

**Definition** (Monoidal product in **DP**). Given two design problems  $f : A \multimap B$  and  $g : C \multimap D$ , their *monoidal product*  $f \otimes g : A \times C \multimap B \times D$  is their conjunction:

$$f \otimes g : (A \times C)^{\text{op}} \times (B \times D) \rightarrow_{\text{Pos}} \mathbf{Bool},$$

$$\langle \langle a, c \rangle^*, \langle b, d \rangle \rangle \mapsto f(a^*, b) \wedge g(c^*, d).$$

The diagrammatic representation of the monoidal product is reported in ??.