which leads to the expression

$$P^{(2)}_{\mathrm{mol}}(C_1 \dots C_N; R_1 \dots R_N) = P_1(C_1|R_1R_2) \cdot \prod_{i=2}^{N-1} P_i(C_i|C_{i-1}; R_{i-1}R_iR_{i+1}) \cdot P_N(C_N|C_{N-1}; R_{N-1}R_N) \tag{10a}$$

$$= P_1(C_1|C_2; R_1R_2) \cdot \prod_{i=2}^{N-1} P_i(C_i|C_{i+1}; R_{i-1}R_iR_{i+1}) \cdot P_N(C_N|R_{N-1}R_N) \tag{10b}$$