

## OPTIMAL AVERAGE CODEWORD LENGTH

## Why

Where does entropy come from  $?^1$ 

## Result

$$H(x) \leq \min_{c: \text{prefix free}} \mathsf{E}[\text{len}(c(x)] \leq H(x) + 1$$

<sup>&</sup>lt;sup>1</sup>Futre editions will expand

