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Generalized multicategories

The notion of a generalized multicategory has been defined in a number of different contexts by Hermida, Clementino/Tholen, Leinster, and others. It includes such diverse examples as topological spaces, symmetric multicategories, and Lawvere theories. In each case, the author works with a “monad-like” functor on a bicategory, and shows that its “algebras” are generalized multicategories.

We will discuss a framework for generalized multicategories which uses monads on double categories (rather than on bicategories). By moving to this level of generality, we can unify all previous examples, while at the same time showing that definitions such as functors between generalized multicategories have a natural interpretation.

This is joint work with Mike Shulman.