In Praise of Contradiction:
How to Help Groups Uncover What They Privately Believe

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Misrepresentation under social pressure

- **Choosing a restaurant** with friends: Italian or Japanese?
  You prefer Japanese. All have already said "Italian".
  You say "Italian" too.
- **Homosexual coming-out:** easier when others have already come-out.
- **Departement meeting:** you think the PhD candidate is Excellent.
  The head says "Terrible"; you just say "I think she's Very Good".

- **Misrepresenting** one's view (belief, preference):
  your **public** view **differs** from your **private** view.
- Here: because of a perceived **social pressure**.
  (Kuran, 1995, *Private Truths, Public Lies*, Harvard UP)
  ="compliance-based misrepresentation".

- Typical situation: oral, sequential public expressions ("votes").

Misrepresentation – empirical aspects

- Compliance-based misrepresentation can occur:
  - even with a low social pressure,
  - for laypeople or experts.
- Experimental clues:
  Asch (1951), Sunstein (2005), Urfalino and Costa (2015).

Detrimental consequences for the group

- **Immediately:** some private views are not known to the group.
- **Dynamically:** hiding a private view has an impact on the views expressed by others (snowball effects).

$\Rightarrow$ **distortion** of the collective view or decision

Our question

- **Our question (applied and normative):**
  can we find an **efficient and applicable** procedure
  to **decrease the distortion** of views
  (because of compliance-based misrepresentation)?

- **Object of inquiry:**
  - small deliberative groups, e.g. expert panel,
  - no inquiry about Nature (any more)
    ($\neq$ Zollman 2010, Mohseni and Williams 2019)

What we study

- **Compliance-based misrepresentation**:
  public view $\neq$ private view, because of social pressure.
- Misrepresentation **because of social pressure**:
  - **not** because of **deception**,
  - **not** because of **strategic reasoning**,
  - ...
- **Not any kind** of conformism:
  - an agent **has a different private view**,
  - **not** rooted in a **change** of private views (no learning, no persuasion, no informational cascade, no anchoring...)

In Praise of Contradiction

1. A model of misrepresentation
2. Existing results
3. Improvements
4. Conclusion

The model — generalities

- Typical situation: a small group deliberates and votes, in an oral and sequential way, on **one binary question**.
- We assume agents' **private views don't change**.
  Two possible **interpretations**:
  - deliberation is actually well separated from vote,
  - just an analytical assumption, study one mechanism.

  Methodologically: a **baseline** model, to be complexified.
- "Views" = preferences and opinions.
  We **don't assume** there is a matter of fact, or one correct view.
- We assume the group takes its decision **with the majority rule**.
- We are interested in the group's **distorted decisions**:
  difference between decisions made with&without misrepresentation.

A model of misrepresentation

- n agents, sitting around a table, with a Yes/No question.
- Each agent i has a richer view than just Yes or No: she has a **private view** p_i in $[0, 1]$.

- How does the $[0, 1]$ view map onto Yes/No?
  - [0, 0.5] is expressed as 0.25 (=No),
  -]0.5, 1] is expressed as 0.75 (=Yes).

  This defines the function Proj.

The model, continued

- **Without** misrepresentation,
  agent i expresses the view $e_i := \text{Proj}(p_i)$.
- **Misrepresentation** (informally): the expressed view an agent expresses a view which is somewhere between her private view and the group's expressed view (social pressure).
- Define the **group's expressed view**:
  $G_i =$ linear average of the i already expressed views.
- In case of several table rounds,
  G_i is the linear average of the last $n-1$ expressed views.
- **Misrepresentation** for agent i:
  $e_i = \text{Proj}[(1-\alpha)p_i + \alpha G_{i-1}]$.
  and $e_1 = \text{Proj}(p_1)$.

  Parameter $\alpha \in [0,1]$: the misrepresentation rate.

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Existing results: Imbert et al (2019)

Episteme (2018) page 1 of 17 © Cambridge University Press
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IMPROVING DELIBERATIONS BY REDUCING MISREPRESENTATION EFFECTS

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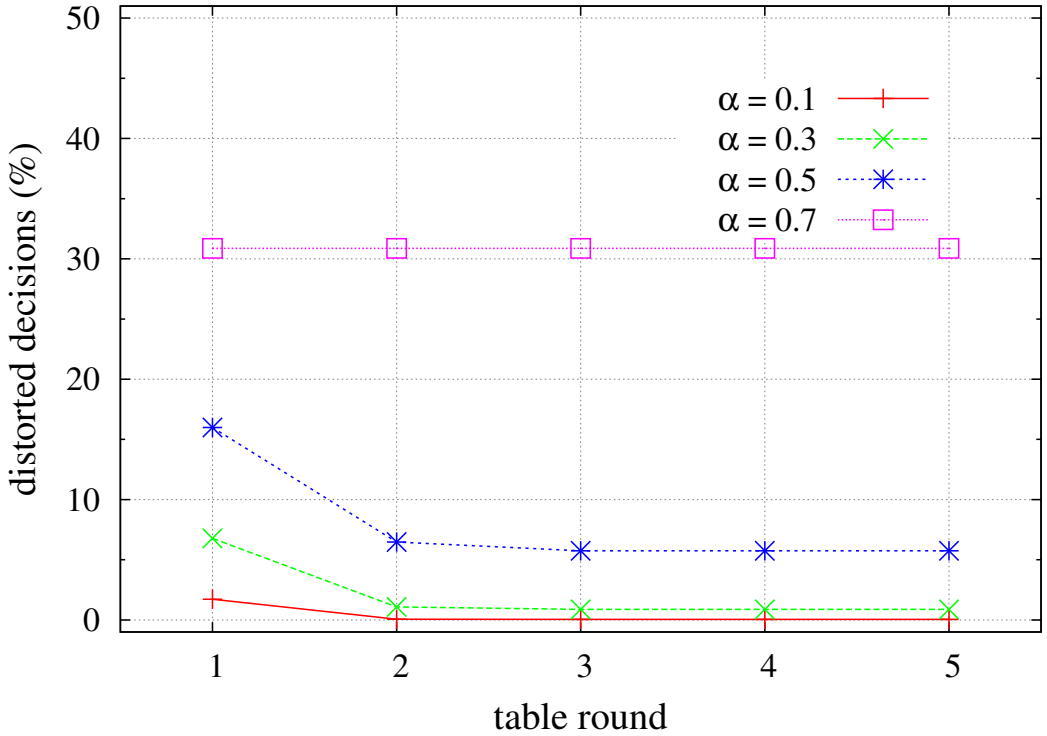
- In that paper, suggested improvements:
  - #1 Hold several table rounds,
  - #2 Speak in a random order,
  - #3 Express fine-grained opinions,
  - #4 Create a dissenter-friendly atmosphere.
- **Today: focus on #1 and #2**, so as to still improve them.

#1: Several table rounds ($n = 5$)

- **Results** for $n = 5$ (+ in the paper, phase space study)

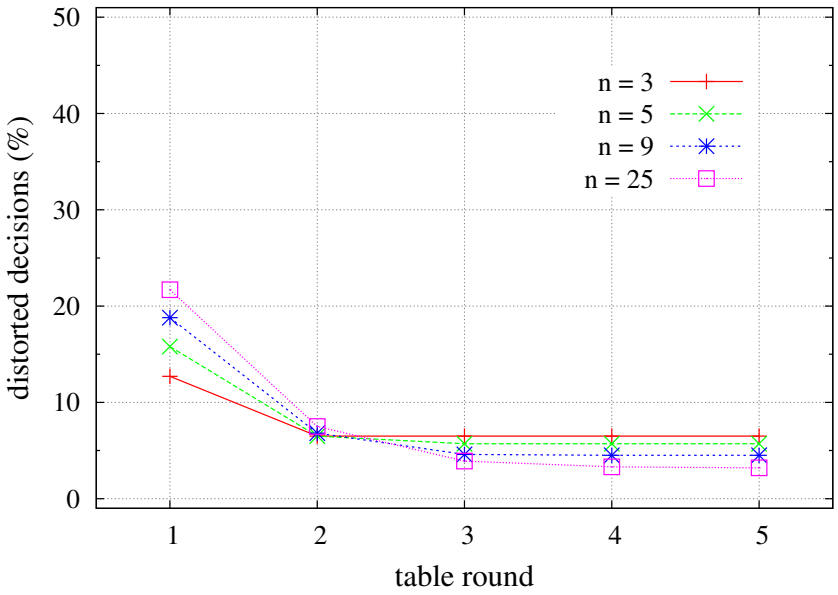


- Distortion can be **large** after 1 table round.
- **Quick decrease** with rounds, except for a too large α.
  Beyond a threshold $\alpha_t = 2/3$, dissenting becomes mathematically impossible.
- Moral #1: groups should really hold 2 (or 3) table rounds.

#2: Order of speech — modeling

- Previous graph: simulations have been run with agents speaking **in a random order**.
- But in real life, agents sit or speak **in a correlated way**.
- **Does it matter**?
  Let us compare with the **decreasing or increasing orders** (maximal effect).

#2: Comparison random *vs* in/decreasing orders ($\alpha = 0.5$)



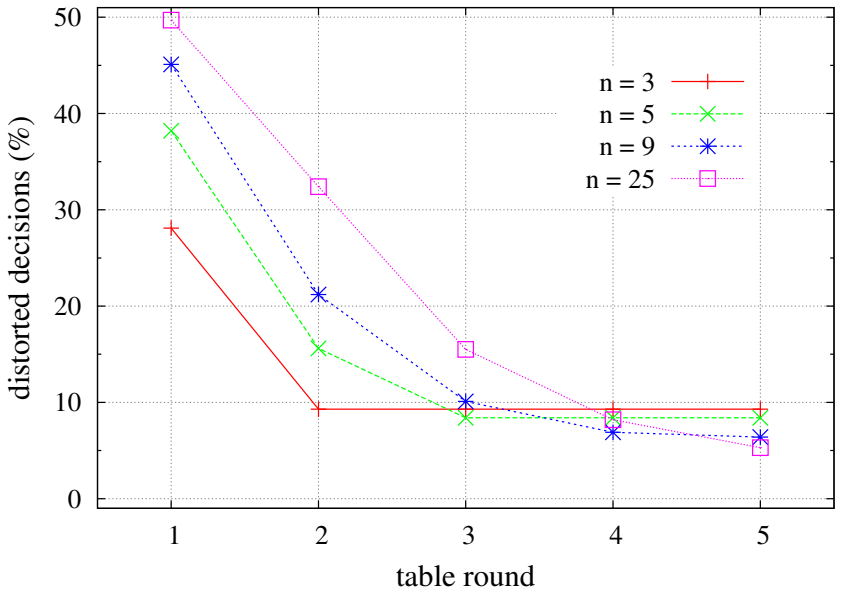


Figure: Left: random order. Right: in/decreasing order.

- With the in/decreasing order:
  - **distortion is about twice** that with the random order.
  - **many table rounds** are needed for large groups ($\approx$ 100 interactions)!
- Moral #2: groups should **really care about the random order** of speech

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The problems with holding several table rounds

- Problem: it's **long**. The larger the group, the worst (more table rounds needed... with a larger table!).
- Problem: people **don't like publicly changing their minds** (Madison 1787)

The problems with adopting a random order of speech

- Practical problem: do you have a random number generator?
- Theoretical problem: **only ok on average** (conformist cascades are still possible).
- Theoretical problem: **still** some significant **distortion**.

Can we do better than random, in just one round?

A fair defense?

- Why distortion? The view with more private supporters was publicly **not well defended** because the opposed view was **expressed first**, and a **conformist cascade** ensued.
- To prevent that: give each view a chance **with a fair defense** — alternate?
- Idea: ask **private supporters** of both sides to speak alternatively
- Problem: one doesn't have access to private views — they are private!

A fair defense?

- Other idea: ask **public supporters** of both sides to speak alternatively.
- **In practice:** organize an alternate defense (="Alternate1")
  - who wants to publicly defend A?
  - who wants to publicly defend B?
  - who wants to publicly defend A?
  - who wants to publicly defend B?
  - ...

  At each step, agents answer based on the view e_i they would publicly express.
- And **pick randomly** which view is first defended.
- **Advantages** of Alternate1:
  - very simple procedure,
  - dissenting is not frowned upon, but looked for, which should decrease distortion.

Alternate1: results

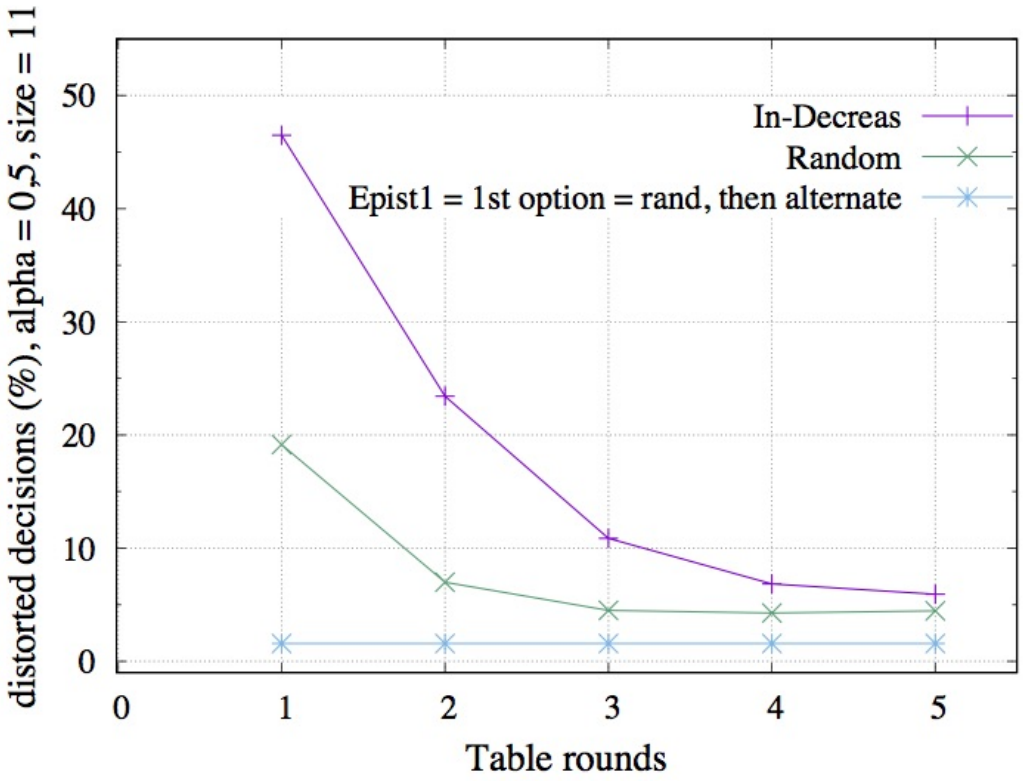

Figure: Influence of the table rounds (group of 11, $\alpha = 0.5$).

- Very low distortion at the first table round.
- No use to have more table rounds.
  (The cascade has been killed from the start!)

Alternate1: results

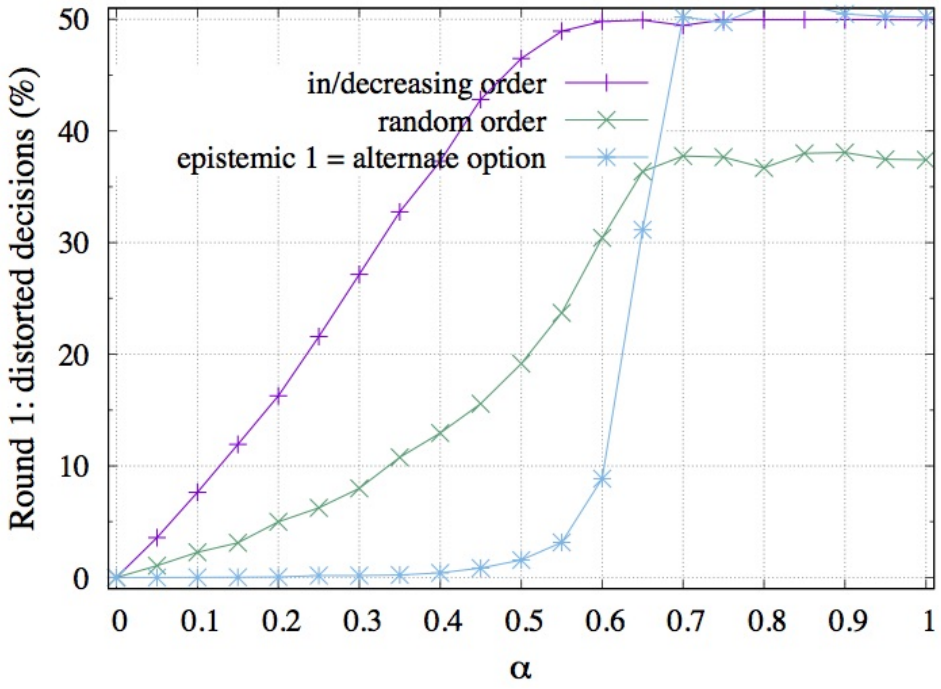

Figure: Influence of α (group of 11, first table round).

- For high α, alternate1 is **as bad as the in/decreasing order**!
- **Why?**
  Alternate1 treats equally both views **even if one is in minority.**

Alternate2 procedure

- The problem is **when a minority view is defended first**.
- Solution: instead of starting with a random draw of a view, start with a **random draw of an agent**.
- **Alternate2:** random draw of an agent, then alternate defense.

Alternate2: results

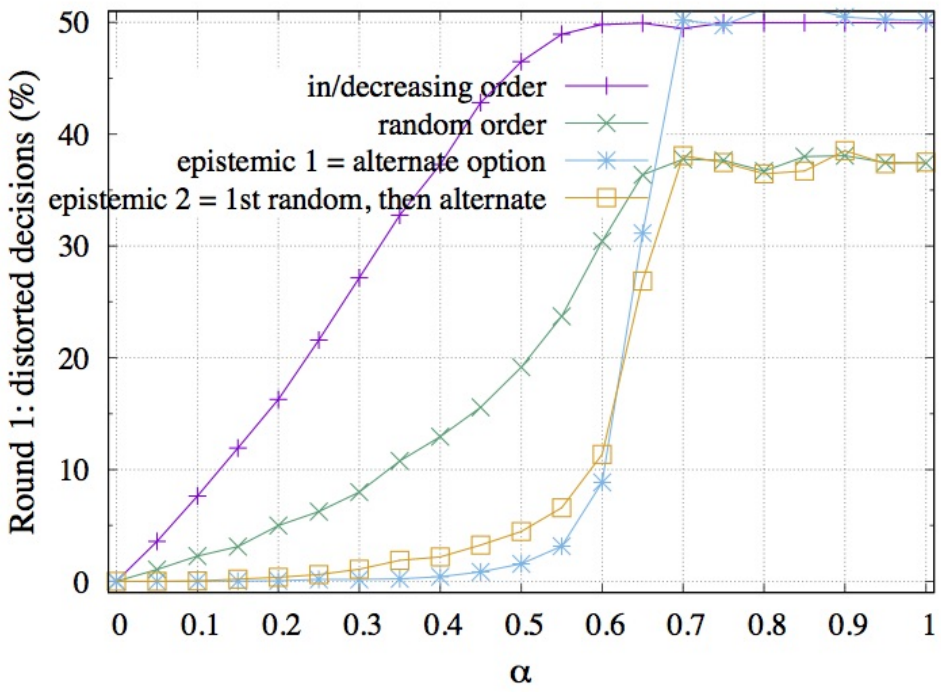

Figure: Influence of α (group of 11, first table round).

Alternate2 takes the best of both worlds — **problem solved.**
Psychological mechanism still here, but no effect at the group level any more.
(+ phase space study)

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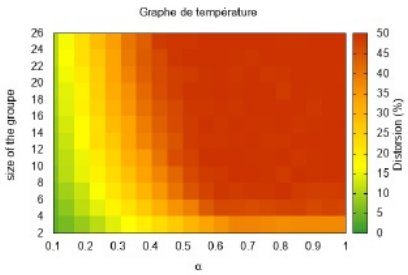
Conclusion

- Misrepresentation effects can spoil oral votes, but they can be significantly reduced.
- Better than random order: alternate defense of views.
  "Does someone feel different?", instead of "We all agree, right?".
- And first pick randomly an agent, not a view.
- Simple, easy to implement, very efficient.
- Next steps:
  - to be tested in real life,
  - to be combined with models of opinions.

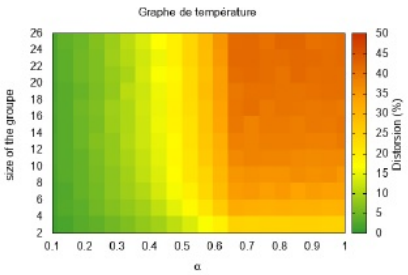
Why not just secret voting?

- **Too heavy** procedure.
  For all (small) decisions in all (informal) contexts? (practical reason)
- Can be seen as a **distrust**. (epistemic & political reason)
- Experts should be **accountable**. Need for **openness** and publicity.
  Some decisions are required to be public by law (e.g. FDA).
  (epistemic & political reason)
- "No need to vote, we all agree after this oral deliberation"
  Precisely not!

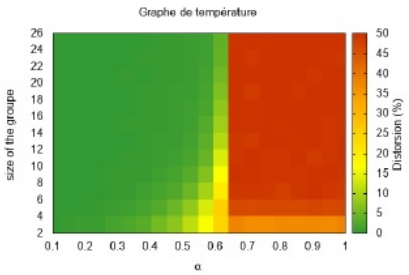
Phase space study



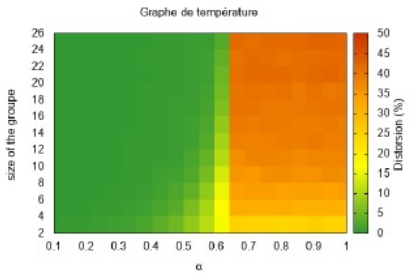
(a) croissant, tour=1



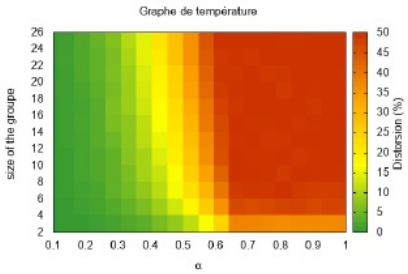
(b) random, tour=1



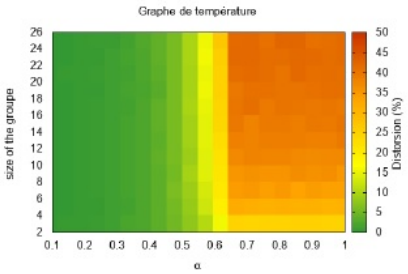
(c) Epist1, tour=1



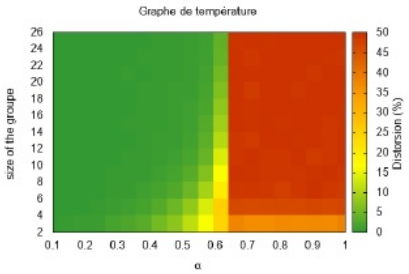
(d) Epist2, tour=1



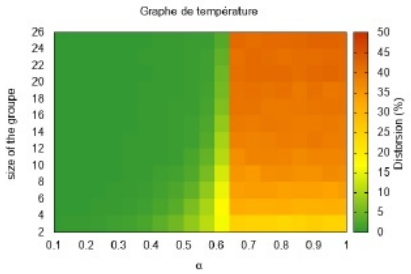
(f) croissant, tour=2



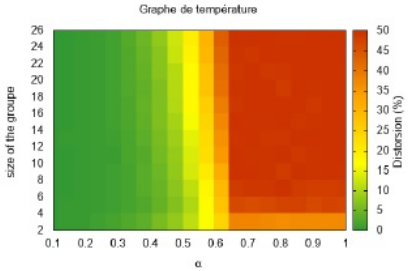
(g) random, tour=2



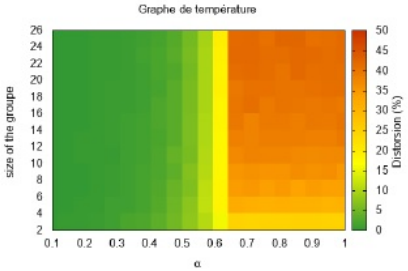
(h) Epist1, tour=2



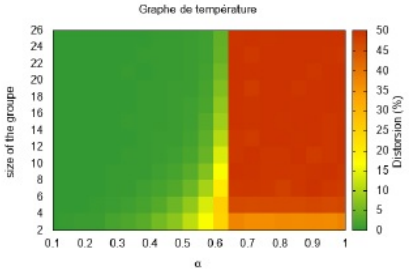
(i) Epist2, tour=2



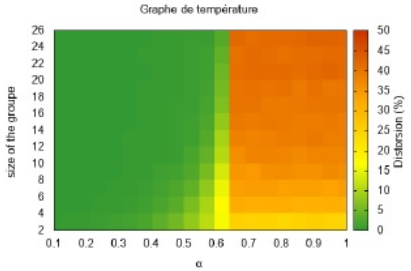
(k) croissant, tour=3



(l) random, tour=3



(m) Epist1, tour=3



(n) Epist2, tour=3

Misrepresentation – empirical aspects

- **Asch's experiment (1951):**
  - an easy epistemic task
  - when judging individually, agents give the right answer at $> 99\%$.
  - after one agent (an actor) has given the wrong answer, this can drop at 68%!
- When in a panel of three, **American judges** often conform. Sunstein (2005, *Why Societies Need Dissent*, Harvard UP, chap. 8)
- In **FDA scientific expert committees**, switching from a sequential vote to a simultaneous vote decreased the proportion of unanimous votes. (Urfalino and Costa 2015, "Secret-public voting in FDA advisory committees", in J. Elster (ed.) *Secrecy and Publicity in Votes and Debates*, CUP.)