1119-05-70 **Jonathan Novak*** (jinovak@ucsd.edu), 9500 Gilman Drive, La Jolla, CA 92093. *Monotone walks on the symmetric groups.*

Consider the Cayley graph of the symmetric group $S(d)$, as generated by the conjugacy class of transpositions. This graph carries a natural edge labelling, the Biane-Stanley edge labelling, in which each edge corresponding to the transposition $(s\ t)$ is marked by t, the larger of the two numbers interchanged. A walk on $S(d)$ is monotone if the labels of the edges it traverses form a weakly increasing sequence. Given permutations ρ, σ and a nonnegative integer r, how many monotone r-step walks are there from ρ to σ? We will discuss algebraic and combinatorial approaches to this counting problem, and explain its rather surprising connections to analysis and probability. (Received February 06, 2016)