

Towards the Heider balance - asymmetric social relations

K. Kułakowski^a M. J. Krawczyk^a M. Wołoszyn^a P. Gronek^a
and J. Mucha^b

^a*AGH University of Science and Technology, Faculty of Physics and Applied Computer Science, Mickiewicza 30, 30-059 Cracow, Poland, E-mail: kulakowski@fis.agh.edu.pl*

^b*AGH University of Science and Technology, Faculty of Humanities, Gramatyka 8a, 30-071 Cracow, Poland.*

Removal of cognitive dissonance by classification of individuals as enemies or friends has been modeled with a set of differential equations (K. Kułakowski et al, IJMPC 16 (2005) 707). Under this dynamics, interpersonal relations tend to the structural balance, where the group is divided into two parts, mutually hostile but internally friendly. Here we generalize the model by releasing the condition on symmetry (reciprocity) of interpersonal relations. Sets of new stationary states are identified, consisting of at most four parts; four types of neighborhood of nodes in the network. Within each set, the states differ only in the numbers of actors of a given type of neighborhood. For each set, conditions of stability are specified. The results are interpreted within the Cooley theory of self-looking glass. In particular, a new index of self-acceptance is proposed. The results can be of interest for teachers and class tutors. More details in arXiv:1903.12464.