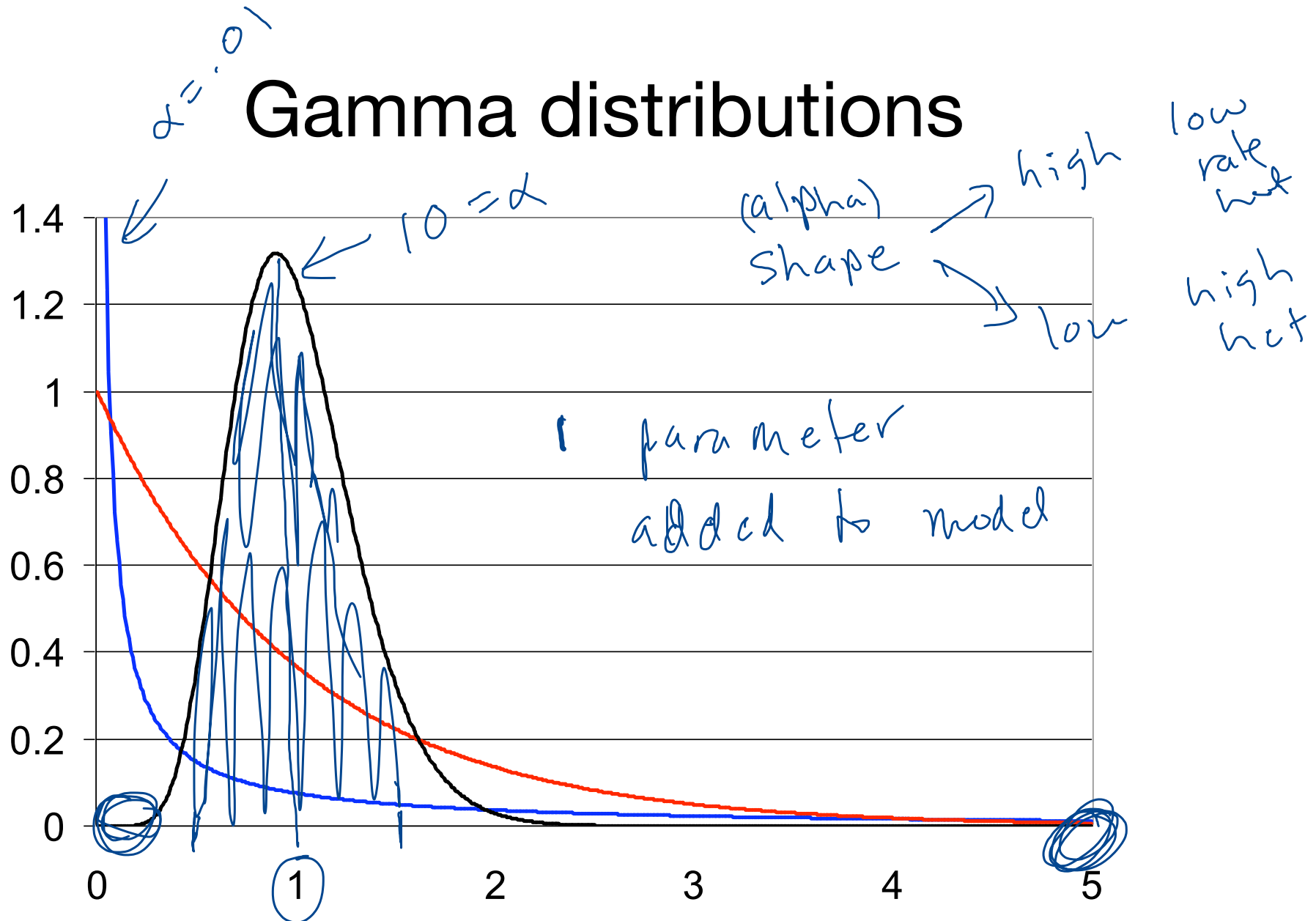


Gamma distributions

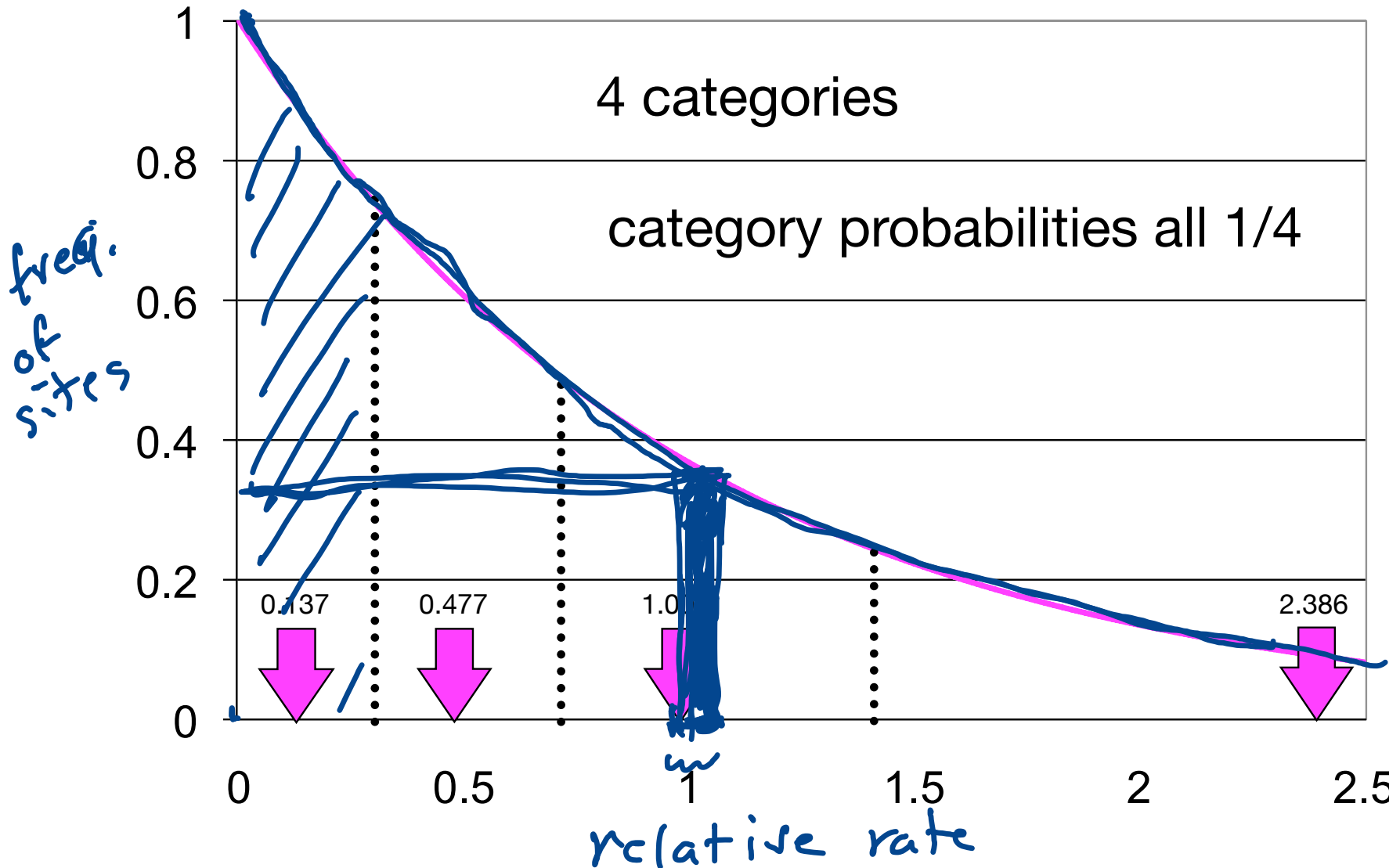


mean = 1

axis labels

shape = 1/variance

Discrete Gamma (+G)



+I
+G

Free rates (+R)

category relative rates category probabilities

1	r_1	<i>6 parameters must be estimated</i>	p_1
2	r_2		p_2
3	r_3		p_3
4	r_4		p_4

$$p_1 + p_2 + p_3 + p_4 = \textcircled{1} \quad \leftarrow \text{can determine from}$$

$$p_1 r_1 + p_2 r_2 + p_3 r_3 + p_4 \textcircled{r_4} = 1$$

Free rates (+R)

category	relative rates	category probabilities
1	r_1	p_1
2	r_2	p_2
3	r_3	p_3
4	r_4	p_4

$$p_1 + p_2 + p_3 + p_4 = 1$$

$$p_1 r_1 + p_2 r_2 + p_3 r_3 + p_4 r_4 = 1$$