MINIPROJECT 1
Rationale & Revisions

Charles Andrews

Ethnic Disadvantage
in CBS' Big Brother

Charles Andrews
ARTG 5530

Have You Heard of Big Brother?

What is Big Brother?

Big Brother is a CBS reality show that follows a house of 12-17 players that must vote out each other to be the last one standing.

Each week, the show features competitions that allow other people to gain power to control who goes home. Players must vote out one of the two nominees at the end of the week and strategize to ensure their longevity in the game if they hope to win the $500,000 prize.

THE PROBLEM

A big issue with the show since its beginning has been the lack of diversity in their casting. Due to the larger proportion of white players, minorities are routinely excluded from the major alliances each season and voted out early in the game.

MINIPROJECT 1
Rationale

Technical Execution **PAGE COMPOSITION**

In laying out the page, I wanted to ensure that the visualizations and narrative text had enough real estate to effectively tell the story. Thus, the sidebar is restricted to a small portion of the left side of the screen to avoid it from distracting from the narrative in the #bodycontent container. With this, the narrative takes center stage due its large proportional screen width.

Text is left aligned and spans 69% of the #bodycontent container to place it lower in the visual hierarchy than the images and video, which span 100% of #bodycontent. The left alignment of text also creates a clean line that mirrors the sidebar and improves readability according to common type setting practices.

The sidebar minimizes the scrolling the user must perform to navigate between sections. It disappears at small screen sizes to allow for wider and more readable images and paragraph setting.

The top image and title introduce the branding and feel of the Big Brother in a visually appealing and clear manner, spanning the full width of the page. It also breaks the 2-column division seen on the rest of the page to add variety to the composition.

Technical Execution CODE IMPLEMENTATION

My overall layout is implemented through CSS grid. The three main grid container divs are: #titlesect, #sidebar, and #bodycontent. The title sect spans each horizontal grid cell, with floating title text implemented using absolute positioning. The sidebar stays in place when scrolled to by applying sticky positioning to the sticky-container subdiv in sidebar. The bodycontent container holds the sections and subsections that tell the story of the data.

I avoided having to apply the same class styling to divide each section and subsection div. To accomplish this, I took advantage of the HTML structure by using child selectors (parent > child) to target the divs and subdivs within bodycontent to apply vertical spacing.

Typographic hierarchy was established by defining individual class styles for text size and leading. A grouping selector sets the overall font family to Source Sans Pro. A grouping/descendent selector reduces the width of text to 69% of bodycontent.

Flex is used to align the three competition types on the same line in the introduction.

Media queries adjust the stylings of each of the three main grid containers as screen width is reduced. The two break points I set are at 1200px (tablet) and 850px (mobile). Adjustments include changes in CSS grid structure, section spacing, and sidebar size.

Narrative OVERVIEW & STRATEGIES

The overall narrative is structured around depicting the disparity between minority players and success in the game of Big Brother. I wrote the narrative structure to first introduce the show and the problem, then specify how I prepared my dataset, finally visualize the issues in the the final section.

In order to organize this narrative, I utilized a strict type hierarchy to divide sections and subsections. Callouts are in a **light blue** to stand out from the rest of the writing and bring attention to important lines of text and further break up large text blocks.

Images and video span the entire #bodycontent container width for detailed viewing of the in-picture text and markings and to place emphasis on media content throughout the narrative. Text takes up a 69% width of the #bodycontent container for more consistent rag and to position text as supportive of the images, especially in terms of the visualizations.

The sidebar, which permits quick navigation to each section of the narrative, disappears at small screen widths to allow the visualizations and text to take up the screen real estate. This makes the entire narrative more readable because text and images are enlarged.

Narrative INTRODUCTION

To provide context on the basic concept of the show is, the introduction introduces readers to the structure of each week in Big Brother and how players are eliminated.

Then, it highlights the main problem of the research: the "minority disadvantage" within the game and casting, which makes it difficult for diverse players to be successful. A [Youtube](#) video provides a first-hand account from real players about the stigmatization they experienced while in the house. Placing this after providing context on the show allows readers without background on the topic to better comprehend how the problem exists within the show.

Finally, the Github user @vdixonw's [dataset](#), containing the information for the investigation, is introduced as the tool I will be employing to analyze the casting demographics, performance in competitions, and season placement.

Narrative ANALYSIS

After presenting the dataset and its contents, the analysis portion of the narrative lays out the two questions that guided my research.

Based on these questions, I listed the analysis methods I used to reformat the dataset for my exploration towards answers. Each of my analysis methods are explained in terms of their purpose. I highlighted the specific variable column names that are mentioned in **blue** to make them clearer throughout the section.

Narrative VISUALIZATION

The visualization section begins by clarifying once again that the visualizations were created based on the "...questions outlined in the analysis phase."

The casting disparities bar chart is presented first to investigate the root of the problem primarily. The first paragraph of this section outlines the basic findings of the graph, while the second references specific trends in the casting numbers of various ethnicities.

The box plots show the disparity between white players and minorities in terms of competition wins and overall placement in the game. These visualizations are divided into two sections that address the most important areas of success in the game. Both sections comprise main takeaways of the visualization, specific points of interest in the data, and synthesis to the larger narrative.

Asides are written in small italics to explain the meaning behind the box plots and additional disclaimers about how the data of the visualization was affected by variation between seasons.

Narrative CLOSING

The closing briefly outlines the three minority players that have won the game thus far. This provides a high-level outlook into the few number of diverse players that have been able to overcome the odds that were stacked against them.

Then, it closes by mentioning how the minority disadvantage is being limited through newly implemented inclusive casting procedures in the most recent season of Big Brother. This allows readers to understand that the findings suggested in the narrative are finally being resolved with the continued evolution of the show.

Visualization Design STACKED BAR CHART
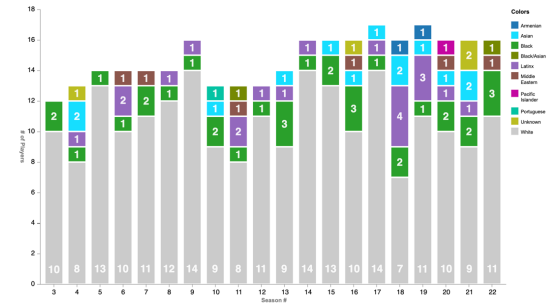
The stacked bar graph visualizes the casting demographic disparity that has been an issue since the inception of the show. The bar chart format provides a high-level understanding of the evolution of casting demographics over time.

Each stacked bar contains clearly annotated sections that encode the number of players of a specific ethnicity through the channels of position and length. These annotations allow the viewer to quickly take away the number of players of a specific ethnicity that were cast for a season without referring to the y-axis.

White player bar sections are gray to visually separate them from the more colorful minority colors. This contrast allows the viewer to understand the unequal distribution in casting without having to look further into the exact distribution. White player annotations are aligned horizontally for easier comparison.

Laying out the seasons in consecutive order was important to visualizing the evolution of the show's casting over time.

Colors for minorities are in a cool color pallet to align with the blue color pallet of the rest of the page, which is in turn inspired by Big Brother's branding.

Visualization Design BOX PLOTS
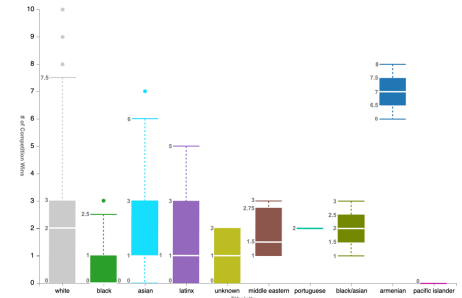
The box plots visualize the distribution of competition wins and overall season placement for players of each ethnicity through length and position channels.

The box plot format allows viewers to see how well the four quarters of each ethnicity grouping are performing, separating high performing players from low performing players. This provides the opportunity to compare the distributions and specific quartiles between ethnicities.

Colors are consistent with the colors used to represent each minority in the stacked bar chart but are less important here because each box plot is labeled on the x-axis with a corresponding minority.

Annotations label the boundaries between quarters in each box plot to reduce the need to refer to the y-axis and aid in comparison between ethnicities. Dotted lines and boundaries between quarters have enlarged widths to aid in perception of box plot divisions.

Outlying dots, filled with consistent ethnicity coloring, represent players that outperformed where majority of other players of their ethnicity were distributed.

MINIPROJECT 1
Revisions

Violin Plots VISUALIZATION DESIGN
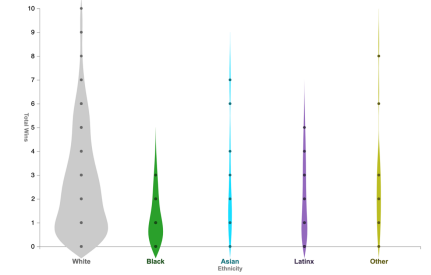
Originally, box plots were used to visualize the distribution of total wins and final placement. These box plots illustrated the four percentile quarters for each ethnicity. Each ethnicity was represented in its own distribution. The placement in season axis used the final_placement variable column in my dataset, which did not account for the variation in numbers of players per season.

While the box plots worked, they were noted as confusing in my peer critiques, so I swapped them for violin plots. The violin plot is helpful in visually showing multiple areas of the distribution that are larger than others, without the thinking that is necessary for comparing the sizes of the four quarters in the box plots.

I also decided to combine Unknown, Middle Eastern, Portuguese, Black/Asian, Armenian, Pacific Islander ethnicities into a single "other" category. This made the number of non-white players represented in the distributions more equal with totals of 39 black, 21 latinx, 19 Asian, 23 other players. Certain ethnicities, like Pacific Islander, had as few as one player represented previously. The unequal player numbers between ethnicities is also represented through the thickness of the violin plots, which is more honest to realities of the data.

To account for variation in the cast sizes in the final placement visualization, I utilized the placement_rank_percent variable column in my dataset rather than the final_placement column. Percentile placements accounted for the 12-17 players range in cast sizes by using percentages.

Formatting Revisions VISUALIZATION DESIGN

I noticed issues with the formatting of labels and the color pallet. The changes I made were reflected in all visualizations.

The brown-green color used for Black/Asian blended in with the green used for Black participants. To change this, I opted for a lighter brown-green with a higher contrast. This will help viewers better perceive the difference between the two ethnicity groups.

An issue noted in the peer critique was the distracting nature of the white text bar annotations. To resolve this, I increased the transparency of the annotations, so they had less of an aggressive contrast against the colored bars. Some annotations were set to different opacities to account for the higher brightness of their bar background. Overall, this change makes the bars feel more uniform and allows the annotations to exist as a less overbearing tool.

The last change made, was increasing the font size of the axis and ethnicity labels to be more readable to the user. I proportionally sized the fonts to account for the scaling issues caused by the larger width in the bar chart and smaller width in the violin plots.

Narrative Formatting for Brevity

In the visualization section, it was easy to miss certain important lines of the narrative because of the large amount of text in the paragraphs of explanation included before each visualization. In peer critiques, I noticed that my peers were skipping important takeaways from the data in the visualization because of the overwhelming nature of the amount of words. To resolve this, I decided to highlight the most important takeaways from each visualization in the blue <h5> styling. This allows for readers to better skim the page because they have a certain sentence to focus on when attempting to understand the visualization. It also adds some typographic variety to the sections, which makes the explanations more approachable at first glance because it reduces the amount of uniform gray text. The use of <h5> styling in the visualization sections also carried over my use of <h5> from the analysis and introduction sections, which adds consistency to the overall narrative formatting.

Lastly, in the conclusion, the paragraph text was a bit too blocky because it was formatted as a single paragraph. To resolve this issue, I divided the conclusion into two paragraphs. The first paragraph is about the past diverse winners of Big Brother, while the second is about the milestones in diverse representation in the most recent season. Similarly, to the highlighted takeaways, this division allows readers to better skim the conclusion. It also better divides the content by its main topics.

Analysis/Visualization Updates NARRATIVE

Originally, the analysis section and visualization section were set up for the box plots I created, one which formally utilized the final_placement variable column in the dataset. The italics explanations below the box plots did not define the meaning of the violin plot dots, which signify data points that a particular player(s) have achieved. I also felt that the connection of the "Total Competition Wins" box plots to overall casting demographic problems was not clear enough about how competitions benefit players that are in alliances, and in turn that alliances tend to exclude diverse players.

After installing the violin plots, I updated the information in the analysis and visualization sections of the narrative to adhere to the use of violin plots. In the analysis section, I replaced the mention of the final_placement varibable with placement_rank_percent to reflect the second violin plot's use of percentiles. I also mentioned how I reformatted the dataset to reflect the 'Other' ethnicity category I created to combine ethnicities with fewer players in the violin plots.

Furthermore, I updated the visualization data takeaways for the violin plots, focusing on highlighting the boundaries of the distributions and important comparisons between white and non-white plots. To answer the questions about the box plot dots I received in peer critique, I added information in the italics explanations below the violin plots about what the violin plot dots signify in order to clear up that question. For the "Total Competition Wins" violin plot, I added a direct mention of the effect that white majority casts have on diverse players' ability to win competitions. This better connects competition wins to the overarching idea of minority disadvantage in Big Brother.

Scrolling Arrow TECHNICAL EXECUTION

Originally, the user was only given the indicator of the start of text below the cover image to signify that they needed to scroll down for the article. For some users, it might have been unclear that there was more to read on the page.

To resolve this issue, I implemented an animated scroll down arrow to communicate to users that they need to navigate downwards. The animation utilizes CSS keyframes to loop the arrow bouncing up and down. The image's % width, which is inherited from the titlesect div, increases at the tablet breakpoint through media queries as the page width becomes smaller to enlarge the icon for perceptibility. To do this, I also needed to make the titlesect div position property relative so that the arrow image would be positioned relative to its parent titlesect div at the bottom. To provide a more literal way of avoiding the need to scroll to the beginning of the article, I made the arrow a link through encapsulating it in an <a> element. I also added a CSS animation so it becomes opaquer on hover.

The revision uses common iconography to tell users that they need to scroll down to view the rest of the page. Now, there is clearer indicator to scroll, other than just revealing text below the cover image. The animation catches the eye more than the latter using movement and color contrast against the image.

Mobile Nav Bar TECHNICAL EXECUTION

Originally, the sidebar disappeared at the width breakpoint of 850px (mobile) to allow the #bodycontent div to take up the full width of the screen so the images and text were readable. Sidebars are not optimal for mobile because they take up valuable width screen space.

To bring a sidebar like navigational component into the mobile layout of the site, I used media queries to construct a navigation bar. To implement this, I created a new main div #mobile-nav with the same sticky positioning property used for the sidebar. This div, which is hidden at screen widths greater than 850px, holds an internal flex div to place four child buttons on the same line. Each conveniently links to a different narrative section.

This revision allows for the same navigation shortcuts that the sidebar presented but for mobile screen sizes. It is especially valuable to have this mobile nav bar because content takes up more space in the mobile screen size due to the smaller screen width. The nav buttons are animated on hover in muted blues to not distract from the narrative. It does not take up an excessive amount of vertical real estate due to its compactness.

Empty Class/ID Attributes TECHNICAL EXECUTION

Throughout the original HTML code, around 15 <div> and <h> elements had empty class and id attributes. These empty attributes did not reference an id or class in the CSS and thus were extraneous code that needed to be removed for succinctness.

To resolve this issue, I removed the empty class and id attributes from the code. When coding, it is best practice to remove any code that is not doing anything. Since there were no class and id attributes indicated, these attributes were not necessary and thus were convoluting the code.

```
<br>
<h5>CONTENTS</h5>
<a href="#intro-data" class=""><h4>Introduction</h4></a>
<a href="#analyzing-data" class=""><h4>Analysis</h4></a>
<a href="#visualizing-data" class=""><h4>Visualization</h4></a>
<a href="#conclusion" class=""><h4>Conclusion</h4></a>
div>
```