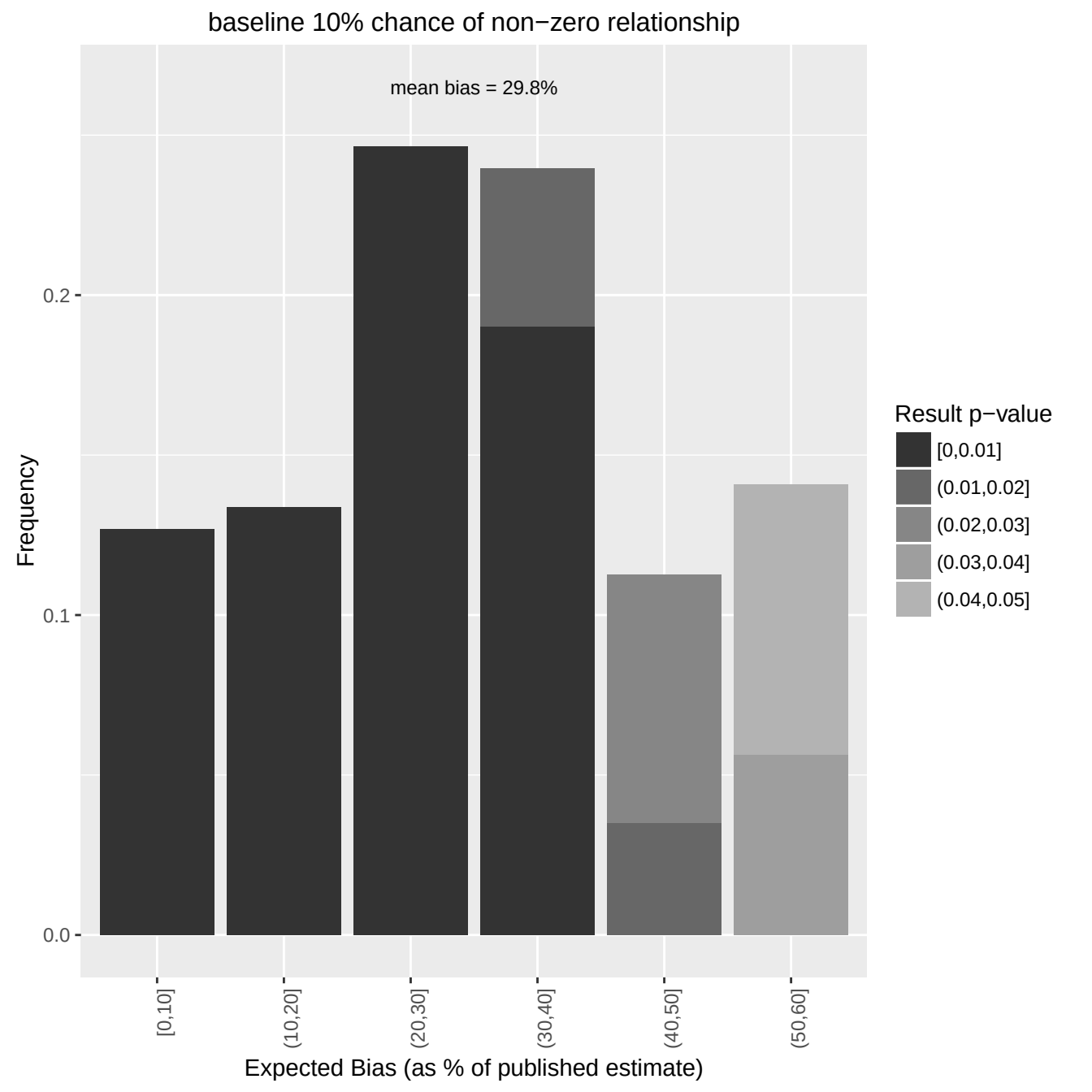
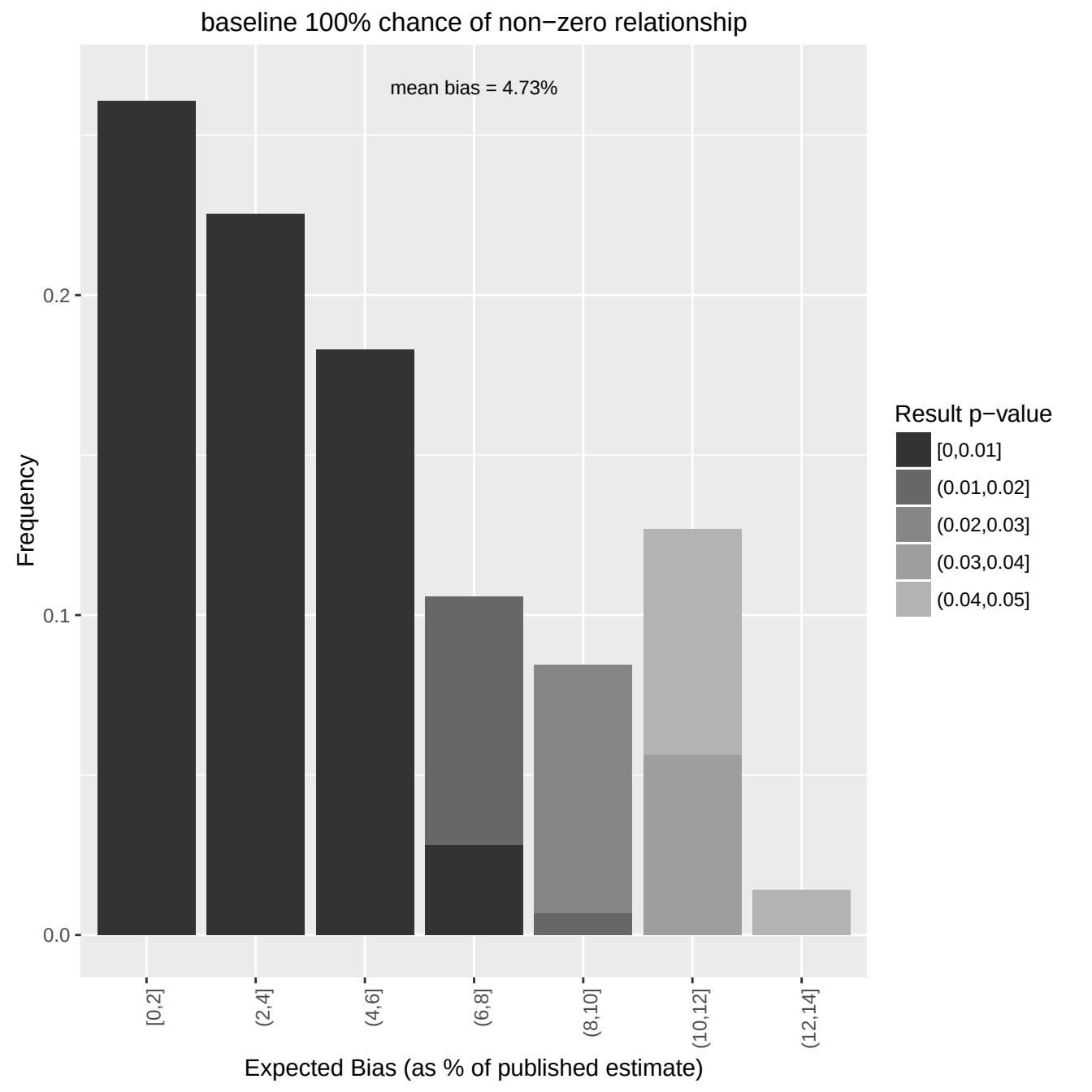
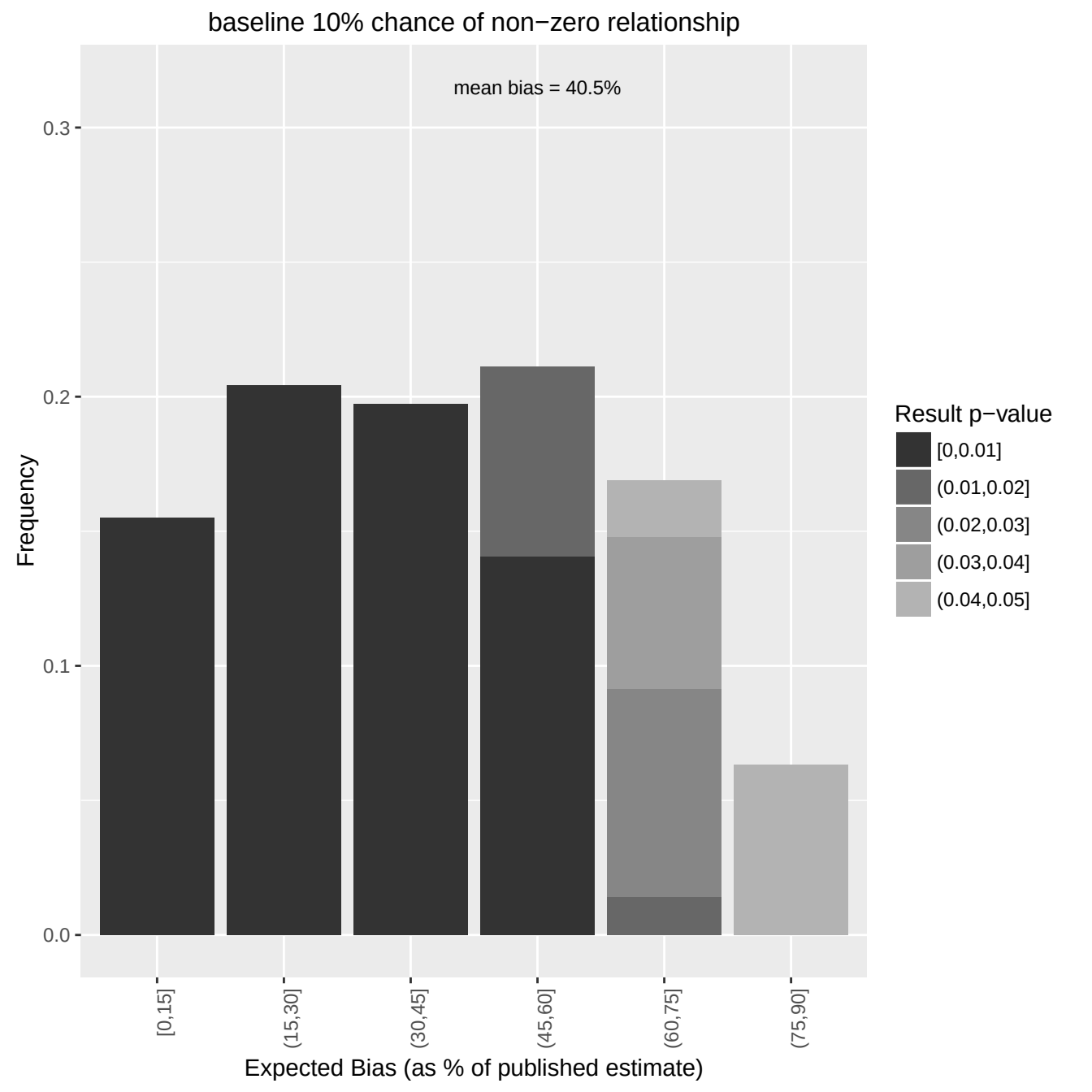
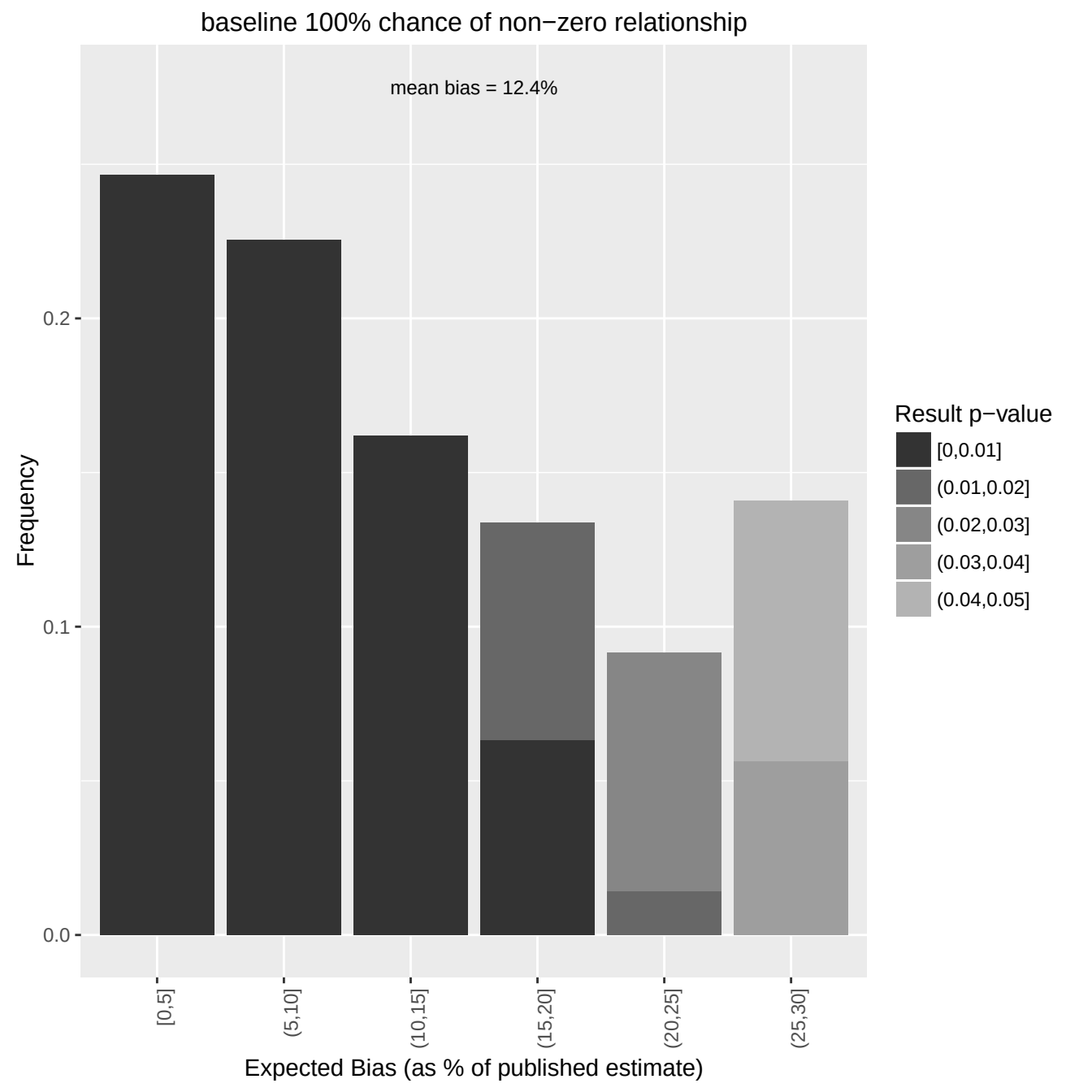
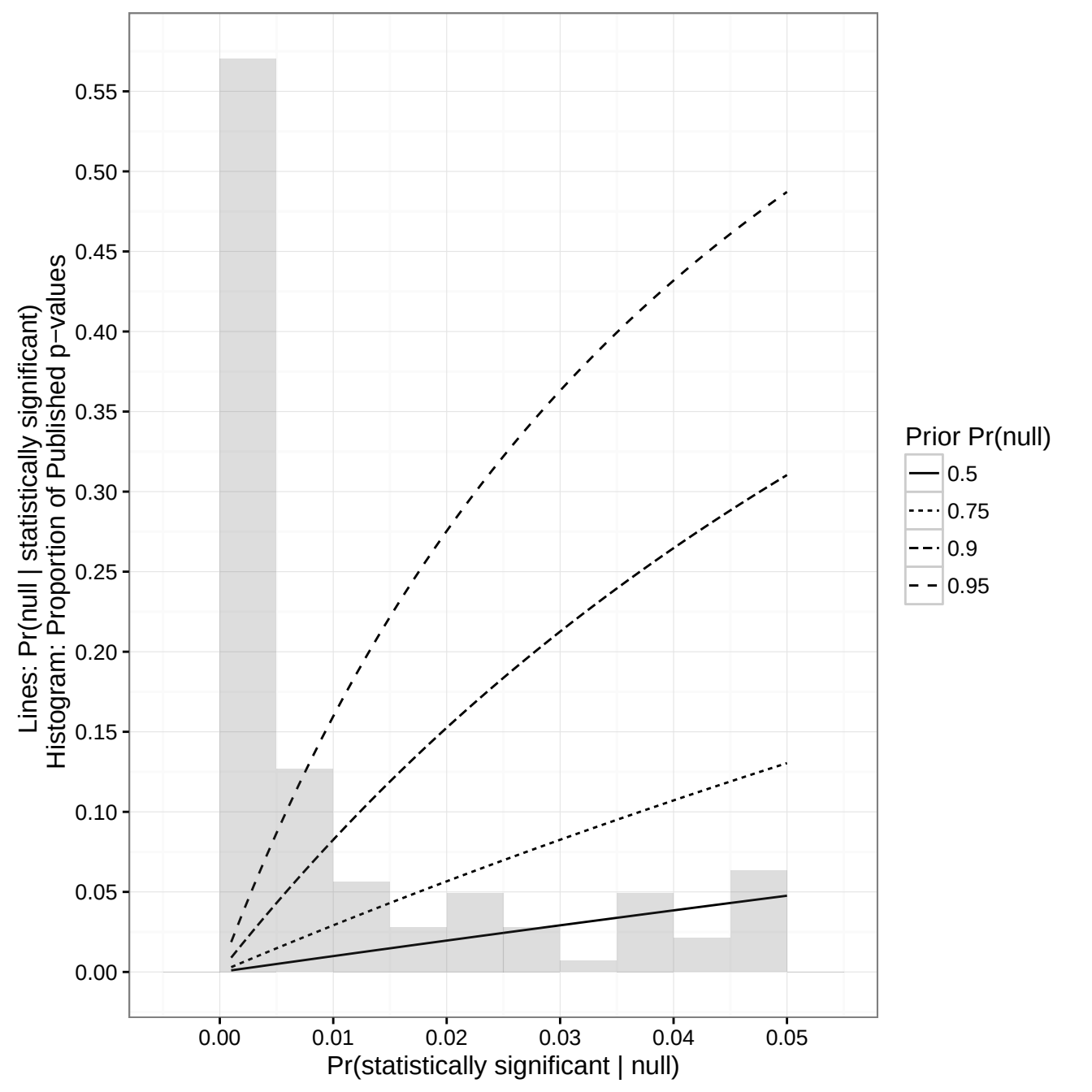
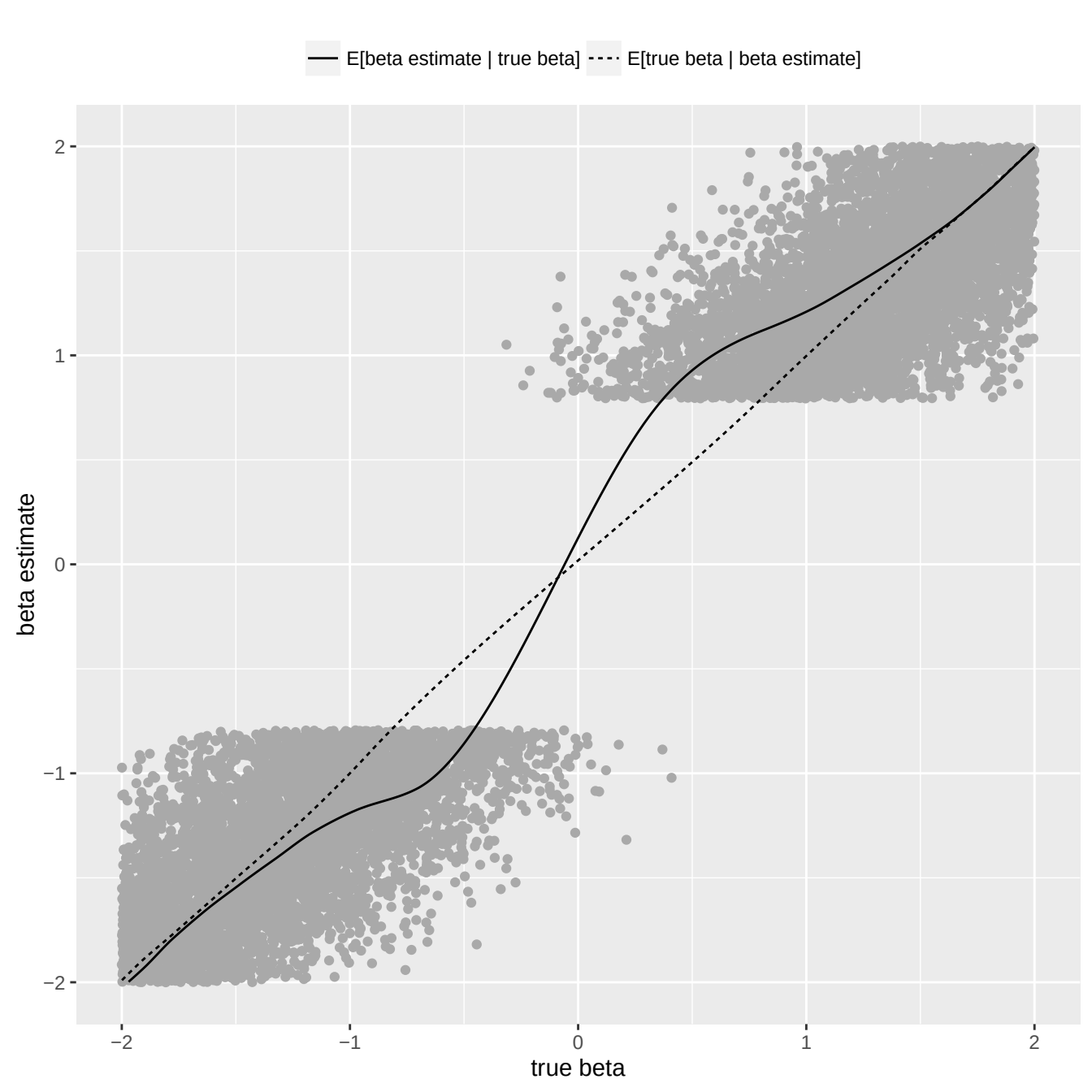

baseline 10% chance of non−zero relationship
mean bias = 29.8%
Frequency
0.0
0.1
0.2
[0,10]
(10,20]
(20,30]
(30,40]
(40,50]
(50,60]
Expected Bias (as % of published estimate)
Result p−value
[0,0.01]
(0.01,0.02]
(0.02,0.03]
(0.03,0.04]
(0.04,0.05]


baseline 100% chance of non−zero relationship
mean bias = 4.73%
Frequency
0.2
0.1
0.0
[0,2]
(2,4]
(4,6]
(6,8]
(8,10]
(10,12]
(12,14]
Expected Bias (as % of published estimate)
Result p−value
[0,0.01]
(0.01,0.02]
(0.02,0.03]
(0.03,0.04]
(0.04,0.05]


baseline 10% chance of non−zero relationship
mean bias = 40.5%
0.3
0.2
0.1
0.0
Frequency
[0,15]
(15,30]
(30,45]
(45,60]
(60,75]
(75,90]
Expected Bias (as % of published estimate)
Result p−value
[0,0.01]
(0.01,0.02]
(0.02,0.03]
(0.03,0.04]
(0.04,0.05]


baseline 100% chance of non−zero relationship
mean bias = 12.4%
Frequency
0.0
0.1
0.2
[0,5]
(5,10]
(10,15]
(15,20]
(20,25]
(25,30]
Expected Bias (as % of published estimate)
Result p−value
[0,0.01]
(0.01,0.02]
(0.02,0.03]
(0.03,0.04]
(0.04,0.05]


Lines: Pr(null | statistically significant)
Histogram: Proportion of Published p−values
0.55
0.50
0.45
0.40
0.35
0.30
0.25
0.20
0.15
0.10
0.05
0.00
0.00
0.01
0.02
0.03
0.04
0.05
Pr(statistically significant | null)
Prior Pr(null)
0.5
0.75
0.9
0.95


E[beta estimate | true beta]
E[true beta | beta estimate]
beta estimate
true beta
2
1
0
−1
−2
−2
−1
0
1
2