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Editorial Note: This manuscript has been previously reviewed at another journal that is not operating a transparent peer review scheme. This document only contains reviewer comments and rebuttal letters for versions considered at *Nature Communications*.

REVIEWERS' COMMENTS

Reviewer #2 (Remarks to the Author):

In this manuscript, Su, Wang, and coworkers reported a phosphonium salt-catalyzed desymmetrization of cyclic sulfoximines into chiral sulfinamides. The transformation proceeds via a rearrangement/skeletal reorganization of the sulfoximine nitrogen inserted into the parent five-membered ring to generate the corresponding six-membered sulfinamide with an S-stereogenic center. The authors have appropriately addressed the main concerns raised during the previous submission by carrying out additional experiments and revising the manuscript accordingly. Considering the high significance of the reported reaction in both synthetic utility and intriguing mechanism, this reviewer recommends its publication in *Nature Communications* in the current form.