1041-05-200 **Helene Barcelo*** (barcelo@asu.edu), 17 Gauss Way, Berkeley, CA 94720-5070, **Christopher Severs** (csevers@asu.edu), School of Mathematical and Statistical Sc., Arizona State University, Tempe, AZ 85287-1804, and **Jacob White** (white@mathpost.asu.edu), School of Mathematical and Statistical Sc., Arizona State University, Tempe, AZ 85287-1804. *Discrete Homotopy Groups and Subspace Arrangements.* Preliminary report.

In 1962, Fadell and Neuwirth showed that removing all the diagonals $z_i = z_j$ from a complex n-dimensional space yields a $K(\pi, 1)$ space with fundamental group isomorphic to the pure braid group. In 1996, Khovanov proved a real counterpart to this theorem: starting with a real n-dimensional space and removing all real codimension-two subspaces of the form $x_i = x_j = x_k$ yields a $K(\pi, 1)$ space whose fundamental group he described. He obtained additional results on k-equal arrangements.

We generalize k-equal arrangements to k-parabolic arrangements and study the corresponding complements, $M_k(W)$, where W is a (real) finite Coxeter group. We show that the fundamental group of $M_k(W)$ is isomorphic to the discrete fundamental group A_1^{n-k} of the Coxeter complex associated to W, generalizing the (independent) results of Babson and Bjorner for the type A case. We use this result to show that given two Coxeter groups, the fundamental group of $M_k(W_1 \times W_2)$ is isomorphic to the direct product of the corresponding fundamental groups of $M_k(W_1)$ and $M_k(W_2)$. Finally, we generalize a result of Khovanov showing that the fundamental group of $M_2(W)$ is a normal subgroup of an infinite Coxeter group of index $|W|$. (Received August 11, 2008)