1135-05-2332 **Jineon Baek**, **Hayan Nam*** (hayann@uci.edu) and **Myungjun Yu**. *Johnson's bijections and their application to counting simultaneous core partitions.*

A partition with no hook lengths divisible by a is called an a-core partition. For two coprime numbers a and b, a partition is called an (a, b)-core partition if it is both a-core and b-core partition. Johnson recently proved Armstrong's conjecture which states that the average size of an (a, b)-core partition is $(a + b + 1)(a - 1)(b - 1)/24$. He uses various coordinate changes and one-to-one correspondences that are useful for other counting problems about simultaneous core partitions. We give an expression for the number of $(a, b_0, b_1, \cdots, b_n)$-core partitions where a and b_0 are coprime. We also evaluate the largest size of a self-conjugate $(s, s + 1, s + 2)$-core partition. (Received September 26, 2017)