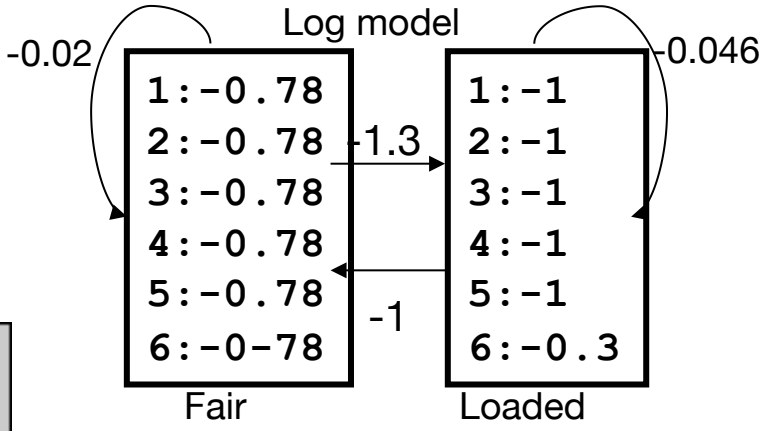
# Model decoding (Viterbi). Can you do it?



- Example: 566611234. What was the most likely series of dice used to generate this output?
- Fill out the table using the Viterbi recursive algorithm
  - Add the arrows for backtracking
- Find the optimal path




$$P_l(i+1) = p_l(i+1) \bullet \max_k(P_k(i) \bullet a_{kl}) \quad or$$

$$\log(P_l(i+1) = \log(p_l(i+1)) + \max_k(\log(P_k(i) + \log(a_{kl}))$$

| | 5 | 6 | 6 | 6 | 1 | 1 | 2 | 3 | 4 |
|---|---|---|---|---|---|---|---|---|---|
| F | -1.08 ← | -1.88 ← | -2.68 ← | -3.48 | | -4.92 ← | -5.73 ← | -6.53 | |
| L | -1.30 ← | -1.65 ← | -1.99 | | -3.39 ← | -4.44 | | -6.52 ← | -7.57 |