with analyzing individual faces independently. We performed a similar analysis for character race and screen time.

SPEAKING TIME ANALYSIS

Using movie audio, we compute the speaking time of male and female characters to obtain an objective indicator of gender representation. The algorithm for performing this analysis involves automatic voice activity detection, audio segmentation, and gender classification.

VOICE ACTIVITY DETECTION

Movie audio typically contains many non-speech regions, including sound effects, background music, and silence. The first step is to eliminate non-speech regions from the audio using voice activity detection (VAD) and retain only speech segments. We used a recurrent neural network based VAD algorithm implemented in the open-source toolkit OpenSMILE to isolate speech segments.

SEGMENTATION

We then break speech segments into smaller sections in order to ensure each segment includes speech from only one speaker. This is performed using an algorithm based on Bayes Information Criterion (BIC), available in the KALDI toolkit. Thirteen dimensional Mel Frequency Cepstral Coefficient (MFCC) features are used for the automatic speaker segmentation. This step essentially decomposes continuous speech segments obtained in the VAD step into smaller segments to make sure no segment contains speech from two different speakers.

GENDER CLASSIFICATION

The speech segment is then classified into two categories based on whether it was likely spoken by a male or female character. This is accomplished with acoustic feature extraction and feature normalization.

ACOUSTIC FEATURE EXTRACTION

We use thirteen dimensional MFCC features for gender classification because they can be reliably extracted from movie audio, unlike pitch or other high-level features where extraction is made unreliable by the diverse and noisy nature of movie audio.

FEATURE NORMALIZATION

Feature normalization is deemed necessary to address the issue of variability of speech across different movies and speakers, and to reduce the effect of noise present in the audio channel. Cepstral Mean Normalization (CMN) is a standard technique popular in Automatic Speech Recognition (ASR) and other speech technology applications. Using this method, the cepstral coefficients are linearly transformed to have the same segmental statistics (zero mean). Classification of the speaker as either male or female is based on gender-specific Gaussian mixture models (GMMs) of the acoustic features. These models are trained on a gender-annotated subset of general speech databases used for developing speech technologies using frame-level features for each gender. The GMM we use in this system has 100 mixture components and is optimized by tuning the parameters in a held-out evaluation set. For a new input segment whose gender label is to be predicted, the likelihoods of the segment belonging to a male or female class are computed based on this pre-trained model. The class with higher likelihood is assigned to the segment as the estimated gender prediction. The total speaking time by gender is then computed by adding together the durations for each utterance classified as Male/Female. This gives us the male and female speaking time in a movie.

ENDNOTES

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