36th M. Smoluchowski Symposium on Statistical Physics: Soft Matter, Information Processing and Nonequilibrium Fluctuations



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Mitosis of life aims in Poland 2012-2016

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From European Social Survey 2012-2016, data are selected on how Polish respondents are attached to 21 issues. The list of issues is formulated according to the scheme: 'it is important to ...' and it includes items like: try new and different things, make own decisions, seek fun, follow traditions, behave properly etc.

The answers are weighted according to 6-point Likert scale. The Pearson correlation coefficients r(i,j) are calculated between the profiles of attachment to particular issues i,j as dependent on education of the respondents. Further, the coefficients r(i,j) are used as initial values of the relations s(i,j) between the issues, governed by the differential equations ([1] and literature therein)

$$\frac{ds(i,j)}{dt} = [1 - s^2(i,j)] \sum_k s(i,k) s(k,j)$$

Generically, the solutions s(i,j) tend to ± 1 in such a way that two separate groups of issues arise, with s(i,j)=+1 for i,j within the same group and s(i,j)=-1 for i,j in distinct groups. In this way we refer to the concept of Heider balance, applied here to the issues which represent life aims; hence the term 'mitosis' in the title.

There is a clear continuity of the results, repeated through three rounds in 2012, 2014 and 2016. Namely, the partition changes for only 4 out of 21 issues. We are going to discuss to what extent the content of each group is coherent. In this set of items we could distinguish coherent two sets of attitudes. One – say, group A - is representative of achieving society as David McClelland described it in his famous book [2]. These are proactive driven by different motivations, creative, open minded people. Second – group B - are people with 'traditional' attitudes of being modest, obedient, follow rules, rather be subordinated that being a leader – traditional conservatives. There are few labile items, we will follow their inclusion or exclusion to define groups describing the broader context in which they occurred.

- 1. M. J. Krawczyk and K.Kułakowski, Entropy 23 (2021) 1418.
- 2. D. C. McClelland, The Achieving Society, Princeton 1961.

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Presenter: KUŁAKOWSKI, Krzysztof **Session Classification:** Session 13