1014-06-1278 **John C Meakin*** (jmeakin@math.unl.edu), Department of Mathematics, University of Nebraska, Lincoln, NE 68588. *From biordered sets to two-complexes.* Preliminary report.

In the 1970's Nambooripad introduced the notion of a biordered set as an axiomatic characteriztion of the set of idempotents of a semigroup relative to certain basic products that must always be defined. A biordered set comes equipped with two quasi orders and reduces to a lower semilattice in the case that the associated semigroup is an inverse semigroup. It was conjectured in the 1980's that the maximal subgroups of the free idempotent-generated semigroup on a biordered set must be free groups and that the word problem for this object must be decidable if the biordered set is finite. By associating a two-complex with a biordered set in a natural way, we show that both conjectures are false: every finitely presented group arises this way, and thus the word problem is in general undecidable. (Received September 27, 2005)