**DP** is defined as follows:

**Definition** (Uncertainty endofunctor). The uncertainty endofunctor Unc:  $\mathbf{DP} \rightarrow$ 

1. It maps an object **P** in **DP** (poset) to its poset of intervals Int(**P**).

2. It maps a morphism in **DP d**:  $\mathbf{F} \longrightarrow \mathbf{R}$  to Unc(**d**), where:

Unc(d): Int(F)<sup>op</sup> × Int(R)  $\rightarrow_{\mathbf{Pos}}$  Bool  $\langle [f_{\mathsf{L}}, f_{\mathsf{U}}]^*, [r_{\mathsf{L}}, r_{\mathsf{U}}] \rangle \mapsto \mathbf{d}(f_{\mathsf{L}}^*, r_{\mathsf{L}}) \wedge \mathbf{d}(f_{\mathsf{U}}^*, r_{\mathsf{U}}).$