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Emily Leven, Brendon Rhoades and Andy Wilson* (atwilson0328@gmail.com). *Bijections for the Shi and Ish arrangements.*

The Shi hyperplane arrangement was introduced by Shi to study the Kazhdan-Lusztig cellular structure of the affine symmetric group. More recently, the Ish hyperplane arrangement was introduced by Armstrong in the study of diagonal harmonics. Armstrong and Rhoades discovered a deep combinatorial similarity between the Shi and Ish arrangements. We solve a collection of problems posed by Armstrong and Armstrong-Rhoades by giving bijections between regions of $\text{Shi}(n)$ and $\text{Ish}(n)$ which preserve certain statistics. The key tools in our bijections are the introduction of an Ish analog of parking functions, which we call rook words, and a new instance of the cycle lemma. (Received August 09, 2015)