

Public Abstract

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Title:Developing a computer coding scheme for the implicit achievement motive

Implicit motives are measured using a projective assessment, the Picture Story Exercise (PSE), involving labor-intensive coding of participant-generated writing. The present research uses insights from previous attempts to automate coding, as well as advances in natural language processing and machine learning, to create a new method of automated coding for the achievement motive (NAch). In part 1, I collected coded PSE sentences from implicit motive researchers. Two models were generated using multilayer perceptron neural networks to predict achievement motive imagery, one using the Linguistic Inquiry and Word Count (LIWC; Pennebaker, 2001) software, and one using a novel text processing system, called Maximum Synset-to-Sentence Relatedness (MSSR). Part 2 sought to experimentally manipulate NAch, and produce 2 more neural network models similar to those of part 1, except that the models in this case predicted experimental condition. Further, human generated NAch scores from the PSEs collected in this part were compared against computer generated NAch scores produced by the models from part 1, to provide another test of the magnitude of the relation between human and computer generated NAch scores. Part 3 tested all 4 models to predict achievement motive imagery in archival data collected by Ratliff (1979). Because these data were coded using a different NAch coding scheme, and also included other variables theoretically related to NAch, these tests were used to search for evidence of convergent and predictive validity. Findings were promising for both models developed in part 1, but further improvements will be necessary before they can replace human coders.