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**Colin Defant** and **Nathan Williams\*** ([nathan.williams1@utdallas.edu](mailto:nathan.williams1@utdallas.edu)). *Coxeter Pop-Tsack Torsing*.

Given a finite irreducible Coxeter group  $W$  with a fixed Coxeter element  $c$ , we define the *Coxeter pop-tsack torsing operator*  $\mathbf{Pop}_T : W \rightarrow W$  by  $\mathbf{Pop}_T(w) = w \cdot \pi_T(w)^{-1}$ , where  $\pi_T(w)$  is the join in the  $c$ -noncrossing partition lattice of the set of reflections lying weakly below  $w$  in the absolute order. This definition serves as a “Bessis dual” version of the first author’s notion of a Coxeter pop-stack sorting operator, which, in turn, generalizes the pop-stack sorting map on symmetric groups. We show that if  $W$  is coincidental or of type  $D$ , then the identity element of  $W$  is the unique periodic point of  $\mathbf{Pop}_T$  and the maximum size of a forward orbit of  $\mathbf{Pop}_T$  is the Coxeter number  $h$  of  $W$ . In each of these types, we obtain a natural lift from  $W$  to the dual braid monoid of  $W$ . (Received September 20, 2021)