

SPELLCHECK FORBIAS.

SONY PICTURES

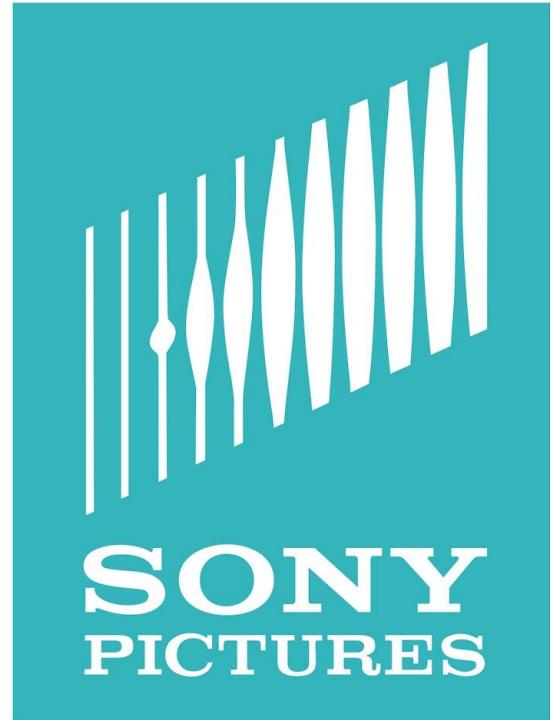
Geena Davis Institute  on Gender in Media
If she can see it, she can be it.™

USC Viterbi
School of Engineering

STUDY OVERVIEW

Spellcheck for Bias is based on inventions and software developed at the USC Viterbi School of Engineering. It measures representations of six identities in *Salvation Road*:

- GENDER
- RACE
- LGBTQ+
- DISABILITY
- AGE
- BODY SIZE



METHODOLOGY

CHARACTER NAME	LINE COUNT
EDDIE WILKINS	154
ARLA GARRET	138
DETECTIVE MONICA HENDRIX	69
BEVERLY	14
MCGINNIS	12
L.T. RAY THOMAS	9
GUARD #1	7

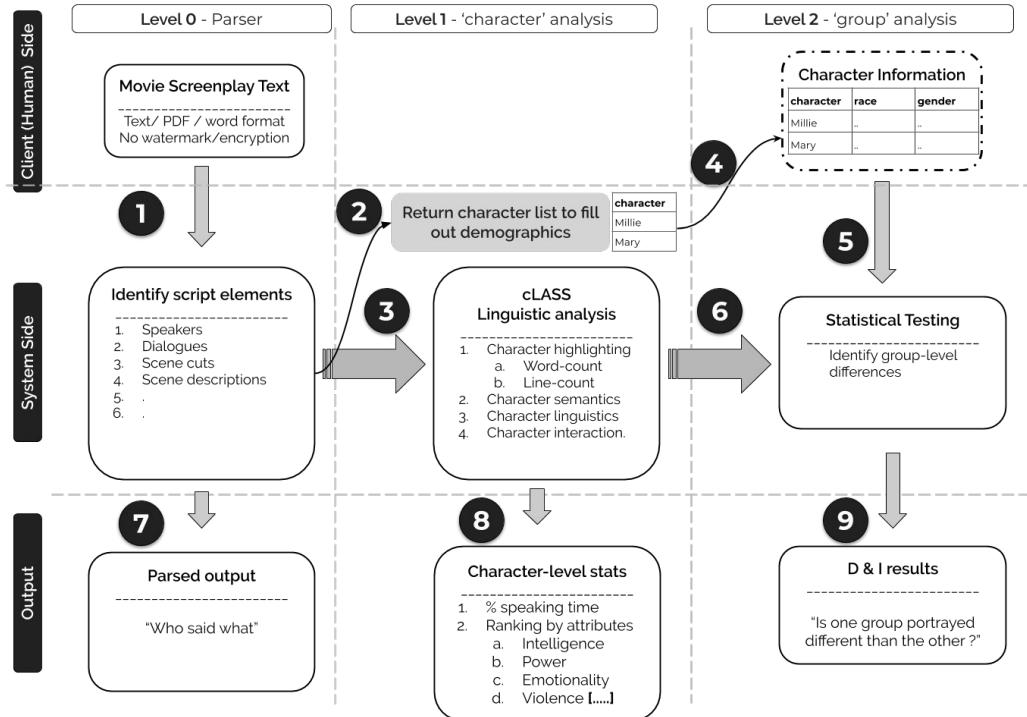
- CHARACTERS MUST SPEAK 5+ LINES FOR ANALYSIS.
- 7 CHARACTERS MET THIS THRESHOLD.

METHODOLOGY

AUTOMATED PROCESSING WORKFLOW

- FROM TEXT DOCUMENT TO
- LANGUAGE ANALYTICS TO
- D&I FINDINGS

SUPPORTED BY HUMAN
CODING



AUTOMATED ANALYSIS OF RISKY BEHAVIORS IN MOVIES



Martinez, V. R., Somandepalli, K., Uhlir, Y. T., & Narayanan, S. (Submitted). Multi-task Estimation of Risky-Behavior Ratings from Movie Scripts. Photo from Peter Ruck / Shutterstock on Getty Images

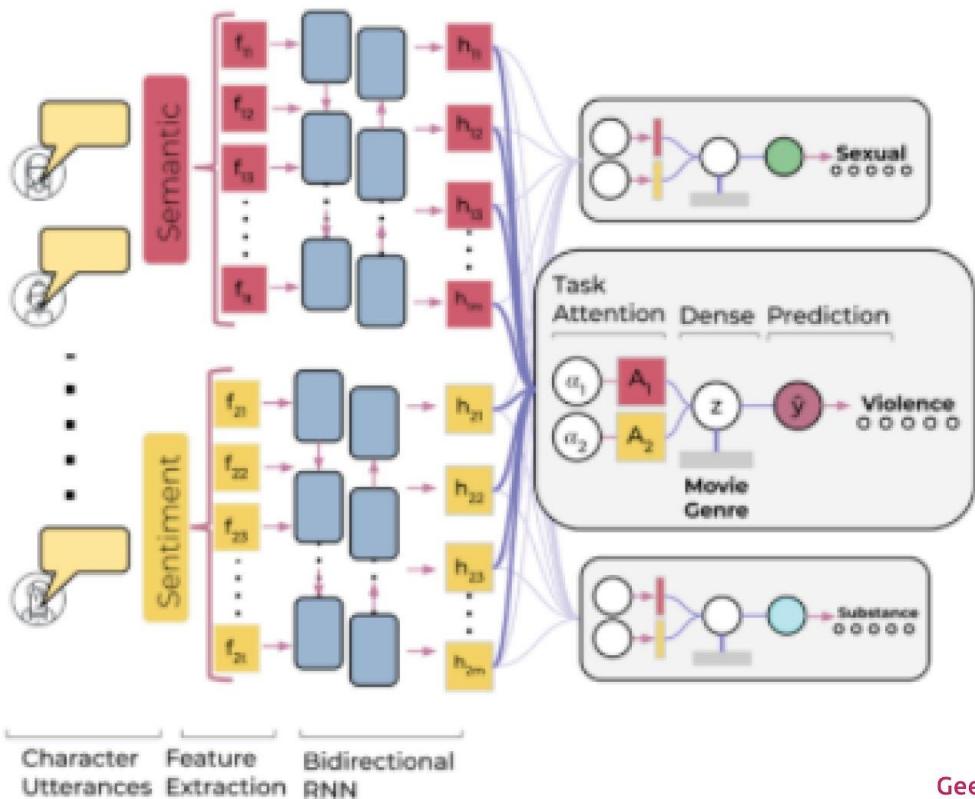
FILMS TEND TO FEATURE CHARACTERS
ENGAGING IN VIOLENCE, SEX, TOBACCO
AND ALCOHOL USE

(Bleakley, 2014)

INCREASE ALCOHOL CONSUMPTION,
EARLIER SEXUAL INITIATION AND ALTERS
SEX ATTITUDES ON TEENS AND YOUNG
ADULTS

(Tucker et al., 2013; Brown et al., 2006; Moyer-Gusé, Mahood & Brookes, 2011)

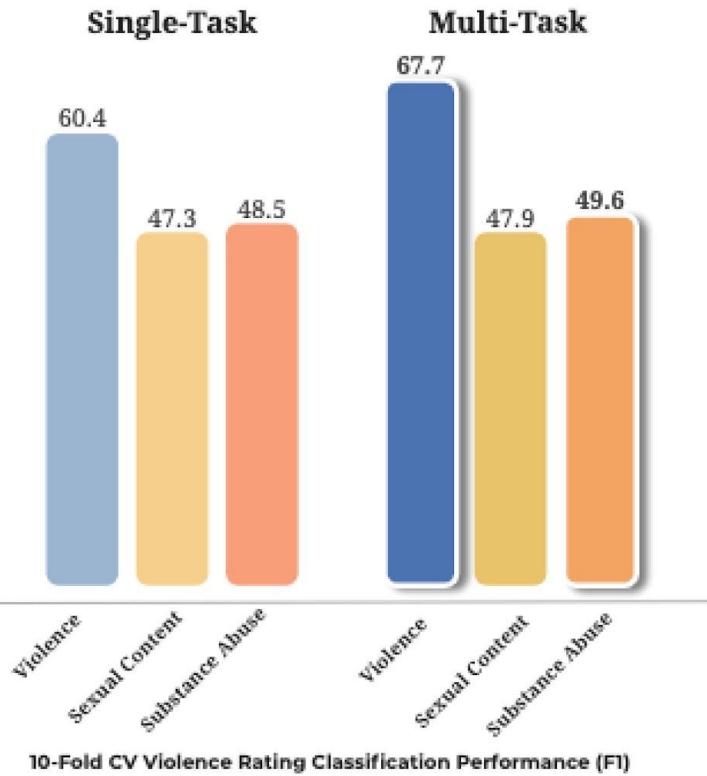
HOW THE AUTOMATION WORKS



MULTI-TASK AI
MODEL TO PREDICT
VIOLENT, SEXUAL AND
SUBSTANCE ABUSIVE
CONTENT FROM
LANGUAGE USED IN
MOVIE SCRIPTS.

Martinez, V. R., et al. (Submitted)

VIOLENCE & SUBSTANCE ABUSE FINDINGS

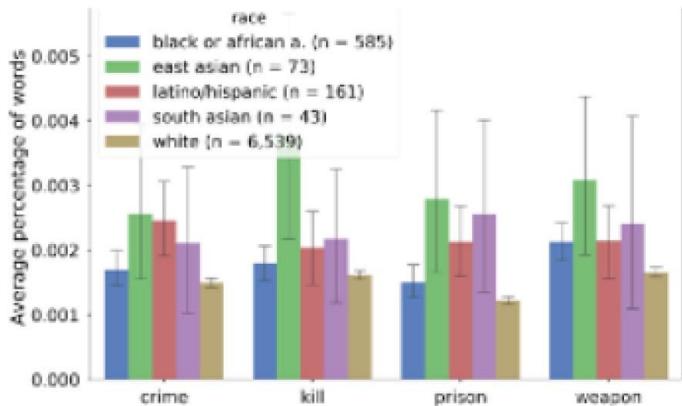
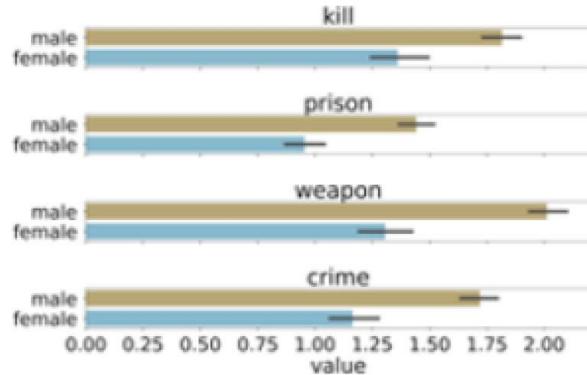


THIS MODEL CAN RECOGNIZE
VIOLENCE AND SUBSTANCE-ABUSE
FROM WHAT CHARACTERS SAY.

PERMUTATION TEST, N = 105, P = 0.005 AND P =
0.006

Martinez, V. R., et al. (Submitted).

ABUSIVE LANGUAGE FINDINGS



- MALE CHARACTERS USE MORE EXPLICIT ABUSIVE LANGUAGE THAN FEMALE CHARACTERS
- SIGNIFICANT DIFFERENCES BETWEEN RACIAL GROUPS
 - WHITE CHARACTERS USE THE LEAST
 - EAST ASIANS USE THE MOST
- INTERACTIONS BETWEEN MALE CHARACTERS ARE MORE ABUSIVE THAN ANY OTHER TYPE OF INTERACTION

CHARACTER INTERACTION FINDINGS

INSIGHTS FROM CHARACTER INTERACTION GRAPH ANALYSIS (~1000 SCRIPTS)

- WHITE CHARACTERS MOST IMPORTANT IN THE PLOT (BETWEENNESS)
- AFRICAN AMERICAN CHARACTERS USE MORE SWEAR WORDS
- LATINX AND MIXED CHARACTERS USE MORE SEXUAL WORDS
- EAST ASIAN CHARACTERS USE FEWER RELIGIOUS WORDS
- NATIVE AMERICAN CHARACTERS IN FAR FEWER CENTRAL ROLES THAN OTHERS

A. Ramakrishna, V. Martínez, N. Malandrakis, K. Singla and S. Narayanan. Linguistic analysis of differences in portrayal of movie characters. Proceedings of the 55th Annual Meeting of the Association for Computational Linguistics (ACL), 2017]

FINDINGS

SALVATION ROAD

SONY PICTURES

GENDER ANALYSIS

BASELINE: WOMEN COMPRIZE 51% OF THE U.S. POPULATION.

- Female characters make up half of the prominent characters with a specified gender.
- Three of the five most prominent characters in the script are women, including a female co-lead (“Arla”).
- One character opportunity for greater gender diversity.
- Female characters speak more words on average than male characters in the script (571 words compared with 272 words).

CHARACTERS BY GENDER

FEMALE



MALE

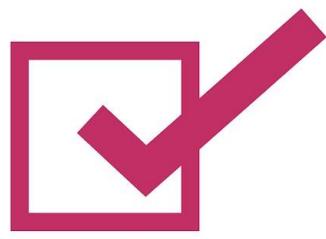


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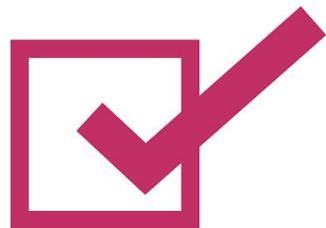


THE SEE JANE TEST

IN ORDER TO PASS THE SEE JANE TEST, A SCRIPT/MANUSCRIPT MUST HAVE:



**At least one prominent character
(leading, co-leading, supporting
character) who is a woman who;**



**Is not depicted with gender
stereotypes or tropes.**



RACE ANALYSIS

BASELINE: PEOPLE OF COLOR COMPRIZE 38% OF THE U.S. POPULATION.

- One-third of characters with race specified are characters of color.
- Both of the co-leading characters in the script (“Arla” and “Eddie”) are identified as white.
- One character opportunity to increase racial diversity.
- White characters speak **more words on average** than characters of color (518 words compared with 243 words).

CHARACTERS BY RACE

PEOPLE OF COLOR



WHITE PEOPLE

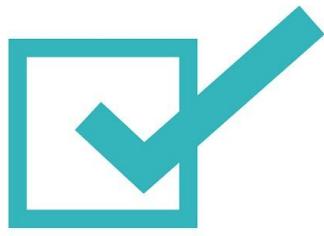


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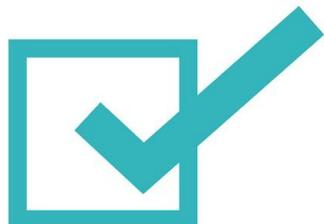


THE SIDNEY POITIER TEST

IN ORDER TO PASS THE SIDNEY POITIER TEST, A SCRIPT/MANUSCRIPT MUST HAVE:



At least one prominent character (leading, co-leading, supporting character) who is a character of color who;



Is not depicted with race/ethnicity stereotypes or tropes.



LGBTQ+ ANALYSIS

BASELINE: LGBTQ+ PEOPLE COMPRIZE 4.5% OF THE U.S. POPULATION.

- None of the characters are specified as LGBTQ+.
- Both co-leading characters (“Arla” and “Eddie”) are specified as heterosexual.
- Three character opportunities for sexual orientation diversity.

CHARACTERS BY LGBTQ+ STATUS

LGBTQ+



HETEROSEXUAL

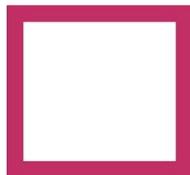


UNSPECIFIED



THE VITO-RUSSO TEST

IN ORDER TO PASS THE VITO-RUSSO TEST, A SCRIPT/MANUSCRIPT MUST:



Contain a character that is identifiably lesbian, gay, bisexual, transgender, and/or queer.



That character must not be solely or predominantly defined by their sexual orientation or gender identity (i.e. they are comprised of the same sort of unique character traits commonly used to differentiate straight/non-transgender characters from one another).



The LGBTQ character must be tied into the plot in such a way that their removal would have a significant effect, meaning they are not there to simply provide colorful commentary, paint urban authenticity, or (perhaps most commonly) set up a punchline. The character must matter.



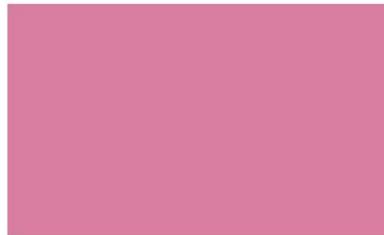
DISABILITY ANALYSIS

BASELINE: PEOPLE WITH DISABILITIES COMPRIZE 19% OF THE U.S. POPULATION.

- **Zero** characters are specified as having a physical, cognitive, or communication disability.
- **Seven** character opportunities to improve disability representations.

CHARACTERS BY DISABILITY STATUS

DISABILITY



NO DISABILITY

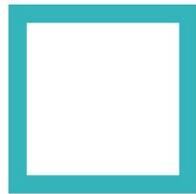


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THE MARLEE MATLIN TEST

IN ORDER TO PASS THE MARLEE MATLIN TEST, A SCRIPT/MANUSCRIPT MUST HAVE:



**At least one prominent character
(leading, co-leading, supporting
character) with a physical, cognitive,
or communication disability who;**



**Is not depicted with disability
stereotypes or tropes.**



AGE (50+) ANALYSIS

BASELINE: PEOPLE AGES 50+ COMPRIZE 34% OF THE U.S. POPULATION.

- The four characters with age specified are under 50.
- The co-leading characters (“Arla” and “Eddie”) are both in their 20s.
- Three character opportunities to improve age representations.

CHARACTERS BY AGE

50+



UNDER 50



UNSPECIFIED



THE BETTY WHITE TEST

IN ORDER TO PASS THE BETTY WHITE TEST, A SCRIPT/MANUSCRIPT MUST HAVE:



**At least one prominent character
(leading, co-leading, supporting
character) who is 50+ who;**



**Is not depicted with age
stereotypes or tropes.**



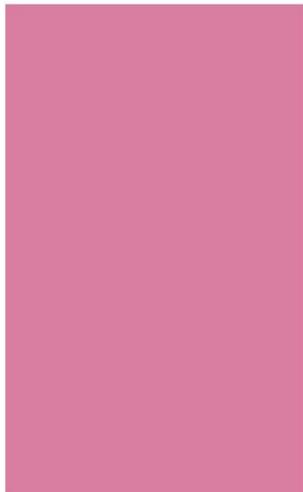
BODY SIZE ANALYSIS

BASELINE: PEOPLE WITH LARGE BODY TYPES ARE 39% OF THE U.S. POPULATION.

- Only two characters (“Beverly” and “Eddie”) have specified body size, and neither has a large body type.
- Five character opportunities to improve representation of characters with large body types.

CHARACTERS BY BODY SIZE

LARGE



NON-LARGE

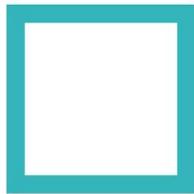


UNSPECIFIED



THE COOPER TEST

IN ORDER TO PASS THE COOPER TEST, A SCRIPT/MANUSCRIPT MUST HAVE:



**At least one prominent character
(leading, co-leading, supporting
character) with a large body type
who;**



**Is not depicted with size stereotypes
or tropes.**



TROPES & STEREOTYPES

WOMEN AS SEX OBJECTS

- “She’s blonde and pretty and intelligent.”
- “Her hair and nails and teeth gleam and her fit, erect frame holds her chin high.”
- “Dressed conservatively and proper, (even a blonde wig) a little like her STEP-MOTHER only sexier.”
- “On THIS SIDE of the glass are the CLERKS (all races and colors, mostly women with amazing hair and nails).”
- “Her shirt is open down to there, her smile is bright, her eyes make the guy want to hang himself.”

AVOID CASTING A BLACK WOMAN AS THE “WELFARE MOM”

- “Shoppers walk past a HOMELESS PERSON, a DRUG ADDICT, a single WELFARE MOM... a tableau of urban subsistence.”

TROPES & STEREOTYPES

CRIMINALIZATION OF THE POOR

- “COP’S POV: Everyone on a bus looks like a fucking criminal...”

CRIMINALIZATION OF LATINX CHARACTERS

- “CHOLOS, GANG-BANGERS, WHITE-TRASH METH-HEADS; the cast-offs of humanity stand against walls”

CRIMINALIZATION OF BLACK AND LATINX CHARACTERS

- “On the other side of the bulletproof glass are FAMILIES lined up waiting; wives, children, some men. Mostly AFRICAN AMERICAN AND LATINO, all looking worried and hopeful, clutching PAPERS and COURT ORDERS and MONEY ORDERS and CASH.”

CRIMINALIZATION OF IMMIGRANTS, STEREOTYPING AS NON-ENGLISH SPEAKERS

- [In a jail] “They’re trying to explain the labyrinthine bureaucracy to people who don’t speak English, sending dejected families back to the drawing boards, sometimes stamping papers and taking money.”

BLACK TROPIES

THE “MAMMY”

This Black female character has a wide grin and a hearty laugh and is loyal and happy in a life of servitude.

THE “WELFARE QUEEN”

This Black female character engages in welfare fraud by drawing more funds than she is entitled to, and living lavishly at the public's expense.

THE “ANGRY BLACK WOMAN”

This Black female character is angry, loud, and aggressive.

THE “JEZEBEL”

This Black female character is seductive, alluring, worldly, beguiling, tempting, and lewd.

THE “STRONG BLACK WOMAN”

This Black female character is stronger than other characters around her; able to endure trials and tribulations that would break weaker characters.

THE “MASCULINE BLACK WOMAN”

This Black female character is a masculine woman.

THE “MINSTREL”

This Black female or male character is an entertainer who is joyful, lazy, and buffoonish.

THE “ATHLETE”

This Black male character is an athlete or in some way connected to sports.

THE “GANGSTER”

This Black male character is shown wearing clothing that indicates they belong to a gang or organized criminal group.

THE “MAGICAL NEGRO”

This (mostly male but sometimes female) supporting Black character who comes to the aid of white characters by the use of special insight or powers, which could be of a supernatural or quasi-mystical.

LATINX TROPES

THE “SPICY SEXPOT”

This Latinx female character is highly sexual in her clothing (revealing) and actions (flirty).

THE “MAID”

This Latinx female character works as a maid, in a private house, hotel, or other establishment.

THE “LATIN LOVER”

This Latinx male character is highly sexual and good at seduction.

THE “GANG BANGER”

This Latinx male character is shown wearing clothing that indicates they belong to a gang or organized criminal group.

THE “GARDENER”

This Latinx male character is a gardener or landscaper, working physical labor.

THE (MALE) “MACHISTA”

This male Latinx character has an exaggerated masculinity. He may have an exaggerated body posture, attitude, and swagger.

THE “NON-ENGLISH SPEAKER”

This female or male Latinx character is shown as speaking only Spanish and not able to speak English, or only speaks “broken” English.

ASIAN TROPES

THE “DRAGON LADY”

This Asian female character is powerful, deceitful, domineering, or mysterious.

THE “MARTIAL ARTIST”

This Asian male character is a martial artist. He can be seen as throwing skilled kicks or punches or wearing martial arts attire.

THE “NERD”

This Asian male or female character is presented as a nerd or geek, with glasses, a collared shirt, a lab coat, a pocket protector, etc.

THE “ASIAN SHOP OWNER”

This Asian male character owns a corner store, dry cleaner, or another shop.

THE “YAKUZA CRIME BOSS/WORKER”

This Asian male character belongs to a gang or organized criminal group.

THE “GEISHA GIRL/ASIAN PROSTITUTE”

This Asian female character is seductive, submissive, and likely a sex worker.

THE “TIGER MOM”

This Asian female character is an overbearing mom who expects perfection.

THE “QUIET WIFE”

This Asian female character is a quiet wife or partner who is submissive in the presence of her husband or partner.

THE “SCHOOL GIRL”

This Asian female character resembles a school girl, usually wearing a short school uniform skirt, a white shirt, and wearing pigtails or a ponytail.

THE “MODEL MINORITY”

This Asian female or male character is presented as excelling at school, work, and every aspect of life.

THE “EXOTIC WOMAN”

This Asian female character is shown as “exotic,” seductive, and mysterious.

THE “NON-ENGLISH SPEAKER”

This female or male Asian character is shown as speaking only an Asian language and not able to speak English, or only speaks “broken” English.

MIDDLE EASTERN TROPES

THE “TERRORIST”

This Middle Eastern male character is depicted as plotting or executing violence of an organized nature, whether as a “lone wolf” or part of a network.

THE “TYCOON”

This Middle Eastern male character is depicted as extraordinarily wealthy, wearing expensive clothing, driving pricey cars, living in luxurious houses, or flying private planes.

THE “EXOTIC WOMAN”

This Middle Eastern female character is shown as “exotic,” seductive, and mysterious.

THE “OPPRESSED WOMAN”

This Middle Eastern female character is depicted as highly oppressed by her culture, her husband, and/or other family members, lacking agency to make her own decisions freely.

THE “PRIMITIVE”

This Middle Eastern character is shown in places without modern technology, living in a dilapidated house, living in a desert, or wearing shabby, outdated clothing.

THE “STORE CLERK”

This Middle Eastern male character is shown behind the counter at a gas station, chain store, or another retail space.

SOUTHEAST ASIAN TROPES

THE “SPIRITUAL GURU”

This Southeast Asian male character can be seen as dispensing spiritual advice, wearing clothing that indicates their “guru” status, or otherwise shown as spiritually enlightened.

THE “SHY NERD”

This Southeast Asian male character is both nerdy and shy, and may work in a STEM profession.

THE “EXOTIC LOVE INTEREST”

This Southeast Asian female character is shown as “exotic,” seductive, and mysterious.

THE “RELIABLE SIDEKICK”

This Southeast Asian male character is a trustworthy sidekick, usually to a white character.

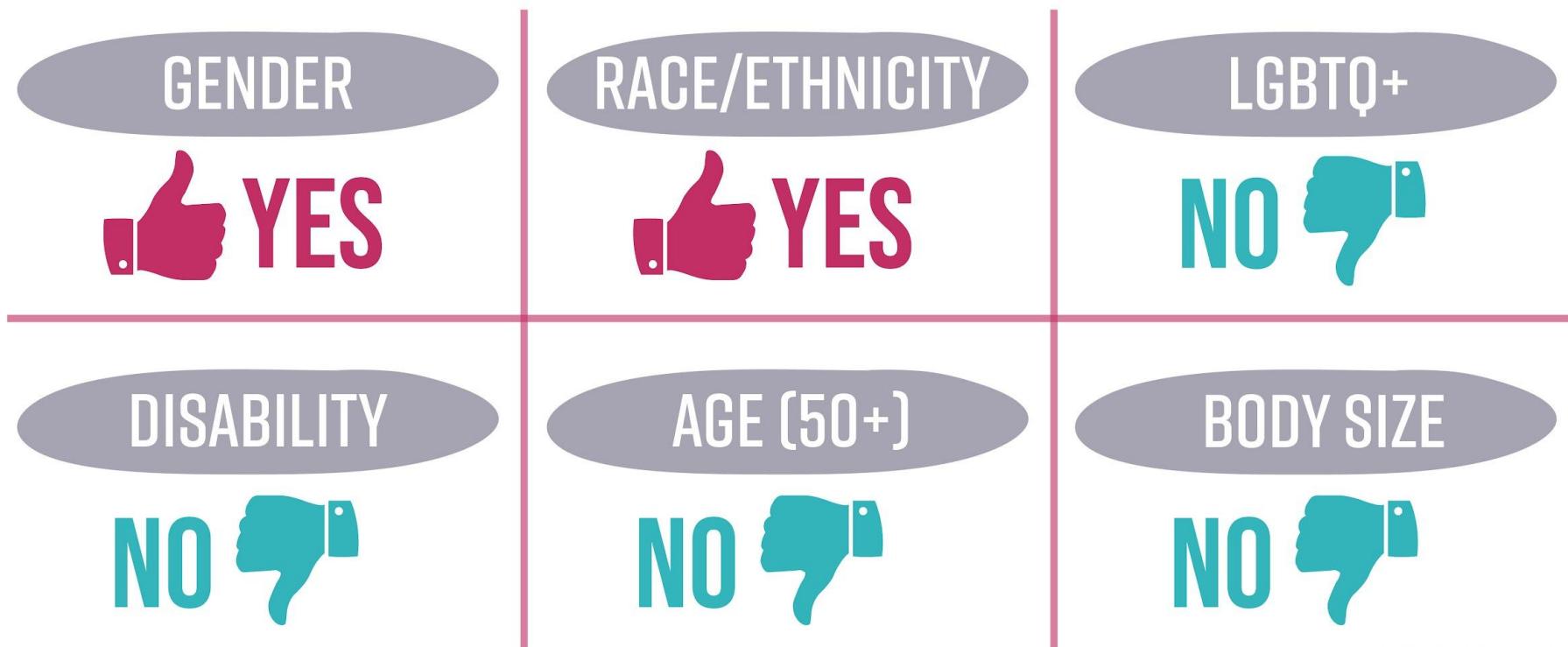
THE “QUIRKY SHOP OWNER”

This Southeast Asian male character is the owner of a corner store, chain, or other business. They are often cranky or have some other quirks.

THE “MEDICAL PROFESSIONAL”

This Southeast Asian female or male character is in a medical profession.

OVERALL REPRESENTATION



INTERSECTIONAL REPRESENTATION

	FEMALE CHARACTER	CHARACTER OF COLOR	LGBTQ+ CHARACTER	CHARACTER WITH A DISABILITY	CHARACTER 50+	CHARACTER WITH LARGE BODY TYPE
FEMALE CHARACTER		YES	NO	NO	NO	NO
CHARACTER OF COLOR	YES		NO	NO	NO	NO
LGBTQ+ CHARACTER	NO	NO		NO	NO	NO
CHARACTER WITH A DISABILITY	NO	NO	NO		NO	NO
CHARACTER 50+	NO	NO	NO	NO		NO
CHARACTER WITH LARGE BODY TYPE	NO	NO	NO	NO	NO	