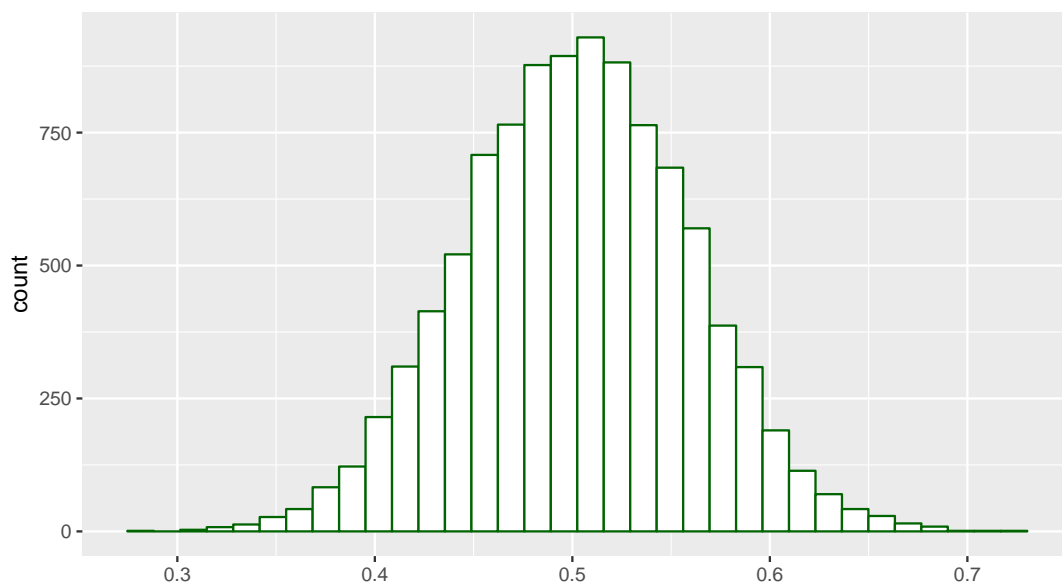


**Millennials and Marriage** In the national debate on same-sex marriage, it is commonly stated that half of all americans favor same-sex marriage. In 2014, Pew research conducted a poll of millennials (americans born after 1980) and found that 66% answered yes when asked: “Do you favor same-sex marriage?” The poll was a random sample of 75 millennials. Does this poll provide convincing evidence that the opinion of millennials is different from those of americans at large?

1. Explain how you could use cards, a coin, or a die to simulate the above statement.
2. Write out the *null hypothesis* and the *alternative hypothesis* that are being evaluated, using proper notation.
3. What was the value of the observed *test statistic*?
4. In the null distribution below (with 10k simulations), label the axes, indicate with a vertical line the location of the observed test statistic, and shade the area under the curve corresponding to the (two-tailed) p-value.



- Using  $\alpha = .05$ , what is your decision regarding the viability of the null hypothesis?
- Write *one* sentence to President Kroger summarizing what you've learned about the millennials and opinions on same-sex marriage.