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Elmas Irmak and **John D. McCarthy***, A228 Wells Hall, Department of Mathematics,
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Complex.*

In this paper, we prove that each injective simplicial map of the arc complex of a compact, connected, orientable surface with nonempty boundary is induced by a homeomorphism of the surface. We deduce, from this result, that the group of automorphisms of the arc complex is naturally isomorphic to the extended mapping class group of the surface, provided the surface is not a disc, an annulus, a pair of pants, or a torus with one hole. We also show, for each of these special exceptions, that the group of automorphisms of the arc complex is naturally isomorphic to the quotient of the extended mapping class group of the surface by its center. (Received September 25, 2006)