

# On the monadicity of categories with chosen colimits

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There is a 2-category  $\mathcal{J}\text{-Colim}$  of small categories equipped with a choice of colimit for each diagram whose domain  $J$  lies in a given small class of small categories, functors strictly preserving such colimits, and natural transformations. The evident forgetful 2-functor from  $\mathcal{J}\text{-Colim}$  to the 2-category  $\mathbf{Cat}$  of small categories is known to be monadic. We extend this result by considering not just conical colimits, but general weighted colimits; not just ordinary categories but enriched ones; and not just small classes of colimits but large ones; in this last case we are forced to move from the 2-category  $\mathcal{V}\text{-Cat}$  of small  $\mathcal{V}$ -categories to  $\mathcal{V}$ -categories living within some larger universe. In each case, the functors preserving the colimits in the usual “up-to-isomorphism” sense are recovered as the *pseudomorphisms* between algebras for the 2-monad in question.

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