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Relational Sheaves

We show that a sheaf for a *quantaloid* (\mathcal{Q}) is an idempotent suprema preserving lax-semifunctor $F : \mathcal{Q}^{co} \rightarrow \mathbf{Rel}$ (a *relational sheaf*). This implies that for a Grothendieck topos \mathcal{E} , a sheaf is a relational sheaf on the category of relations of \mathcal{E} and thus \mathcal{E} is equivalent to the category of relational sheaves and *functional transformations*. The theory is developed in the context of enriched taxons, which are supremum enriched semi-categories with an added structural requirement.