Monty Hall's problem. 1 - dos can All doons equally likely. 2- goals. Monly know what is behind what! Prior P((1)=1/3; P((2)=1/3; P((3)=1/3; Rea P(car behind door 1). P(O+1C) = 0 P(02/C1)=1/2 p (C1) P(03/C1)=1/2. P(01/9)=0 P(03/C2)=0 You have P(13) chosen P(0,1(3) = 0 door 1. P(2/(3) = 1. and \P(03/C3) = 0 host opens door2.

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$$P(C_{1}|O_{2}) = P(O_{2}|C_{1}) \times P(C_{1})$$

$$P(O_{2}|C_{1}) \times P(C_{1}) + P(O_{2}|C_{2}) \times P(x) + P(O_{3}|C_{3}) \times P(C_{3})$$

$$= 1/2 \times \frac{1}{3}$$

$$= 1/3$$

$$1/2 \times \frac{1}{3} + O + 1 \times \frac{1}{3}$$

$$P(c_2|o_2) = P(o_2|c_2) \times P(c_2) = 0$$

$$P(C_{3}|O_{2}) = P(O_{2}|C_{3}) \times P(C_{3})$$

$$= \frac{1 \times \frac{1}{3}}{\frac{1}{2}} = \frac{2}{3}$$