The categorification of linear theories is presentation-independent

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The definition of pseudo-algebra for a 2-monad is equivalent, in the case of a strongly regular algebraic theory, to a definition stated in terms of factorization systems. This allows us to define a general categorification for strongly-regular theories equipped with a presentation (recovering, for instance, the theory of classical monoidal categories) and show that this categorification is independent (up to equivalence) of the chosen presentation of the theory.

This definition, and the presentation-independence theorem, can be extended to theories which are described by symmetric operads ("linear" theories); starting with the standard presentation of commutative monoids, for instance, we recover the theory of symmetric monoidal categories. Interestingly, in this case the algebras for our categorified theory are no longer pseudo-algebras for the original theory.