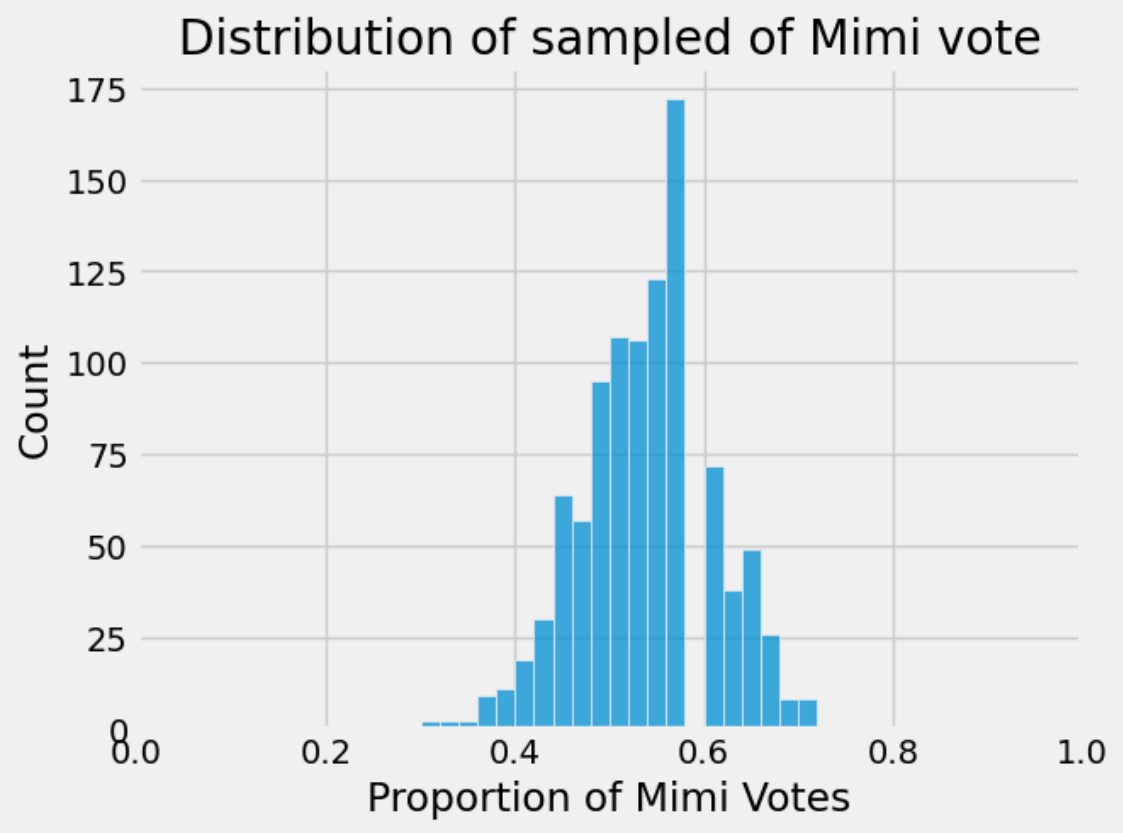

0.0.1 Question 2b

Create a plot using any `seaborn` and/or `matplotlib.pyplot` functions of your choice function of your choice to visualize `samples`, which is the simulated distribution of a sample Mimi vote. Include descriptive title and labels. An example is included below. The total area under the plot must be normalized to 1. Your plot may not match exactly to ours due to randomness of the data generating process.

```
In [19]: sns.histplot(samples)
         plt.xlim(0.0, 1.0)
         plt.title('Distribution of sampled of Mimi vote')
         plt.xlabel('Proportion of Mimi Votes')
         plt.show()
```

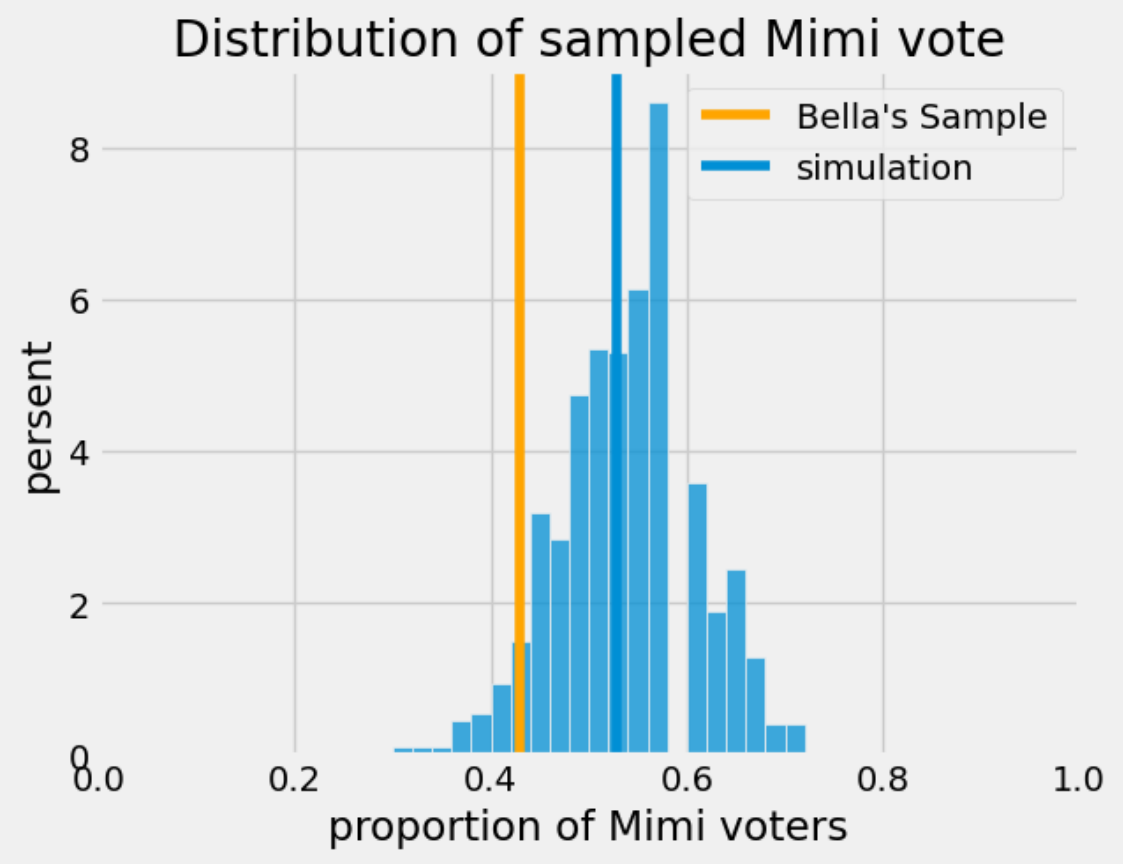


0.0.2 Question 2c

According to Bella's own 50-person sample, 43% of her discussion section reported that they would vote for Mimi in the end-of-semester contest.

In the cell below, create a plot using any `seaborn` and/or `matplotlib.pyplot` functions of your choice to visualize Bella's sample statistic superimposed on the simulated sample distribution you plotted in the previous part. In other words, include a vertical line that passes through 43%, a vertical line that passes through the mean fo the simulated sample distribution, and the simulated sample distribution itself. You should choose contrasting colors and include descriptive title, labels and a legend if needed. An example is included below.

```
In [20]: sns.histplot(samples, stat="density")
         plt.xlim(0.0, 1.0)
         plt.axvline(x=0.43, color="orange", label="Bella's Sample")
         plt.axvline(x=np.mean(samples), label="simulation")
         plt.title("Distribution of sampled Mimi vote")
         plt.xlabel("proportion of Mimi voters")
         plt.ylabel("persent")
         plt.legend()
         plt.show()
```


Distribution of sampled Mimi vote
Bella's Sample
simulation
persent
0
2
4
6
8
0.0
0.2
0.4
0.6
0.8
1.0
proportion of Mimi voters

0.0.3 Question 2d

Based on your analysis above, could Bella's result have arisen due to chance? If not, what could be a potential source of bias?

It is not due to chance. Potential source of bias could be non-response bias and selection bias. Bella's section may not represent the whole class. Students in her section may have preference of a knid of dogs.