Report for Ashley

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Loading data

Data are at http://github.com/frantisek901/Spirals/Experiment. Experiment is still running and I, Francesco, from time to time actualize the `*.csv` files at GitHub, then I run script `experiment.R` which loads the data. Later version probably finds better names for variables, but now, I use default names from NetLogo experiment.

Who is not interested in working with megabytes of `*.csv files`, might use compiled `*.RData`, there are two files: `shortData.RData`, which is main data file from experiments running only 365 steps, these data are extended by extra simulations with low size of small-world network neighborhood; and `longData.RData`, which is additional data file from experiments running 3650 steps – thanks to it we might test the effect of simulation length.

Now we load these data:

```
load("shortData.RData")
load("longData.RData")
```

Regressions

```
##
## Call:
## lm(formula = normalized_polarization_final ~ boundary + mode +
##     id_threshold + `use_identity?` + `tolerance-level` + `p-speaking-level` +
##     `conformity-level` + `p-random` + `n-neis`, data = res)
##
## Residuals:
##      Min       1Q   Median       3Q      Max
## -0.33332 -0.06519 -0.00467  0.03727  0.47787
##
## Coefficients:
##                       Estimate Std. Error  t value Pr(>|t|)
## (Intercept)         -4.202e-02  3.488e-03  -12.047  < 2e-16 ***
## boundary            -1.986e-01  4.509e-03  -44.053  < 2e-16 ***
## modevaguely-speak   -1.715e-01  4.420e-04 -387.901  < 2e-16 ***
## id_threshold         7.002e-01  3.139e-03  223.051  < 2e-16 ***
## `use_identity?`TRUE  8.665e-02  5.359e-04  161.700  < 2e-16 ***
## `tolerance-level`   -2.774e-02  8.081e-04  -34.329  < 2e-16 ***
## `p-speaking-level`  -1.912e-02  2.460e-03   -7.773 7.71e-15 ***
## `conformity-level`  -5.831e-02  3.008e-03  -19.387  < 2e-16 ***
## `p-random`          -5.675e-04  6.314e-03   -0.090    0.928
```

```
## `n-neis`            -7.171e-04  1.415e-05  -50.684  < 2e-16 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.09957 on 202967 degrees of freedom
## Multiple R-squared:  0.5509, Adjusted R-squared:  0.5509
## F-statistic: 2.767e+04 on 9 and 202967 DF,  p-value: < 2.2e-16

##
## Call:
## lm(formula = ESBSG_polarization_final ~ boundary + mode + id_threshold +
##     `use_identity?` + `tolerance-level` + `p-speaking-level` +
##     `conformity-level` + `p-random` + `n-neis`, data = res)
##
## Residuals:
##      Min       1Q   Median       3Q      Max
## -0.26206 -0.06618 -0.01669  0.05064  0.47755
##
## Coefficients:
##                       Estimate Std. Error  t value Pr(>|t|)
## (Intercept)         -5.848e-02  3.395e-03  -17.224  < 2e-16 ***
## boundary            -1.431e-01  4.389e-03  -32.611  < 2e-16 ***
## modevaguely-speak   -1.400e-01  4.303e-04 -325.442  < 2e-16 ***
## id_threshold         5.506e-01  3.056e-03  180.176  < 2e-16 ***
## `use_identity?`TRUE  9.854e-02  5.217e-04  188.887  < 2e-16 ***
## `tolerance-level`   -2.015e-02  7.867e-04  -25.608  < 2e-16 ***
## `p-speaking-level`  -1.256e-02  2.395e-03   -5.245 1.56e-07 ***
## `conformity-level`  -4.290e-02  2.928e-03  -14.652  < 2e-16 ***
## `p-random`          -7.545e-04  6.147e-03   -0.123    0.902
## `n-neis`            -5.866e-04  1.377e-05  -42.588  < 2e-16 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.09693 on 202967 degrees of freedom
## Multiple R-squared:  0.4882, Adjusted R-squared:  0.4882
## F-statistic: 2.152e+04 on 9 and 202967 DF,  p-value: < 2.2e-16

##
## Call:
## lm(formula = normalized_polarization_final ~ boundary + mode +
##     id_threshold + `use_identity?` + `tolerance-level` + `p-speaking-level` +
##     `conformity-level` + `p-random` + `n-neis`, data = long)
##
## Residuals:
##      Min       1Q   Median       3Q      Max
## -0.29712 -0.01721  0.00332  0.01612  0.47932
##
## Coefficients:
##                       Estimate Std. Error  t value Pr(>|t|)
## (Intercept)         -2.392e-01  5.234e-03  -45.699  < 2e-16 ***
## boundary            -1.768e-01  4.728e-03  -37.397  < 2e-16 ***
## modevaguely-speak   -1.182e-01  4.632e-04 -255.132  < 2e-16 ***
## id_threshold         8.638e-01  6.957e-03  124.164  < 2e-16 ***
## `use_identity?`TRUE  9.767e-02  6.220e-04  157.032  < 2e-16 ***
```

```
## `tolerance-level`   -2.584e-02  1.072e-03  -24.099  < 2e-16 ***
## `p-speaking-level`  -1.338e-02  2.578e-03   -5.188 2.14e-07 ***
## `conformity-level`   1.980e-02  3.152e-03    6.284 3.32e-10 ***
## `p-random`          -2.277e-03  6.617e-03   -0.344   0.7308
## `n-neis`            -6.678e-05  3.860e-05   -1.730   0.0836 .
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.05775 on 62174 degrees of freedom
## Multiple R-squared:  0.6334, Adjusted R-squared:  0.6333
## F-statistic: 1.194e+04 on 9 and 62174 DF,  p-value: < 2.2e-16


##
## Call:
## lm(formula = ESBSG_polarization_final ~ boundary + mode + id_threshold +
##     `use_identity?` + `tolerance-level` + `p-speaking-level` +
##     `conformity-level` + `p-random` + `n-neis`, data = long)
##
## Residuals:
##      Min       1Q   Median       3Q      Max
## -0.20647 -0.01769  0.00374  0.01318  0.47894
##
## Coefficients:
##                       Estimate Std. Error  t value Pr(>|t|)
## (Intercept)         -2.501e-01  4.815e-03  -51.944  < 2e-16 ***
## boundary            -9.135e-02  4.350e-03  -21.002  < 2e-16 ***
## modevaguely-speak   -6.249e-02  4.261e-04 -146.643  < 2e-16 ***
## id_threshold         7.178e-01  6.400e-03  112.158  < 2e-16 ***
## `use_identity?`TRUE  9.967e-02  5.722e-04  174.196  < 2e-16 ***
## `tolerance-level`   -1.215e-02  9.864e-04  -12.319  < 2e-16 ***
## `p-speaking-level`  -1.239e-02  2.372e-03   -5.224 1.76e-07 ***
## `conformity-level`  -2.090e-03  2.899e-03   -0.721  0.47098
## `p-random`          -6.331e-04  6.088e-03   -0.104  0.91718
## `n-neis`            -1.106e-04  3.551e-05   -3.115  0.00184 **
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.05313 on 62174 degrees of freedom
## Multiple R-squared:  0.5116, Adjusted R-squared:  0.5116
## F-statistic:  7237 on 9 and 62174 DF,  p-value: < 2.2e-16
```