Voting Not as Usual

Using a Human Based Genetic Algorithm
as a Base of a Democratic Decision Making System

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The origin of the problem

"everybody"
- the citizens
- the members of a society
- the managers of a socie[ty]
- The representatives

collaborative democracy
- e Democracy
- voting theory
- Multi Crietrio Decision Making

given a question
- how to find an answer to which we "all" agree
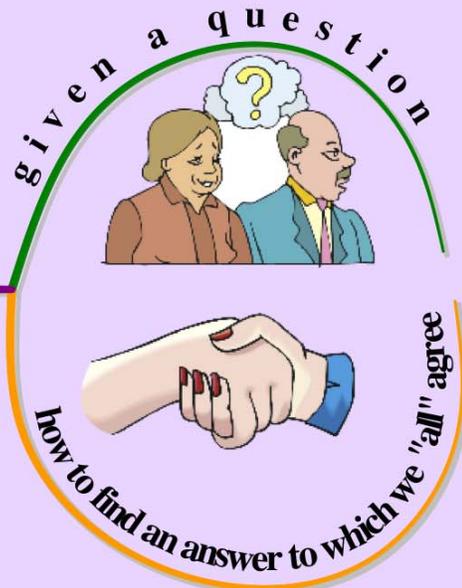
- how should the democracy of the 21st century look like?
- how should we organise (a) society?

Voting as Usual

Divisions Created

before
- proposers
- voters

after
- majority
- minority

how the power that be write the proposals
- everybody votes
- the proposal that has more votes is implemented
  - RULES

different algorithms
- ...
- ...
- ...
- ...
- ...
- ...

Voting Theory

Assumptions
- we know what are the possibilities
- we need to convince others that our position is the bes
- all votes are equivalent

how many round
- 1 time
- 2 times

different ways
- 1 preference
- n preferences
- any # of preferences
- ordering the solutions

The Implicit Power

- Who choses the agenda
    - Who poses the question
    - Who choses the timing
    - Who choses the alternative
    - Who choses the voting method

The Implicit Power

Who choses what are the options?

How many options?

Space of Possibilities

A⭐

⭐B

C⭐

Where are the options placed?

Especially in Respect to the Voting Procedure
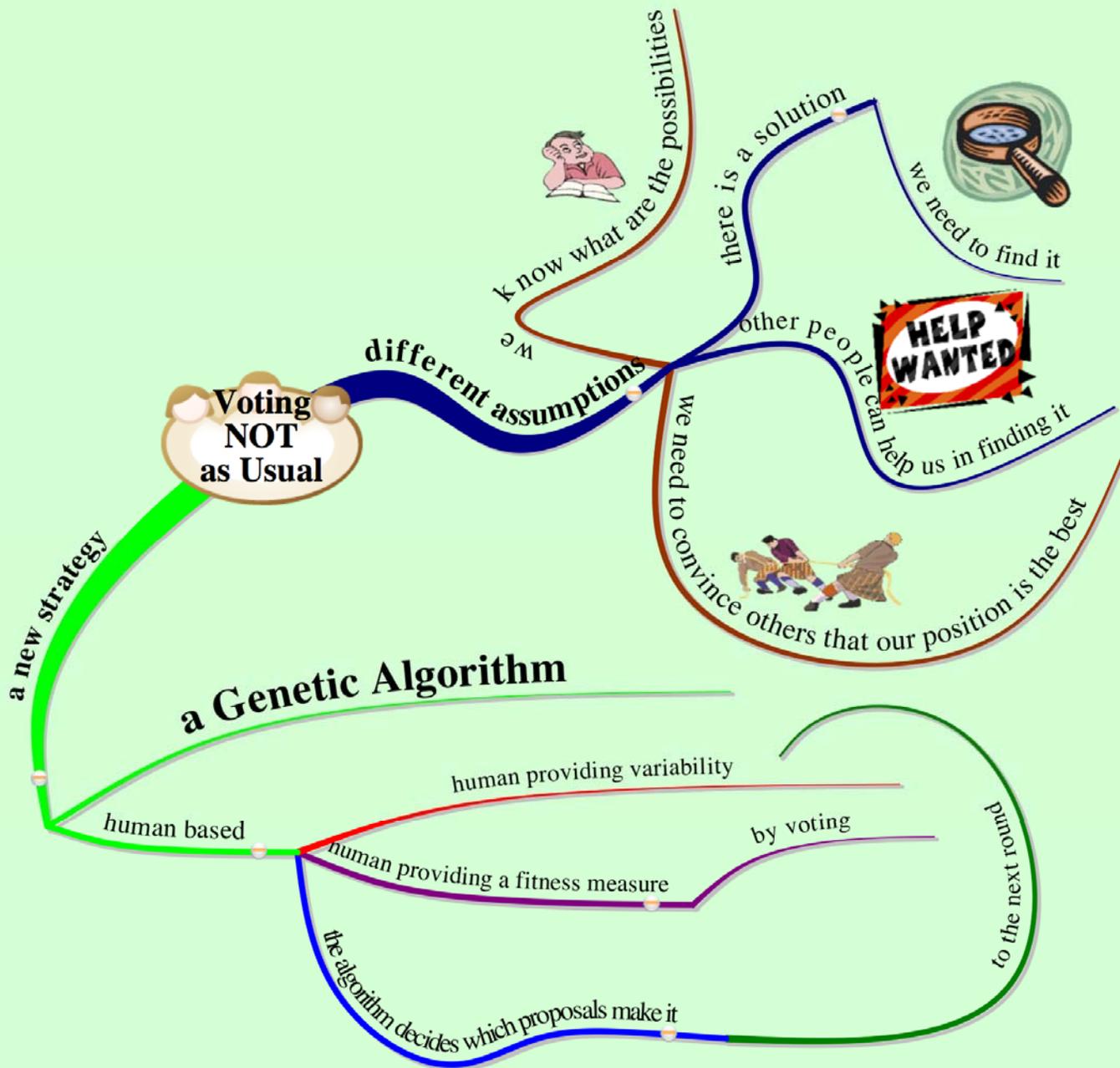
Voting NOT as Usual

different assumptions

- We know what are the possibilities
- there is a solution
  - we need to find it
- other people can help us in finding it
  - **HELP WANTED**
- we need to convince others that our position is the best

a new strategy

a Genetic Algorithm

- human based
  - human providing variability
  - human providing a fitness measure
    - by voting
  - the algorithm decides which proposals make it
    - to the next round

A Human Based Genetic Algorithm

- People provide for variability
- People provide for the fitness measure
- The Algorithm decides what reaches the next generation

People provide for variability

- At each time step every user can suggest a solution to the question
  - Solution are not proposed only by few "proposers"
- After each generation a set of successful solutions are presented. The people are invited to:
  - modify them
    - I would have voted for this too if...
  - integrate them
    - everybody can be a compromiser (trying to find a middle ground)
  - ignore them
  - recover past proposals and modify those as well

People provide for the fitness measure

- Each user votes. How?
  - we want multiple view points
  - we want each user to evaluate each proposed answer
  - we want to retain information
    - not all voters have the same experience or point of view
  - it should be simple to use
- Solution:
  - Each user votes on all the solution he endorses
  - Alternatively each user
    - rates them all
    - orders them

People provide for the fitness measure

- For each answer we now have
  - a list of user that endorse them
    - alternatively: a rating by each user
- We do NOT sum the votes;
  - we do NOT sum the ratings
- We keep each solution's evaluation as a point in a multidimensional space
  - Each user provides a dimension
  - If they endorse, the value in that dimension is "1"
  - If they do not endorse the value is "0"
  - If we used a rating, the rating is the value
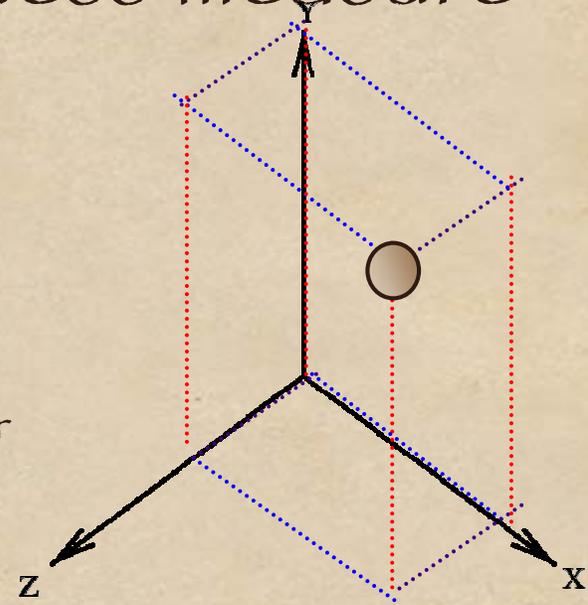
The Algorithm decides
what reaches the next generation

- Which solutions should we keep?
  We could:

  - sum the values on the axis and take the first n

  - multiply the values (get the area below the point) and take the first n

  - OR...

    - eliminate the dominated ones

    - And keep all the remaining; this is called the Pareto Frontier
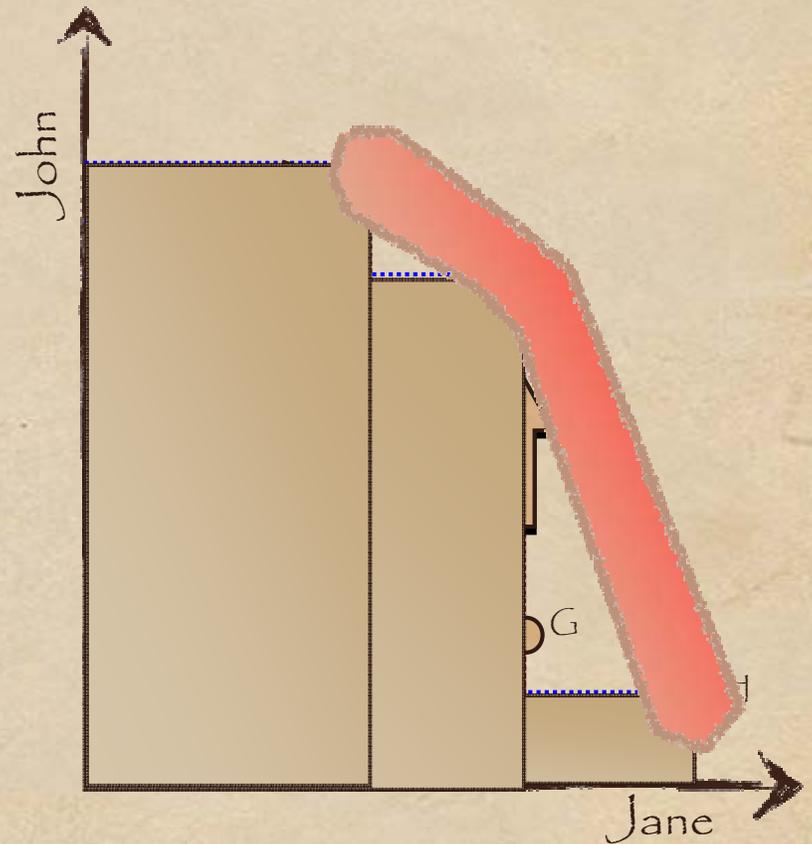
The Algorithm decides
what reaches the next generation

A solution A is dominated by a solution B iff
The Pareto Frontier is the set of all solutions
$B >= A$ in every dimension,
that are not dominated by any other
and there is one dimension where $B > A$

- N users participate and vote on m solutions.

- Each solution is seen as a point in R^n;
  thus we have m points in R^n

  - We eliminate the dominated solutions

  - We keep the Pareto Frontier and feed
    it back to the participants
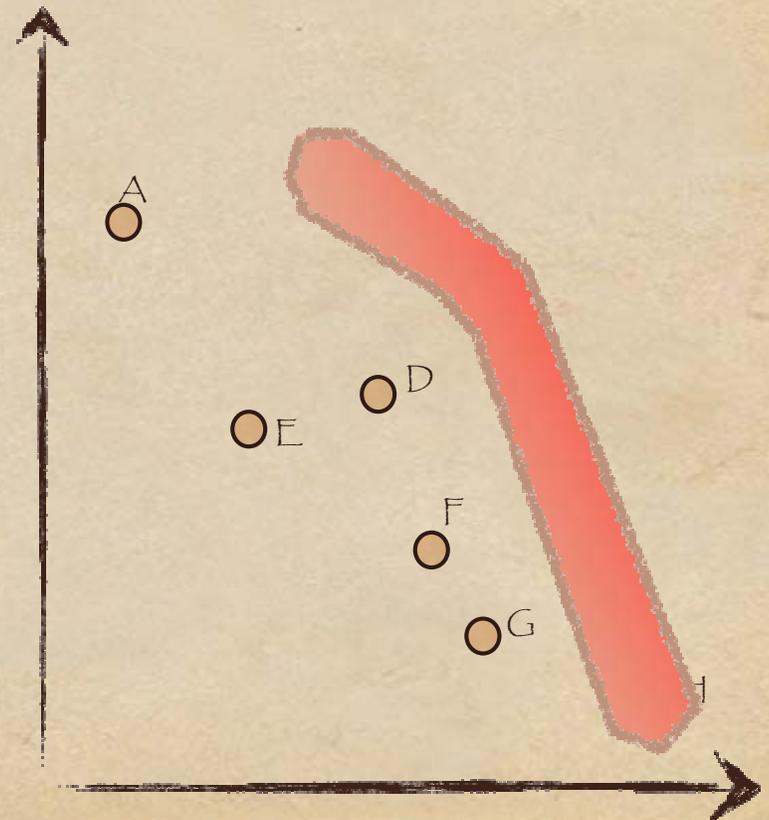
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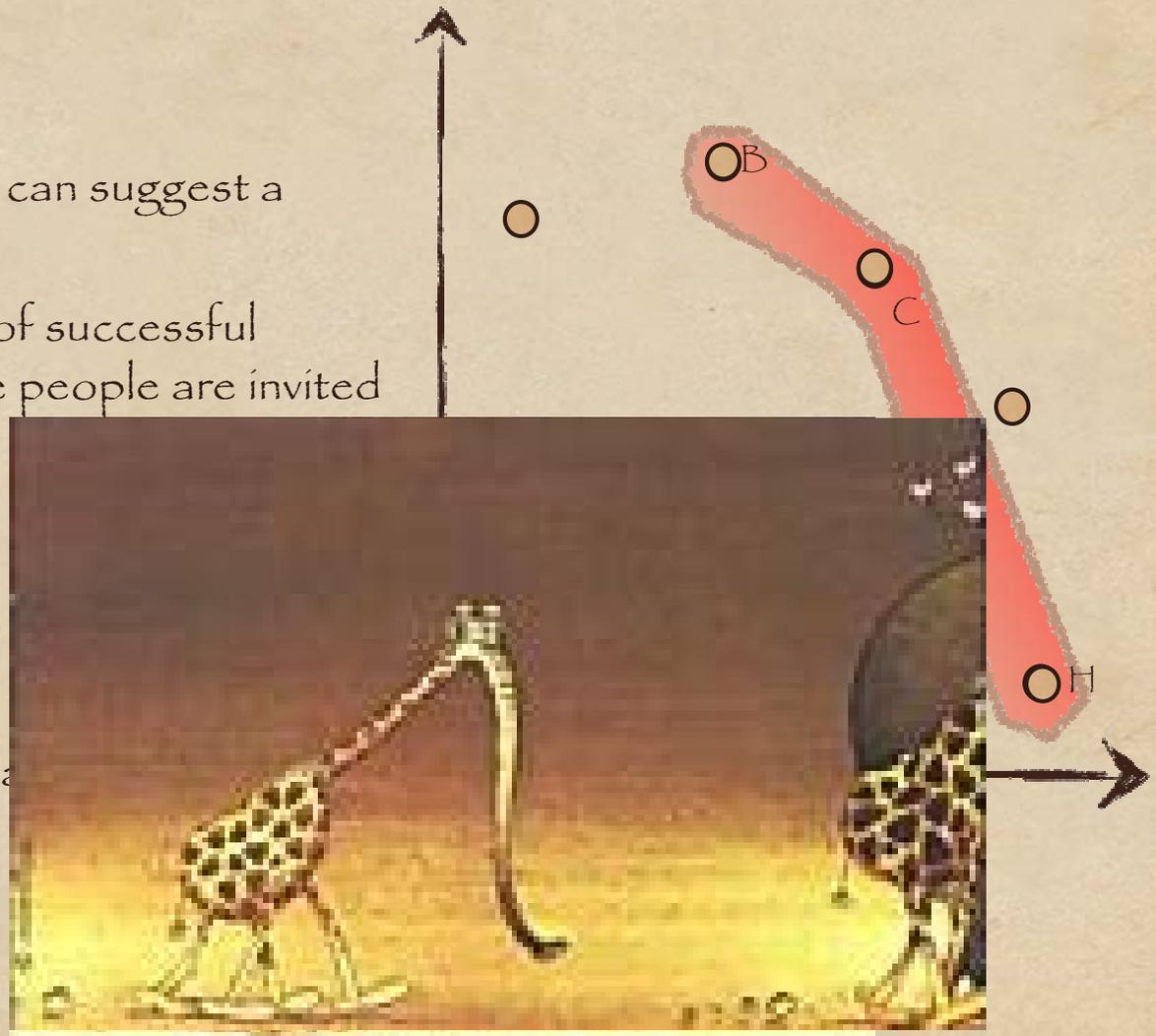
A Human Based Genetic Algorithm

- People provide for variability
- People provide for the fitness measure
- The Pareto Frontier of the solutions is fed back to the participants

When does it end?

- We reach a consensus:
  - a solution is universally endorsed
  - a set of solutions are universally endorsed
- We get stuck
- We get bored

Examples

- A website was set up
  - [Vilfredo Goes To Athens](#)
- Example of question:
  - [Which is the meaning of life?](#)
    - 7 Generations
    - 11 people participated
    - 4 people agreed at the end

Vilfredo about Politics

✤ Which is the best form of government?
✤ What are the different ways in which a citizen can interact with their government through the Internet?
✤ What is the most plausible way for humanity to tackle universal issues that traverse all boundaries?

✤ Suppose there were no copyright laws. How would the world be different?
✤ Which kind of business without copyright?

✤ How can the US improve its healthcare system?
✤ What would be a universally-acceptable solution to the abortion dispute?
✤ Obama has just released the torture memo. What would you suggest him to do?

Vilfredo about Metagovernment

- What would be a good new name for Metascore?
- What's a better name than Metagovernment?
- A slogan for a physical ad about open source governance.

- How might a non-programmer participate in metagovernment?

- Let us write together a political science fiction story

Self Reference:
Vilfredo about Vilfredo

✤ What questions should be added in the FAQ?
✤ What are the most URGENT things to be done on this website?

✤ How to avoid never-ending questions?
✤ What shall we do about proposals that are against the law?
✤ How should we proceed to open up Vilfredo?

✤ How should we refer to this website?
✤ What Domain Name should this Website use?
✤ What aspects of UserVoice.com would be helpful for Vilfredo?

How should we handle the "wall of text" problem?

Right now there is no limit to the size of the answer that users can write. On the one side this is good, as it permit to users to spell out their idea in details, on the other it is a problem, as some users tend to write very long essays, making the participation difficult for everybody.

From a certain point of view the problem is not massive, the more an answer is long the more people that do not understand it might not vote for it, generating a de facto, intrinsic push toward shorter answers.

Yet many people feel a sense of duty to read all answers, and when confronted with too long answers they might simply postpone their voting process. With the result that they risk to fall out from the discussion cycle.

What limit, if any, there should be to the length of the answer that the users are allowed to write?

And how should this limit be imposed?

Should this limit be decided once and for all, or should each person that asks the question decides the limit for that question?

If this is the case, should the questioner be allowed to change this limit later in time?

Sometimes it is possible to impose intrinsic limits, like the one said above. For example making the edit box smaller. And others are possible as well. If you have an idea about a soft limit that we could install, please share that too.

How should we handle the "wall of text" problem?
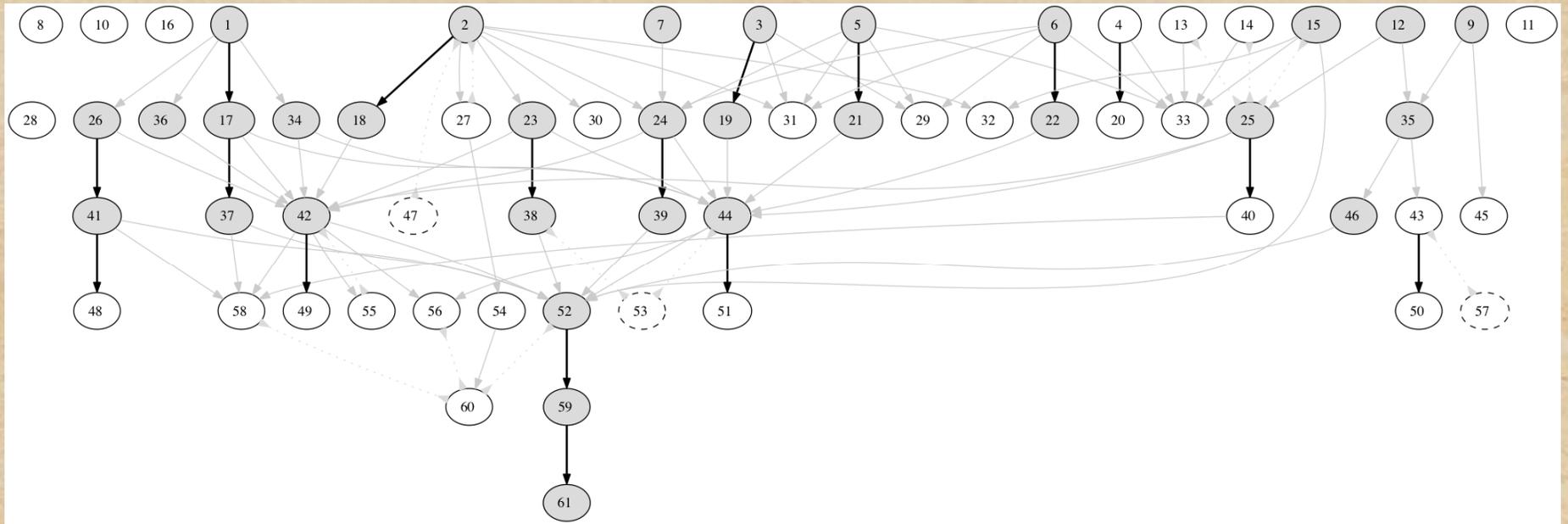
How should we handle the "wall of text" problem?
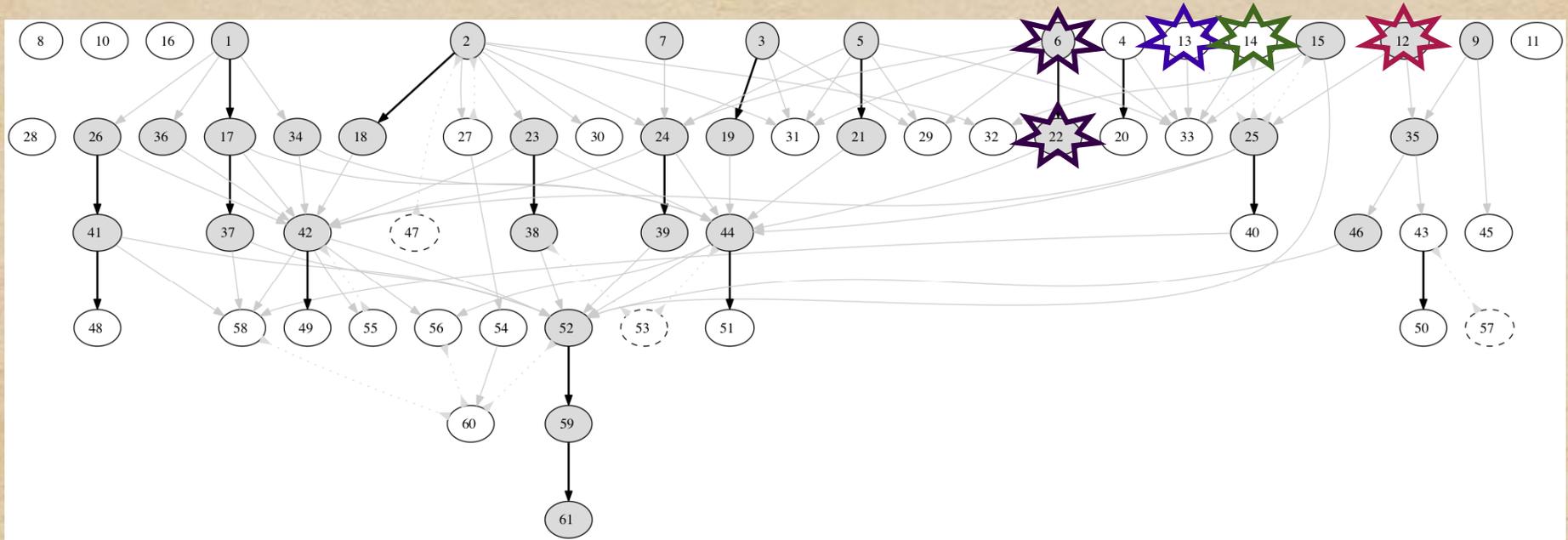
It's fine as it is. No limit should there be on the length of proposals! (12)

The author of a question should decide the length of that proposals accepted when he writes the question. (13)

Each user should have a certain number of points. Points are gained by participating. A normal proposal, of a "standard" size (whatever that is, separately decided) does not cost any point. Longer proposal cost points to be suggested. (6)

The Author of a question should decide the length of the answer to that question. But then at every generation, during the voting phase, he can review this decision to permit longer or shorter proposals in the next generation. (11)

How should we handle the "wall of text" problem?
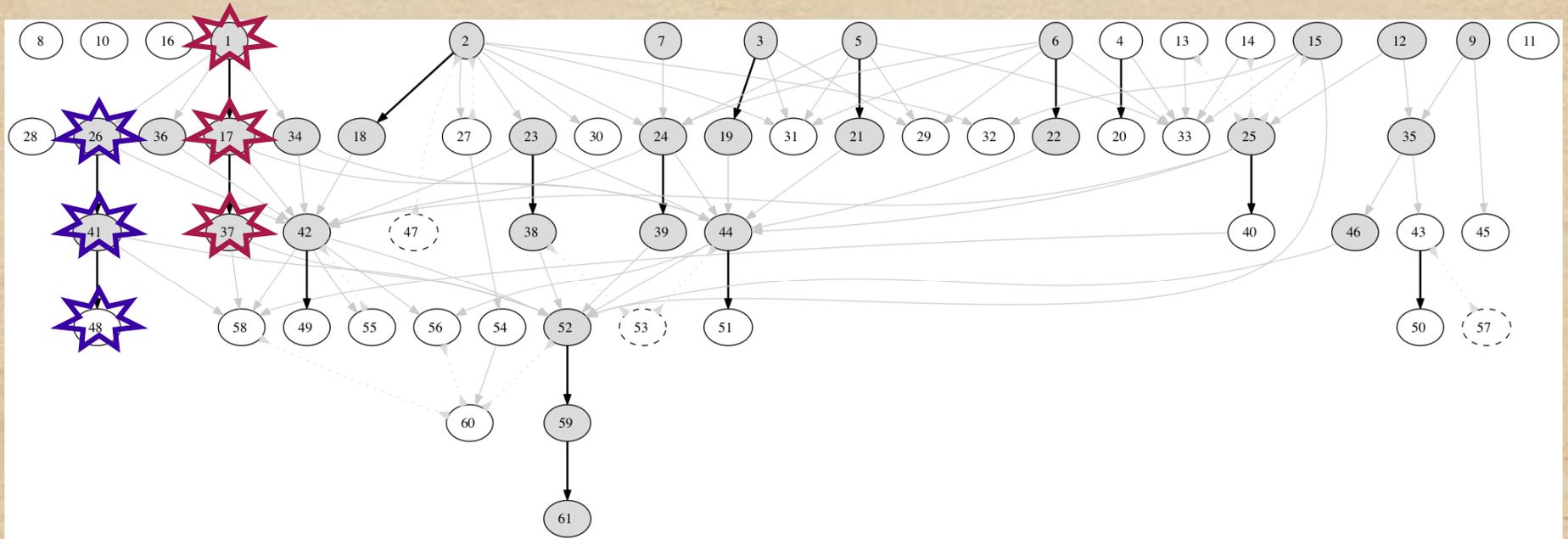
Writing an abstract of the proposal. (1)

An abstract is needed only if the proposal is longer than the abstract LIMIT. (26)

How should we handle the "wall of text" problem?
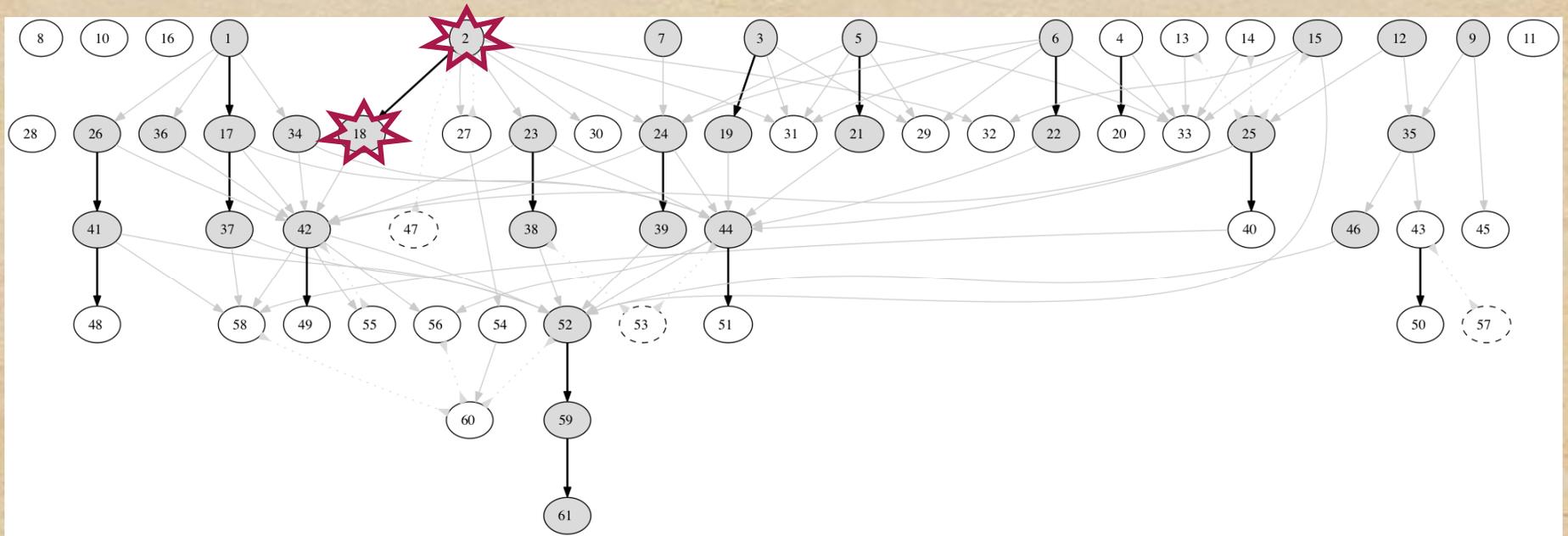
Shorter proposals appear in the first places of a ranking.
There are two new buttons:
   I understand,
   I don't understand.
Negative understanding points sink the proposal in that ranking.

People in Key Positions

Please modify question …
so you would vote for it
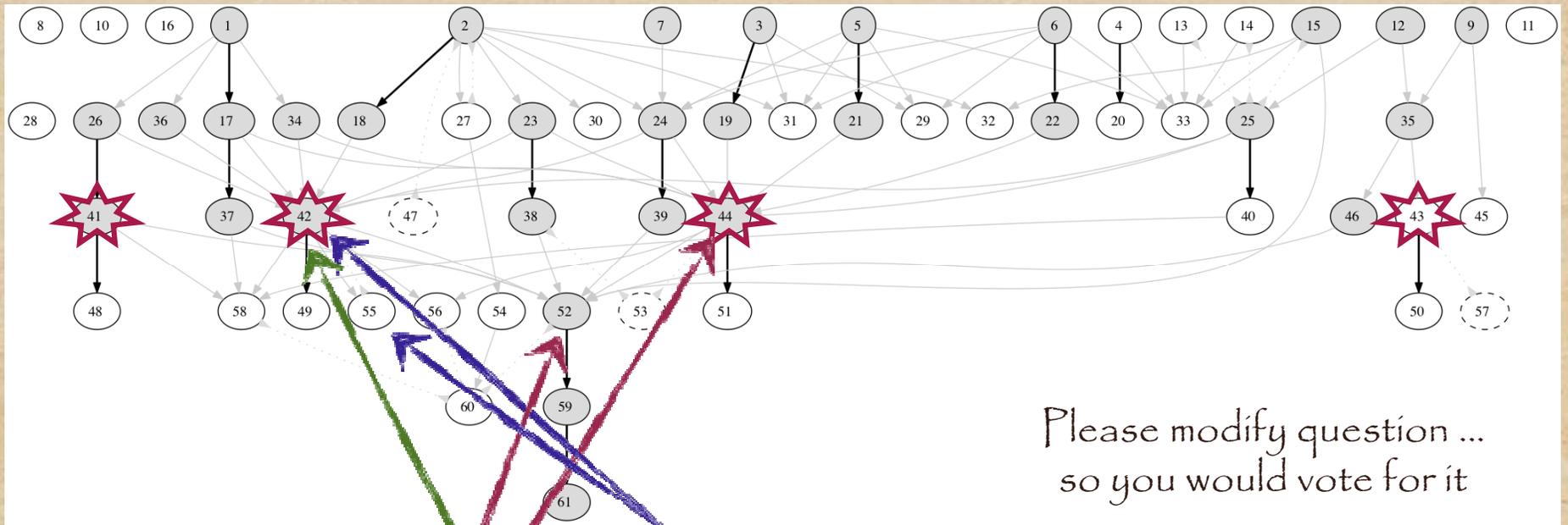
41 Ed Pastore, chrisanderson, giovani, Ford 42 battocchia, vilfredo, Ed Pastore,
chrisanderson, giovani 43 battocchia, Ed Pastore, jb555 44 mbarkhau, battocchia,
chrisanderson, giovani, jb555

How should we handle the "wall of text" problem?

Require abstracts for long articles;

calculate a complex score of the proposal body:

- give visual feedback of that score;

- and present proposals in order of lowest-score first.
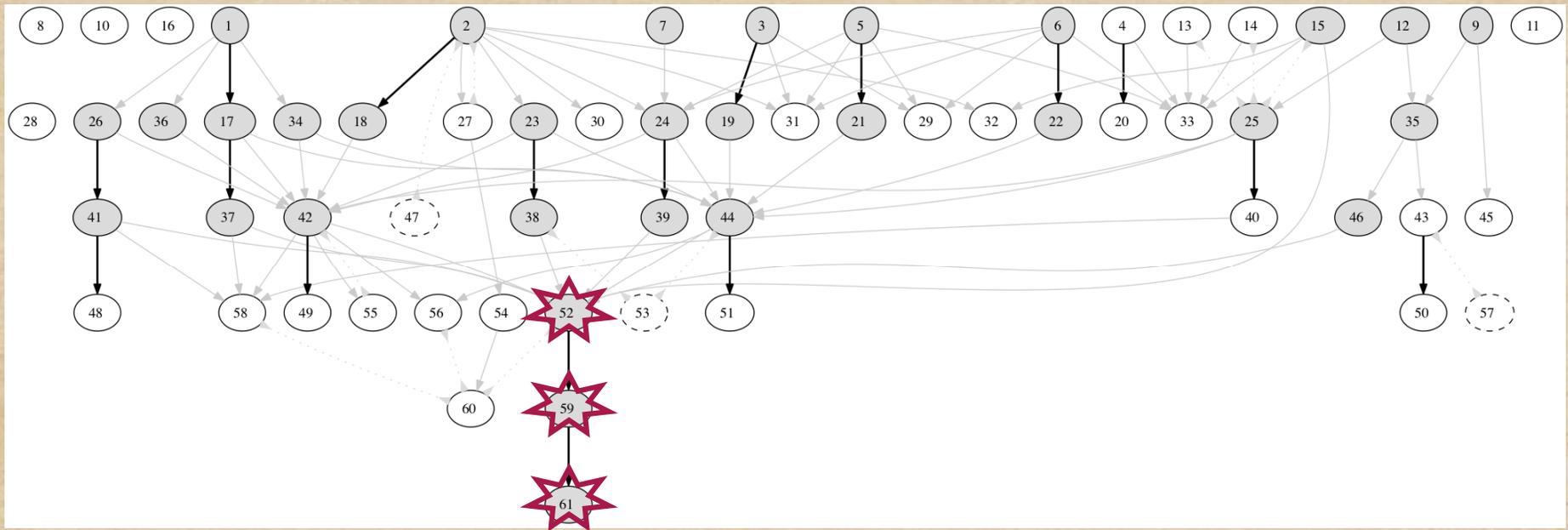
1. Proposals longer than 1,000 characters require an abstract. Abstracts are hard-limited to 500 characters.
2. Give visual feedback about quality of writing of the proposal body, perhaps in the form of a bar across to top of the input box which contains a gradation from green to red. As the difficulty score of the input goes up, the bar fills up (or a slider moves) toward the red side. Also, the number score is shown. Additionally as the score goes up, more and more text warnings/FAQs start to appear (using CSS visibility), advising against length/complexity and giving tips on how to write more concisely. Metrics for the difficulty score could include:
- SMOG scores
- length of proposal - weighted heavily
- Number of other proposals by same author on same question (ie, a power law)
- Possibly "readability-votes" by other users
- Possibly others (though note SMOG is pretty inclusive. See source.)
3. Proposals are presented in order of their difficulty score. So the simpler your writing, the more likely your proposal is to appear at the top. This eliminates the need to build a karma system right away, while still providing a strong incentive

Variation on the theme

Variation on the theme

- Anonymity of proposers
  - total
  - temporal
  - absent

Variations: The wall of text problem

- ## How long can proposes be?
  - no limit
  - Strict Limit
  - Who asks the question decides

Variation on the theme

- Who can write a proposal?
  - everybody
  - some people. How do you chose them?
- Who can vote on a proposal?
  - everybody
  - some people
  - only the people who did not propose
  - a sample of the population
- Can new people join in?

Relation between the technology and the emerging society

?

Results

- It is easier to reach a consensus if the question is "important"
- The algorithm is fast
- Yet, sometimes no consensus can be reached
- It is easy for people to get bored

More Results

- Each User has Veto power
- Each User is present in the Pareto Front
- The Pareto Front Represents everybody
- Sometime different group just will not merge
  - Each group then finds its best representative proposal

More Results

- Each User can write one proposal in the pareto front (by voting only their proposal)
  - Social constraint stops them
- The Pareto Front does not mean the best proposals

Objective versus Subjective Pareto Frontier

- No points dominates any other, thus the pareto front is {A, E, C, G}

- E dominates A;

- C dominates G;

- thus the pareto front is {E, C}

- The pareto front of a group of people whose values make them evaluate proposals according to a line $Y=aX$ with $a>0$, will be a subset of the pareto front according to the general values

A>E>C>G

E>C>A>G

speed

G>E>A

G>C>E>A

Economic
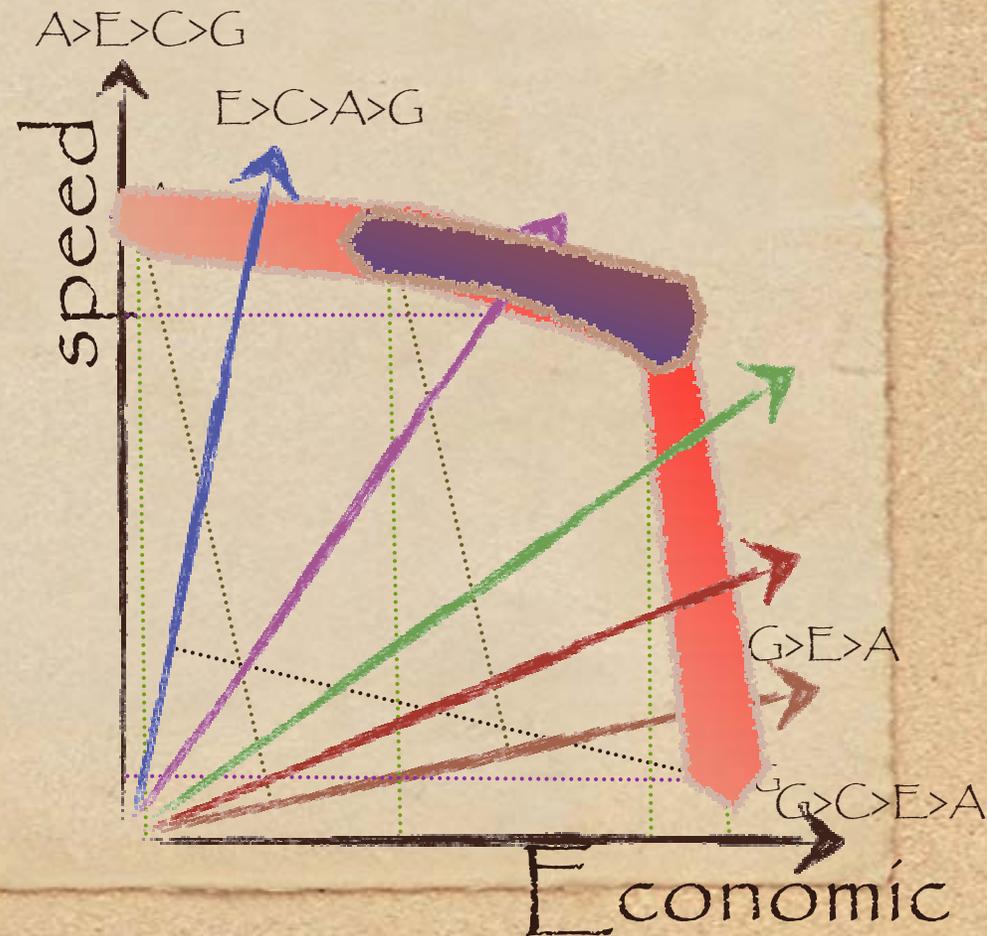
Objective versus Subjective Pareto Frontier

- Assumptions:

- People don't make errors in evaluating proposals

- Values according to different people are fairly consistent; what differs are the weight given to the various values

- Assumptions we do not make:

  - No A priori knowledge is needed over the values involved. We do not even need to know how many they are.

  - If someone seem to have radically different values, this can often be explained by adding values to the model
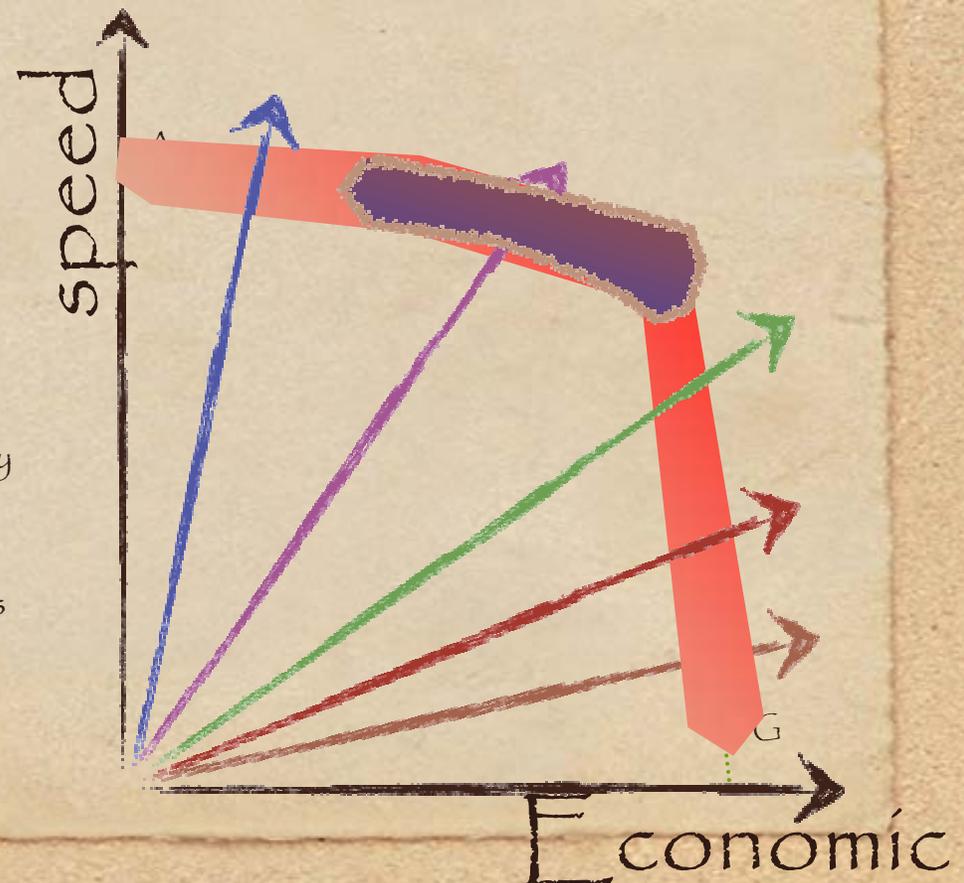
future work

- Working on the website
- Scaling problems:
    - Local Distributed System
- Checking automatically people that vote in a random way

People involved

- The Metagovernment Group
- Chris Anderson
- Giovani Spagnolo
- Luis Paquete
- Derek Paterson