In [1]:
```
# DSC530-T302
# Stephen Smitshoek
# Week04
# Exercise 3-1
```

In [3]:
```
import numpy as np
import nsfg
import thinkstats2
import thinkplot
```

In [4]:
```
def BiasPmf(pmf, label):
    bias_pmf = pmf.Copy(label=label)

    for x, p in pmf.Items():
        bias_pmf.Mult(x, x)

    bias_pmf.Normalize()

    return bias_pmf
```

In [5]:
```
def main():
    resp = nsfg.ReadFemResp()

    pmf = thinkstats2.Pmf(resp.numkdhh)
    bias_pmf = BiasPmf(pmf, 'observed')

    thinkplot.PrePlot(2)
    thinkplot.Pmfs([pmf, bias_pmf])

    print('Ubiased Mean: {}'.format(round(pmf.Mean(), 2)))
    print('Biased Mean: {}'.format(round(bias_pmf.Mean(), 2)))
```

In [9]:
```
if __name__ == '__main__':
    main()
```

```
Ubiased Mean: 1.02
Biased Mean: 2.4
```