4. Singer et al. 2019: Polarization and Memory

Kevin Dorst   PHIL 1460
kevindorst@pitt.edu   January 28, 2021

I. Polarizing Deliberation

Key feature of polarization: arises from *group discussions*.

Twitter! Judges. Juries.

Group polarization effect: opinions tend to become *more homogenous* and *more extreme* after discussions with like-minded others.

Isenberg 1986

It's easy to see how this could be *practically* rational.

· "Social-comparison theory": want to signal commitment to group cause.

Myers and Lamm 1976

· Identity-based cognition: your beliefs won't affect policy, but will affect your friendships.

Kahan et al. 2017

Worries: Empirical complications (dentist chairs); "motivated reasoning", insofar as it exists, works through *processing of evidence*.

Kunda 1990

Q: *Can* we believe for purely practical reasons?

It's hard!

Singer et al.: Could there be an *epistemically* rational explanation for why group discussions lead to polarization?

Based on our limited or "bounded" rationality.

II. Modeling Delibration

Pieces of the model:

· Fixed proposition q = *the defendant is guilty*.
· Things you know are *reasons for/against belief*.
· Rational: strength of belief = (summed) *weight of reasons*.
  · Build in Uniqueness Thesis: weights are same for all people.
  · Believe if sum > 0; disbelieve if sum < 0

Defendant has motive: +2
Witness claimed defendant was with him at the time: -2
Witness has lied in past: +1
Etc....

· Generate (random) fixed pool of relevant reasons; each person starts with random reasons from that set.
· Discussion proceeds by random person sharing random reason.

In some versions of models, they also investigate individually.

· **Memory limits:** can only remember 7 reasons; when get an 8th, take it into account to decide which reason to forget.

Strategies for forgetting:

· Simple-minded: forget randomly.
· Weight-minded: forget reason with smallest weight.
· Coherence-minded: forget reason of smallest weight *that tells against your belief.*

So if have {+2,+2,+1,+1,-2,-2,-2} (= 0) and get new +1 reason, then simple-minded forgets randomly; weight-minded forgets +1, and coherence-minded forgets -2.

Model results:

- Both Simple- and Weight-minded converge in opinions.
- But Coherence-minded tend to polarize into two groups.

III. So What?

Singer et al. argue that coherence-minded forgetting is *epistemically rational*—and therefore that group polarization is too.

Clearly simple-minded forgetting is irrational. What about others?

Argument:

P1 The model's agents are epistemically rational if they do the best they can to get to the truth, given their limitations.

P2 Either weight-minded or coherence-minded forgetting is best.

P3 Since weight-minded forgetting can lead them to change their beliefs on the basis of impoverished reasons, but coherence-minded cannot, the latter is better.

C1 Coherence-minded forgetting is rational for our agents.

P4 Real people may well be relevantly similar to the model's agents.

C2 Real-life group polarization may well be due to rational causes.

E.g. limit = 4. Has {+6,+7,-6,-8} and receives new +5. Currently +4, but weight-minded forgetting will drop +5 and change to disbelieving with -1.

But coherence-minded agents *never change beliefs when they forget*.

References

Isenberg, Daniel J., 1986. 'Group Polarization. A Critical Review and Meta-Analysis'. *Journal of Personality and Social Psychology*, 50(6):1141–1151.

Kahan, Dan M., Peters, Ellen, Dawson, Erica Cantrell, and Slovic, Paul, 2017. 'Motivated numeracy and enlightened self-government'. *Behavioural Public Policy*, 1:54–86.

Kunda, Ziva, 1990. 'The case for motivated reasoning'. *Psychological Bulletin*, 108(3):480–498.

Myers, David G. and Lamm, Helmut, 1976. 'The group polarization phenomenon'. *Psychological Bulletin*, 83(4):602–627.