Gender, Art Classification, & Nationality in MoMA Works



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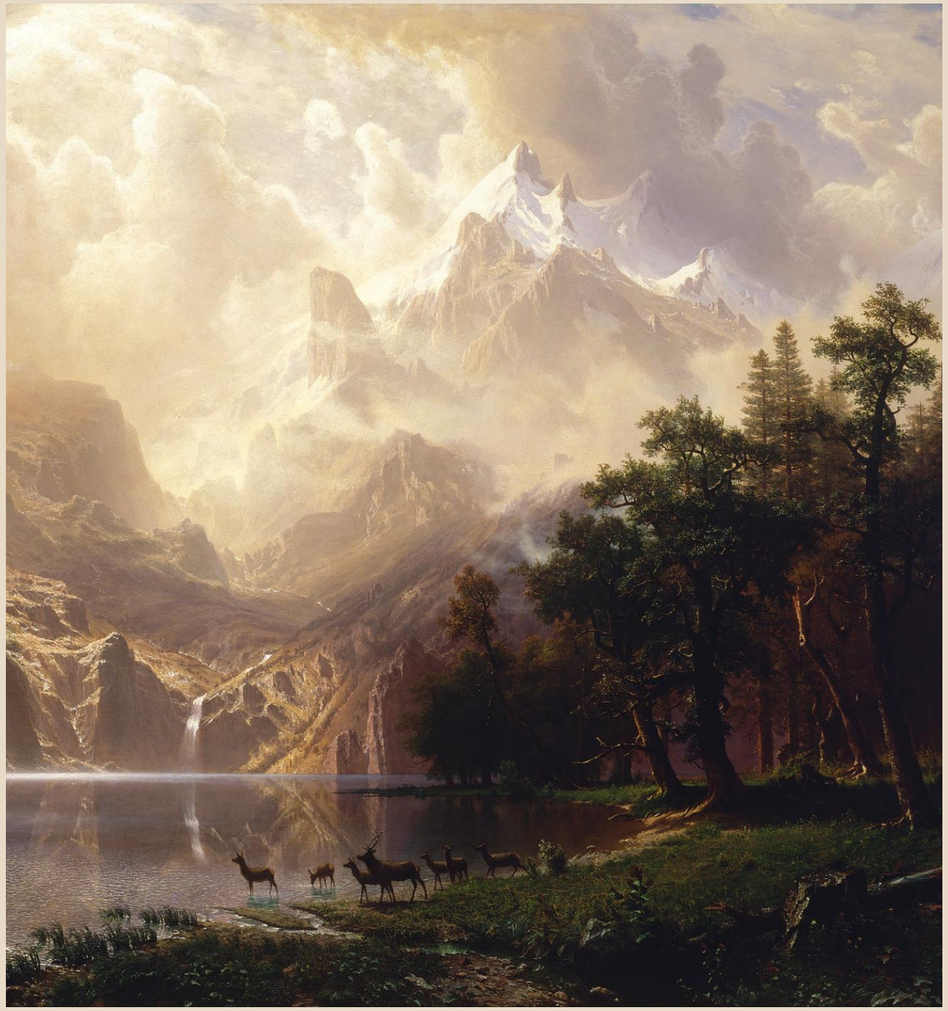
Topic and Motivations



Our team chose this topic to examine gender variability across different art classifications and determine whether this variability has changed over time.

Given the predominantly male representation in the dataset, we use the proportion of female artists as a proxy for gender variability.

We hypothesize that female representation within art classifications has increased over time.



Our Research Question

In what art classification is there the most gender variability, and is this relationship predicted by recency?

Does gender variability, as measured by female representation, differ by nationality within a given art classification?

Introduction of Data

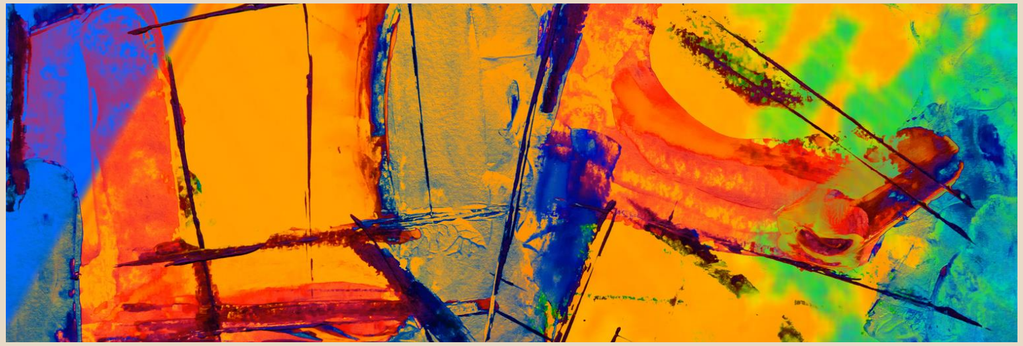
https://github.com/museumofmodernart/collection

- *The data was acquired from the open information section of the Museum of Modern Art's collections section on their webpage.*
- *This data is from an open-source curated collection, and thus we don't find ethical concerns with the data.*

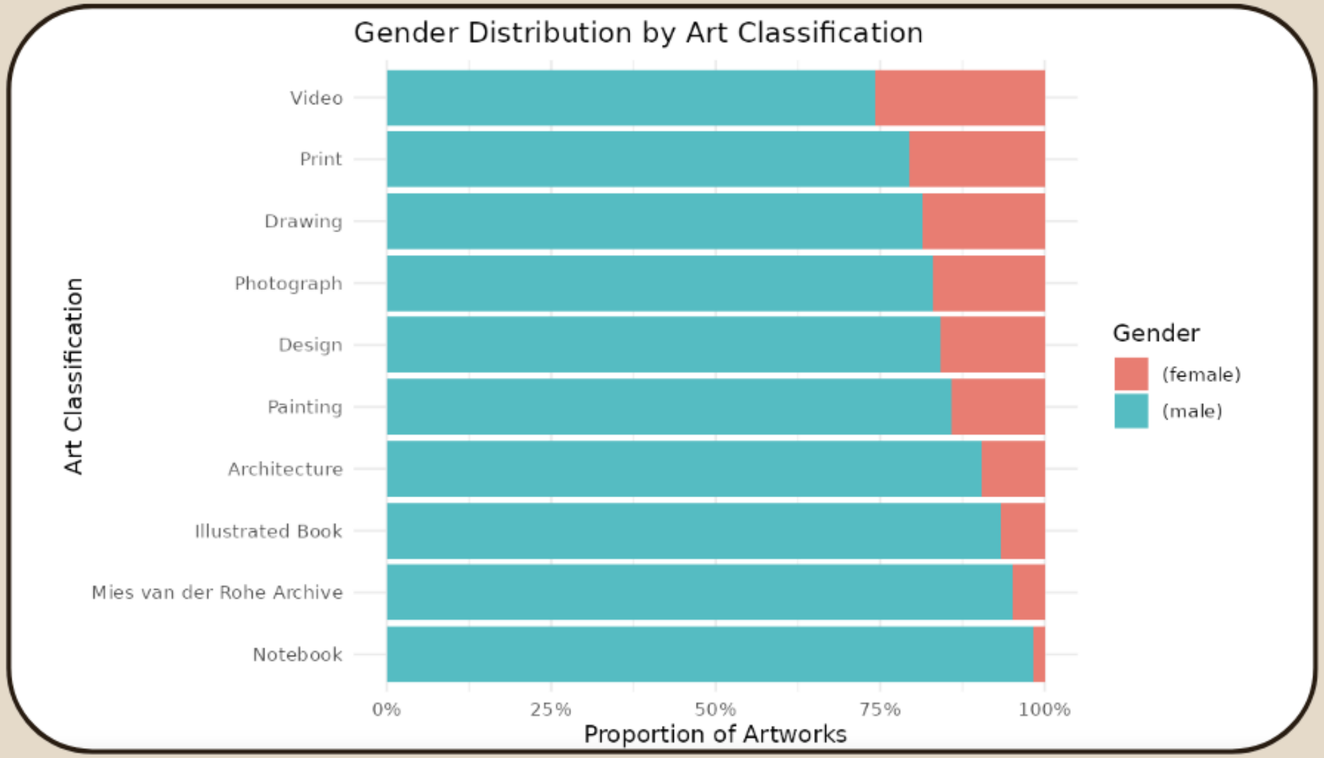




Variables and Observations



- *There are **160,700 total observations** in this dataset, each representing an artwork in the museum.*
- *We included only works that had single gender authorship, either male, or female. --> this way we can more clearly ascribe the artist to the work*
- *Filtered for the top 10 art classifications based on the number of works in them.*



Visualization 1

In what art classification is there the most gender variability?

** Recall female representation proportion is a proxy for variability in this dataset*

Analysis

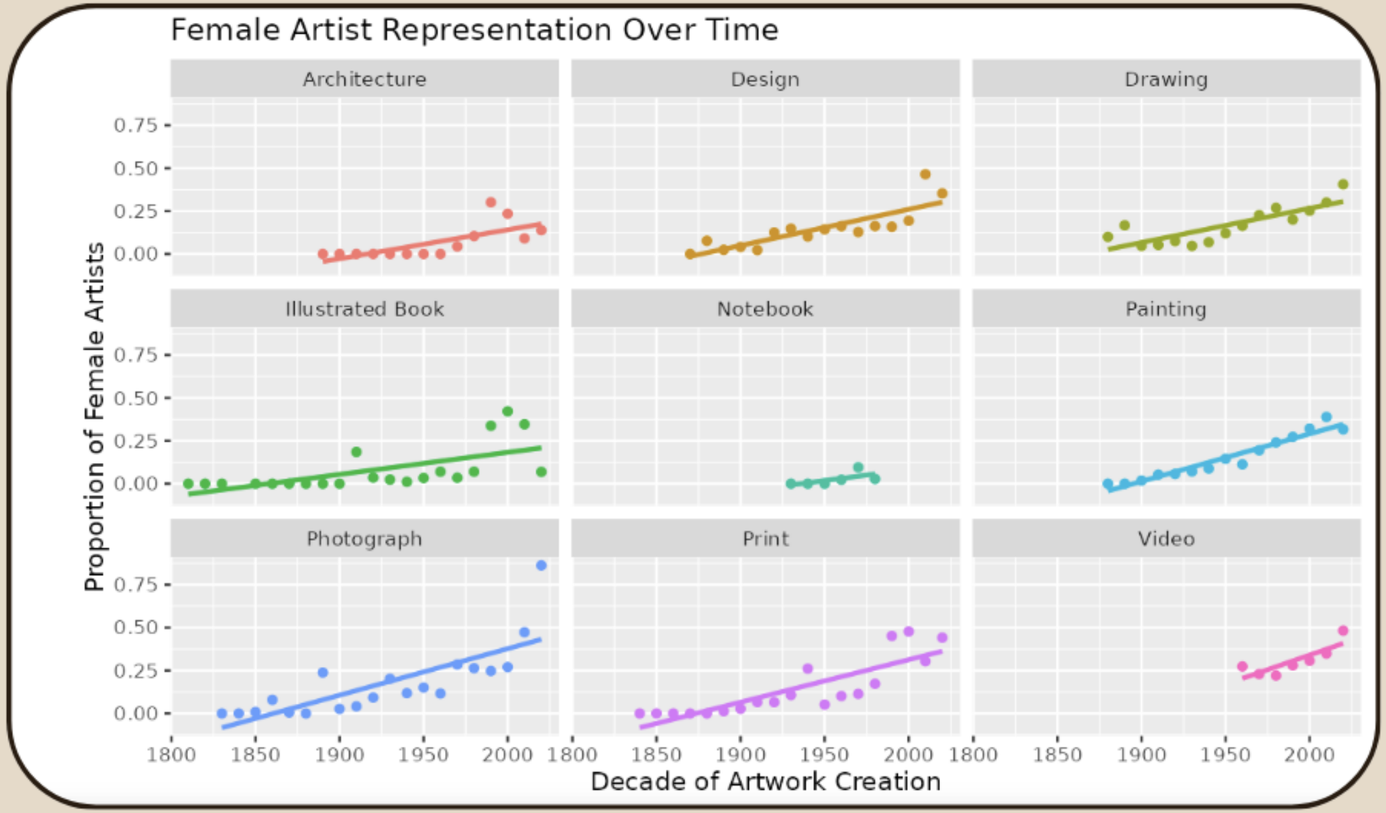
The initial visualization of gender distribution by variation exhibits the following:

- ***The video classification has the most variable gender distribution with ~ 26% of works by women***
- ***Print has about 20% of female representation***
- ***Those are followed by drawing at ~19%***
- ***Followed by photography at ~15%***

Male representation in artworks dominates.







Visualization 2

Does the year an artwork was created predict the gender of its artist, and does this relationship vary across art classifications?

*** Note that Mies van de Rohe was excluded due to being a robust personal collection that was donated, thus it is not a "true" classification*

Each point represents a **decade**

- Print: est slope is 0.127
- Video: est slope is 0.167
- Photo: est slope is 0.172
- Drawing: est slope is 0.112

Analysis

- *Female representation increases over time across all nine art classifications, although the rate of increase varies visually.*
- *Photography, Print, and Video show particularly noticeable increases, while Architecture and Notebook exhibit smaller changes.*
- *The model explains 65.7% of the variation in female representation (adjusted $R^2 = 0.632$).*
- *The overall regression is statistically significant ($p = 1.07 \times 10^{-24}$), suggesting that decade and classification together are associated with female representation.*

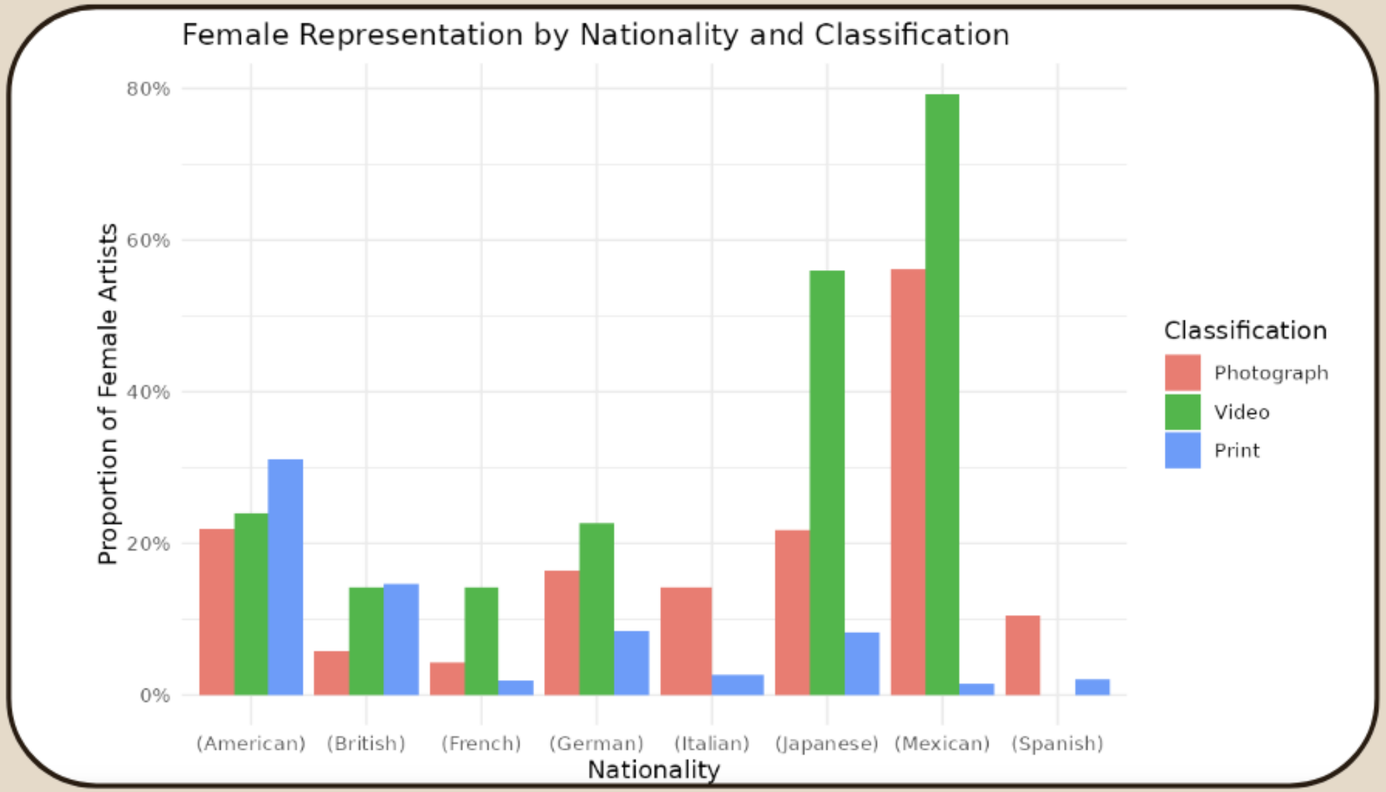
	r.squared	adj.r.squared	p.value
	<dbl>	<dbl>	<dbl>
1	0.657	0.632	1.07e-24



Nationality and Female Artwork

**Does gender variability, as measured by female representation, differ by nationality within a given art classification?*





Visualization 3

Is nationality associated with gender variability, after accounting for art classification?

*** Note we used the top 8 most representative nationalites.*

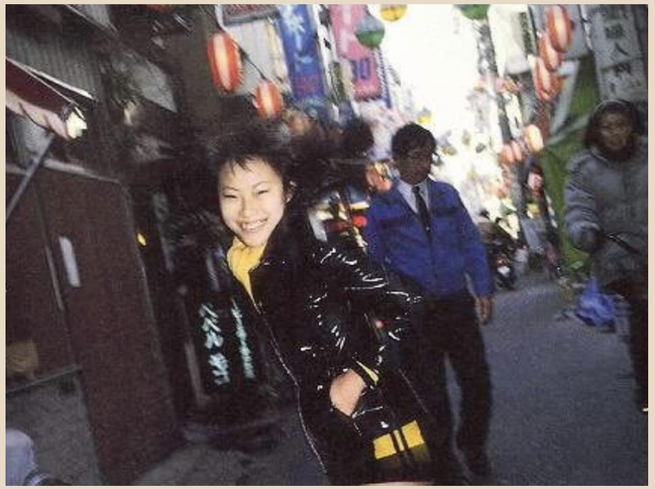
r.squared dbl	adj.r.squared dbl	p.value dbl
0.7874	0.6412	0.0013

Analysis

The visualization shows:

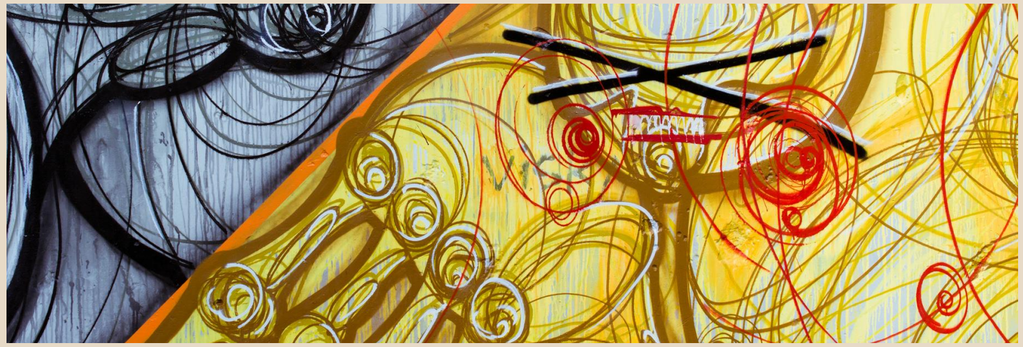
- *High female representation in video media from Japanese and Mexican artists*
- *Low female representation in print media from the majority of nationalities except for American artists*
- *Moderate female representation in photography media across nationalities, with a lot of works from Mexican artists.*





Discussion

1. *Increasing representation, but persistent gender disparities: female representation has increased over time across all nine classifications analyzed, yet male artists remain the majority in every classification.*
2. *Progress differs by art classification, and representation varies by nationality: Video exhibits the highest overall female representation (~28%), while female representation also varies across nationalities within classifications*
3. *Museum collections may reflect historical barriers to recognition: differences in representation may reflect unequal opportunities, institutional collecting practices, and historical barriers faced by female artists.*
4. *Limitations and future research: Our findings are specific to MoMA's collection and cannot necessarily be generalized to all museums. Further research could examine acquisition dates, collection practices, and the number of unique artists representation*





Thank You