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**Elizabeth Leyton Chisholm\*** (eeleyton@math.ucsb.edu) and **Jon McCammond**. *Braid groups and euclidean simplices*.

When Krammer and Bigelow independently proved that braid groups are linear, they used the Lawrence-Krammer-Bigelow representation for generic values of its variables  $q$  and  $t$ . The  $t$  variable is closely connected to the traditional Garside structure of the braid groups and it plays a major role in Krammer's proof. The  $q$  variable, associated with the dual Garside structure of the braid groups, has received less attention.

In the special case  $t = 1$  and  $q$  real, we show that there is an elegant geometric interpretation of the LKB representation that highlights the role of the  $q$  variable, at least when it is viewed in Krammer's original basis. Concretely, braid group elements can be viewed as acting on and systematically reshaping euclidean simplices. In fact, for each simple element in the dual Garside structure, the reshaping is an elementary operation that we call edge rescaling. (Received August 19, 2014)