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When coherence comes for free

A monoidal category is equipped with associativity and unit isomorphisms, subject to coherence conditions. Under a commonly-satisfied hypothesis ("tensor generation"), these coherence conditions are redundant—in the sense that the existence of arbitrary associativity and unit isomorphisms implies the existence of a coherent collection of them. The same principle extends to the symmetric case.

I shall explain the hypothesis, and describe how (when the hypothesis is satisfied) coherent associativity, symmetry, and unit isomorphisms may be constructed from arbitrary ones.