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In this talk, I will present examples of finite covers of punctured surfaces where the first rational homology is not spanned by lifts of simple closed curves. Additionally, I will discuss analogous results for primitive elements and the homology of finite index subgroups of a free group. Then, I will sketch the proofs of these results which use representation theory, free restricted Lie algebras, and some amusing facts about polynomials over finite fields. This is joint work with Andrew Putman. (Received January 28, 2019)