

- What about d_r ? Large counts are taken to be reliable, so $d_r = 1$ for $r > k$, where Katz suggests $k = 5$. For $r \leq k$...

- We want discounts to be proportional to Good-Turing discounts:

$$1 - d_r = \mu\left(1 - \frac{r^*}{r}\right)$$

- We want the total count mass saved to equal the count mass which Good-Turing assigns to zero counts:

$$\sum_{r=1}^k n_r(1 - d_r)r = n_1$$

- The unique solution is:

$$d_r = \frac{\frac{r^*}{r} - \frac{(k+1)n_{k+1}}{n_1}}{1 - \frac{(k+1)n_{k+1}}{n_1}}$$