A new vincular pattern based Mahonian statistic on words

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In 2000 Babson and Steingrímsson re-defined known Mahonian statistics on permutations and defined new ones, their approach being based on vincular pattern involvement; one of these new statistics is STAT. Refining a previous result of the second author of this talk, we show that the natural extension of STAT to words is still Mahonian; and numerical evidences let us believe that it is the unique statistic with this property among those defined by Babson-Steingrímsson. More precisely, we construct an explicit bijection between words with a fixed value for the major index and those with the same value for STAT, and we give some particular properties of both, this bijection and the extension of STAT to words.

[1]This work was partially supported by *La Région de Bourgogne, France*