

interfluidity

**Engineering**



**Economic Security**

*a presentation*

Silicon Valley Ethereum Meetup

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# **part 1: motivation**

# Secession...


...very ~~popular~~ prominent in Silicon Valley

...but for whom?

...and *why*?





A portrait of Balaji Srinivasan, a man with short dark hair and a light beard, wearing a blue striped shirt and a dark suit jacket. He is looking directly at the camera with a slight smile. The background is a blurred indoor setting.

“Just like the Amish live nearby, peacefully, in the past - imagine a society of Inverse Amish that lives nearby, peacefully, in the future. A place where Google Glass wearers are normal, where self-driving cars and delivery drones aren't restricted by law, and where we can experiment with new technologies *without* causing undue disruption to others... I believe that regulations exist for a reason. And I believe that new technologies will keep coming up against existing rulesets. I don't believe the solution is either to change the rulesets (which, again, exist for a reason) OR to give up on new technology. I think instead we need a third solution: a way to exit”

~ Balaji Srinivasan

A vertical strip on the right side of the image showing a sunset over a body of water. The sun is a bright orange circle on the horizon, and its reflection is visible in the dark water below. The sky is a mix of orange and dark blue.

## Tim Draper's "Six Californias"



## Patri Friedman & Peter Thiel's "Seasteading"





# Secession...

- In Silicon Valley, a yearning of people who perceive themselves as unusually talented and driven, risk-takers likely to succeed unusually if only they were free *to* do stuff, if they could escape restriction
- SV secessionists **not** advocates of actual rebellion, nor remotely unpatriotic, at least in my view.
- SV secessionists seek to “secede within” (or beside for seasteaders), to create a special space
- But techheads, cyberutopians and libertarians don’t hold a monopoly on yearning for internal secession.



# Secession... *for the rest of us!*

- the affluent and secure (and the optimistic young) seek to withdraw to spaces where they can try new things and be unbothered by the regulations and demands of the precarious.
- the precarious seek spaces where they can find *shelter* from what novelist William Dean Howells memorably called the "economic chance-world". (*h/t Jonathan Levy*)
- there is a conflict of interest here, at least over short term
- the "dynamism" that the affluent celebrate, built on risk-taking for vast rewards, is precisely what the precarious seek shelter from!



***Warning!***  
***I favor “big government”\* solutions.***

In particular, I believe something like a  
***universal basic income***  
will be indispensable going forward.

\* not really, since a #UBI *decentralizes* the direction of real resources.





***Nevertheless, in the United States,  
we have a tradition under which  
(partially) private-sector actors  
used to provide some shelter from  
the very frequent storms  
of “dynamic capitalism”.***



***Unfortunately,  
these were never entirely adequate,  
and all are now weakened  
or compromised.***

# Risk mitigators...

- **Commercial**

- Mainstream finance

- Savings banks

Limited in scope + extent, corrupt, predatory, fragile, explosive.

- Insurance companies

- The “New Industrial State” (Galbraith, following Perkins)

Sometimes stifling. Exclusive. Dead & probably not coming back.

- **Hierarchical Aid**

Humiliating, degrading, corrupt, controlling.

- Private charities

Resisted (often not accepted).

- Public welfare and social services

- **Reciprocal Aid**

Sometimes stifling. Weakened and disintegrating.

- Friends, family, informal coethnics

- Fraternal organizations

- Labor unions

- Churches



# Risk mitigators...

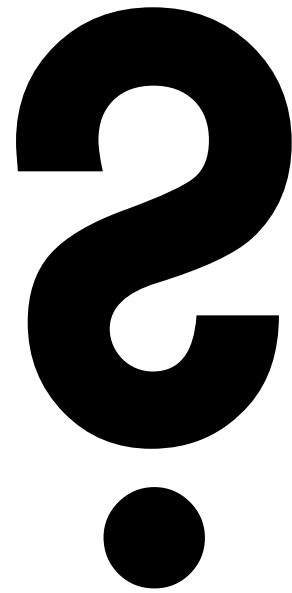
- Fraternal organizations in particular were *remarkably* successful and important, especially from the 1870s through the mid-20th century.
  - *Medical care and health insurance*
  - *Sick benefits*
  - *Life insurance and funeral benefits*
  - *Orphanages, hospitals, retirement homes*
  - *Discretionary benefits, not pre-contracted!*
- Fought (and won, and lost) turf wars with entrenched interests – especially commercial insurers and medical associations.
- Generally met obligations despite informal and “unfunded” financial structure prior to the 1900s.





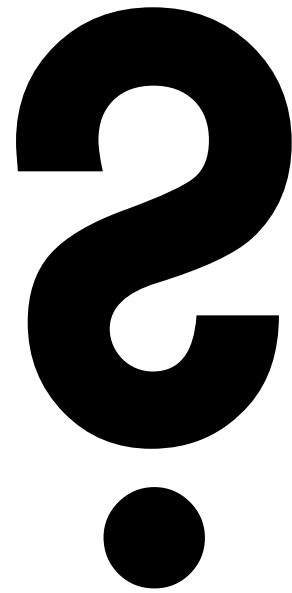
via *The Week*, <http://theweek.com/article/index/256571/elks-shriners-and-masons-how-old-man-frats-got-their-names-and-symbols>





***Can we use  
ethereum + smart contracts + social networks  
to  
reinvent reciprocal aid  
for the  
21st Century?***





***economic security:***  
***IS THERE AN APP FOR THAT?***

# part 2: engineering

Socioeconomic

(some people aren't going to like this)

# What weakens reciprocal aid?

- Things that substitute (oft w/regulatory advantage)
  - middle class affluence
  - welfare state
  - employer benefits / orthogonal group insurance
  - subsidized/mandated private finance
    - guaranteed banks, insurers, pensions+benefits
    - ObamaCare, etc.



# Can cryptocurrency address?

## **No!**

*and to the degree  
substitutes are adequate/superior  
that may be OK*

*(more later on this!)*

# What weakens reciprocal aid?

- Things that reduce capacity to provide
  - economic dynamism + social discohension
    - increased porousness of ethnic culture and geography
    - more mobility but weaker, less stable communities.
    - radio, film, TV, now internet diminish centrality of colocation / congregation / conviviality to living a good life
  - susceptibility to corruption and fraud
  - institutional bias against efficient provision
    - rent-seeking: medical providers kill efficient lodge practice
    - regulatory homogenization: deinstitutionalization



# Can cryptocurrency address?

***Maybe!***





# Smart contracts might help...

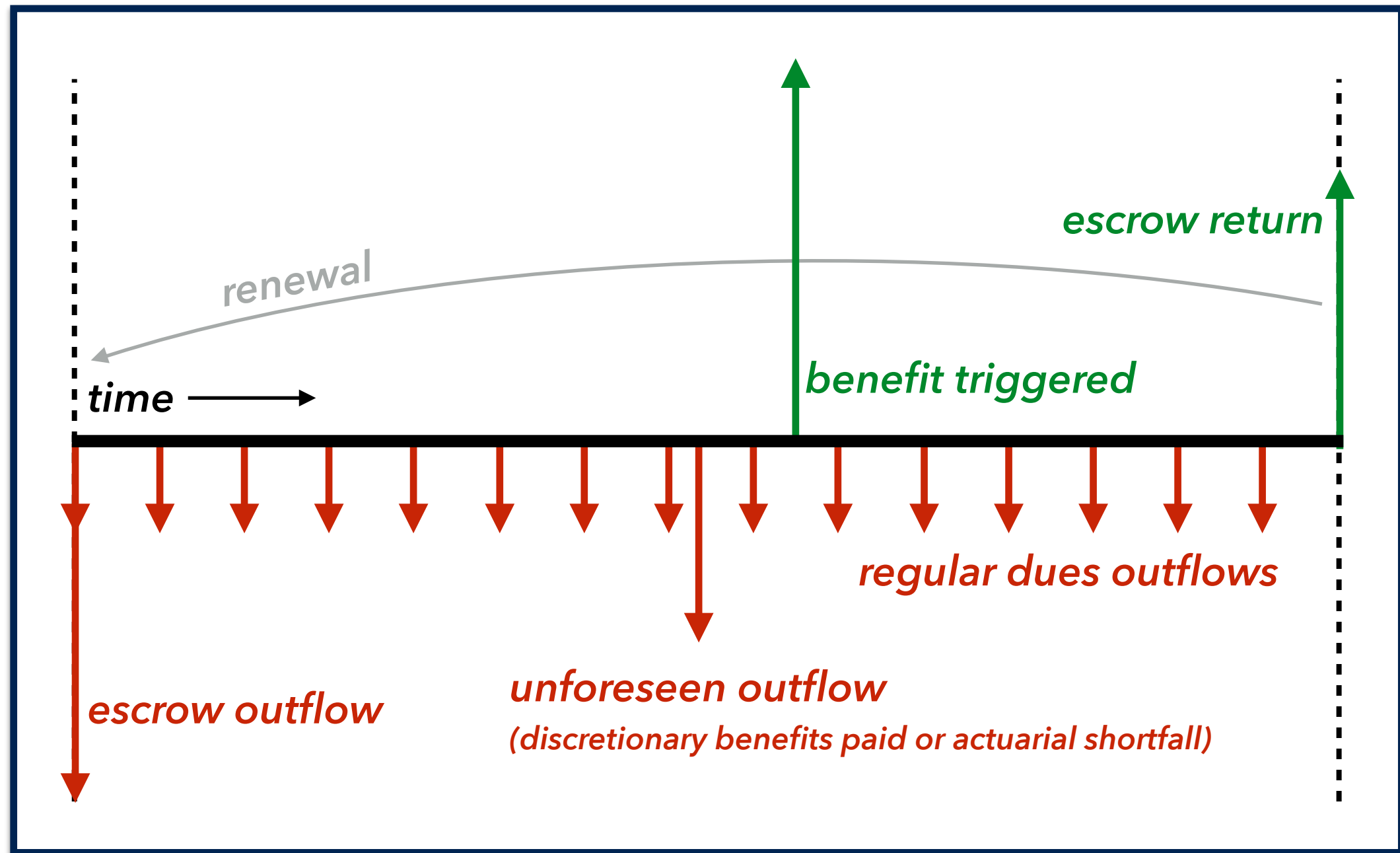
- Overcome diseconomies of scale and speed:
  - offer trustworthiness and immunity to fraud
  - institutional stability despite human attrition

## ...mixed with social networks

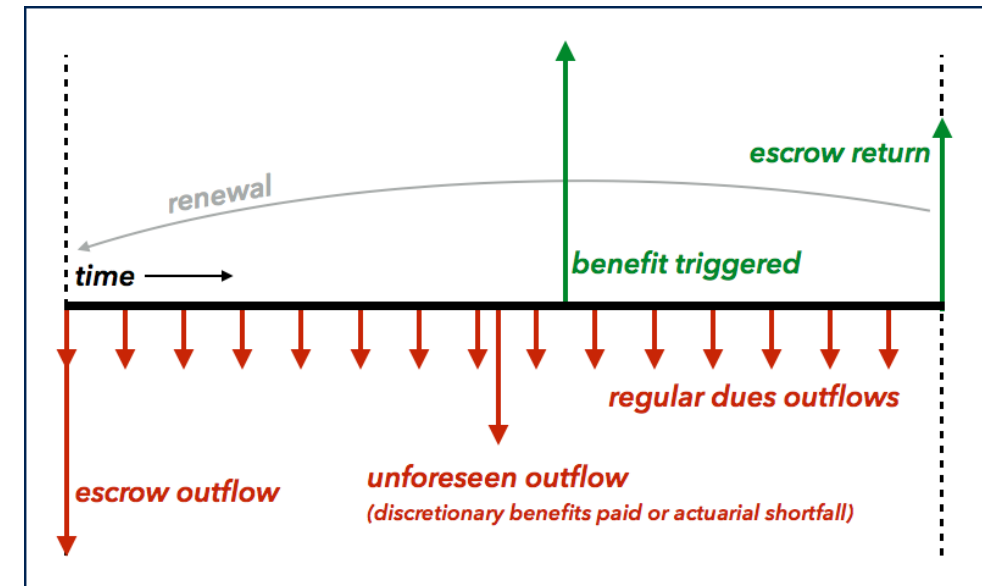
- Recreate (some) social cohesion
  - not Facebook
    - exclusivity, aid, sacrifice, and consequence
    - a (group) marriage not a hook-up
- Retain capacity for discretionary benefits provision
- Improve capacity to coordinate political & market action



# Baseline model...



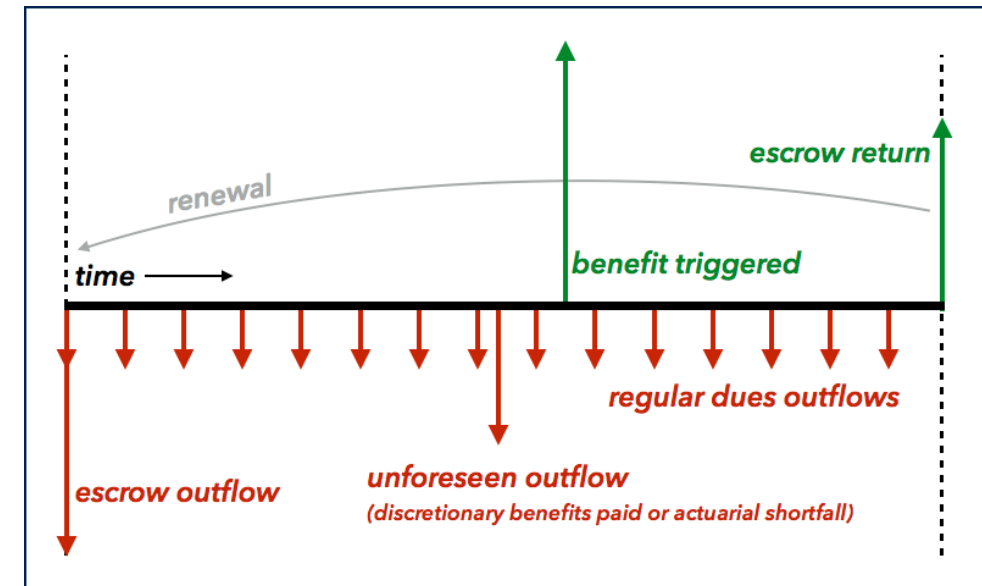
# Baseline model...



- Distributed autonomous mutual insurance co
- Regular premiums (dues) paid in exchange for benefits triggered by adverse events
- Payouts require certification according to procedures coded into smart contract
- Unusual reserve structure:
  - “pay as you go” plus guarantee held in escrow

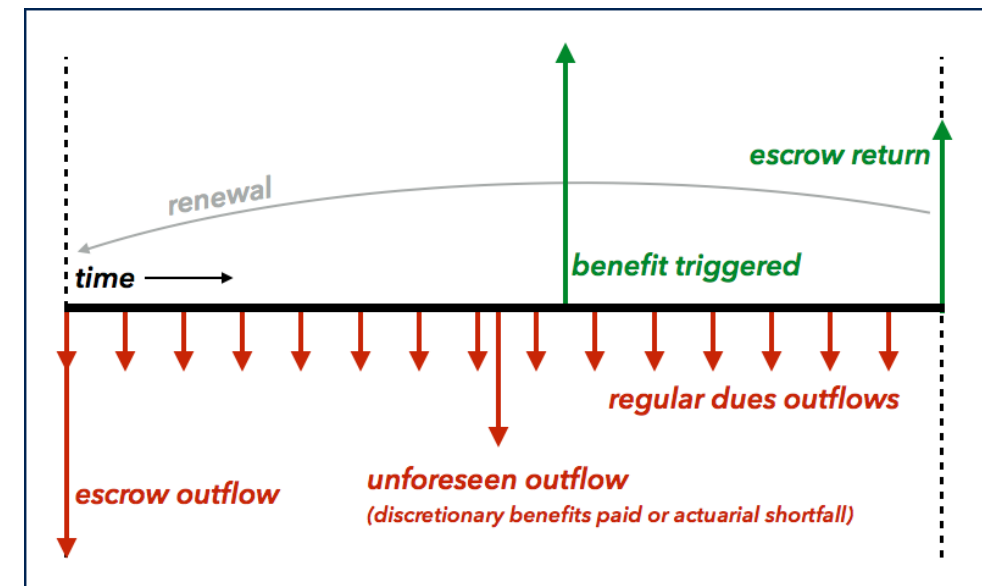


# Baseline model...



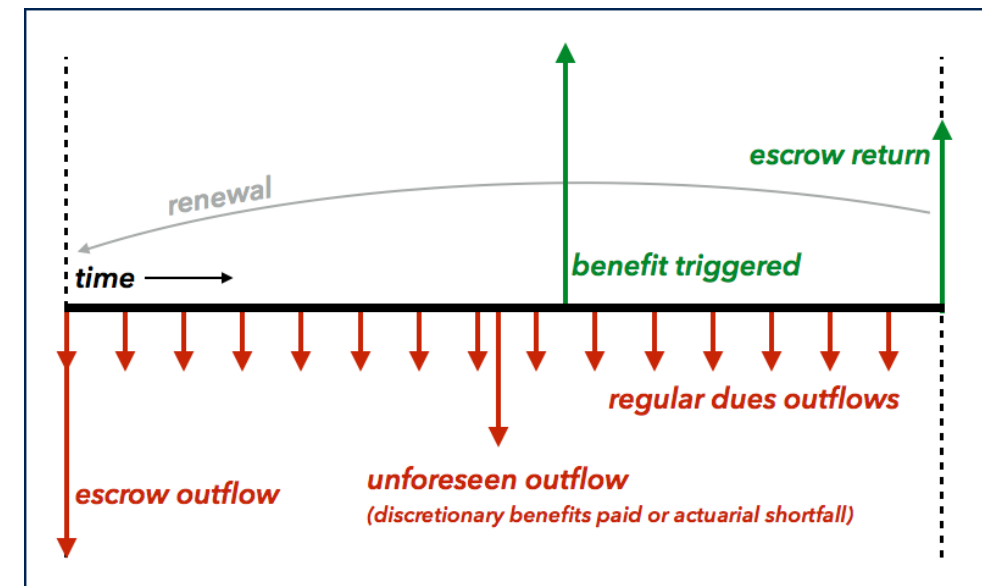
- Aggregate dues and payments (excluding amounts in escrow) reflect funds available for
  - Individual benefits payouts
  - Common and communal purposes
    - Historically, this is where fraternalists added value in surprising ways...
      - lodges and rec halls, sure
      - schools, orphanages, retirement homes
      - innovative medical plans, or hospitals outright
      - retreat centers
      - &c

# Guarantee in escrow



- Guarantee enables organization to levy funds and allocate benefits without hazard of strategic dropouts as information regarding net benefits distribution becomes revealed.
- Nonpayment of dues or levies (with whatever leeway or grace period the contract foresees) triggers forfeiture of guarantee and expulsion.
- Yuck-ish: Where is the "spirit of fraternity?"

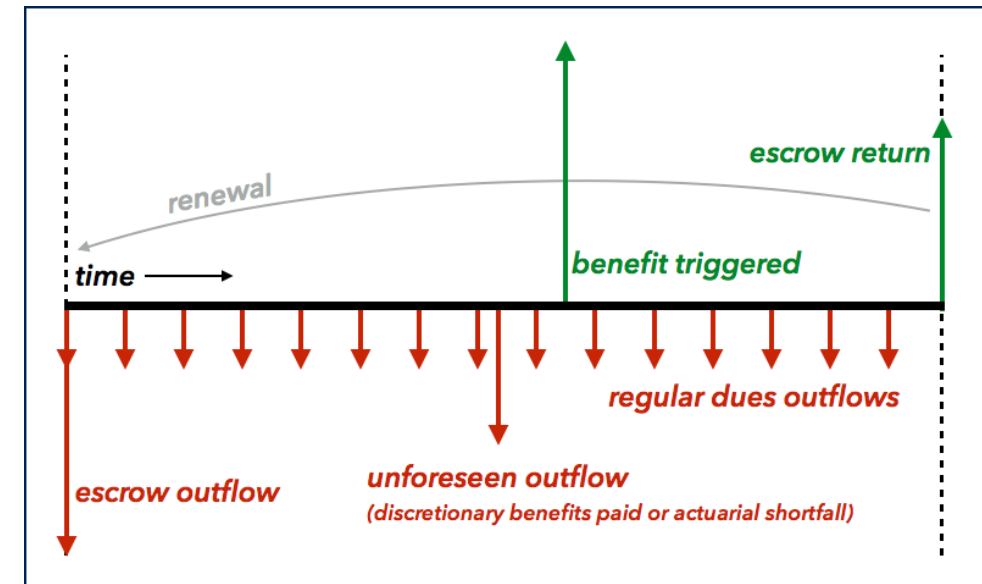
# Guarantee in escrow



- Traditional fraternal societies required no guarantee
  - important! they were geared to working-class people with little savings!
  - but not quite accurate: some fraternal societies financed a kind of guarantee in the form of delayed eligibility for benefits.
- This simple, purely financial, arrangement is thus our "baseline" model!
- Our *social* engineering task is to reduce the size of guarantee necessary to safely support a given package of benefits + discretionary capacity at a given dues level. Ideally to 0.

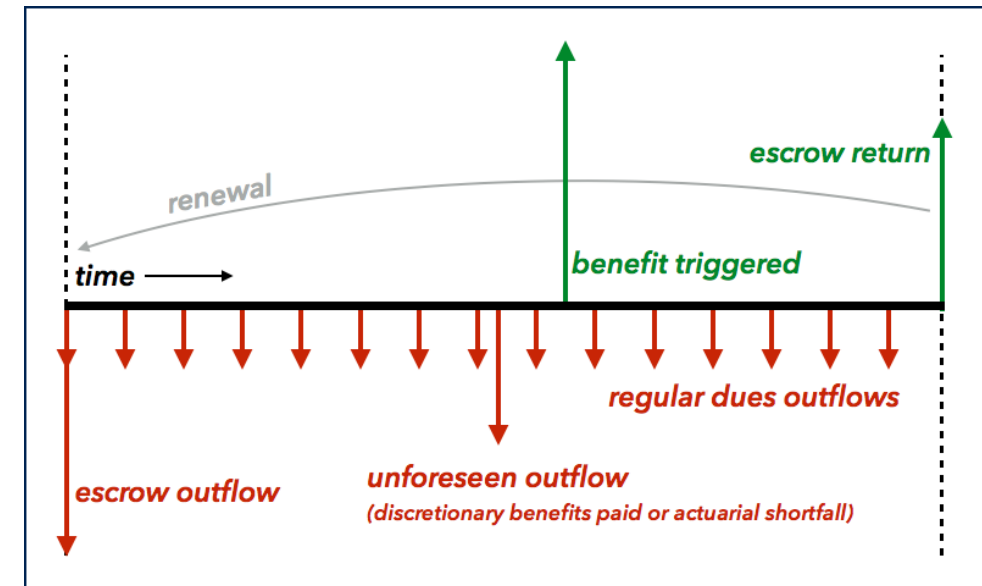


# Strategies to reduce the guarantee



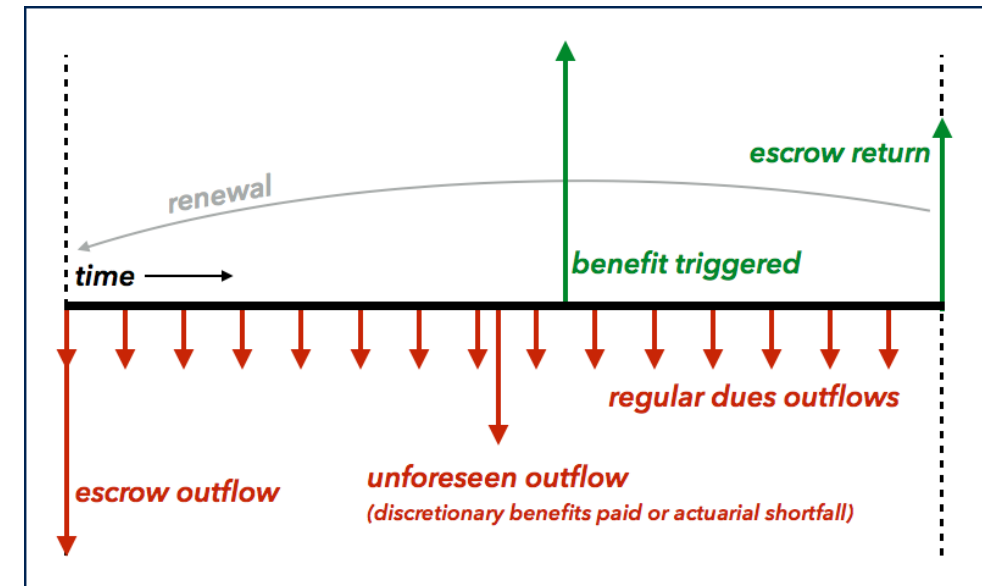
- Compress leftward the distribution of outflows
  - *Selection*
    - Intrusive examination ("medical underwriting")
    - Selection based on easy-to-observe correlates
    - Selection based on endorsement by members
  - *Informal social control*
    - Enforce norms that encourage low-risk behavior, discourage unnecessary claims
  - *Limitations on claims*
    - e.g. exclusion of injuries sustained while drunk, or venereal disease
  - *Fair procedure and careful review of claims*

# Strategies to reduce the guarantee




- Compress leftward the distribution of outflows
  - All of these strategies were pursued by traditional fraternalists
  - In a smart contract setting, all of these strategies except social control can be implemented via procedures of endorsement
  - Ability to impose informal social control depends upon qualities of the social network

# Strategies to reduce the guarantee



- Create nonfinancial benefits that members value
  - Networking, strategic coordination, in-group preference for jobs and opportunities
    - Might be reified as a graded reputation service
      - a historical function of fraternal “degrees”
  - Sense of not-easily-replaced belonging
  - Peer-to-peer nonfinancial support & assistance
  - Conviviality / entertainment
  - Religious & spiritual benefits





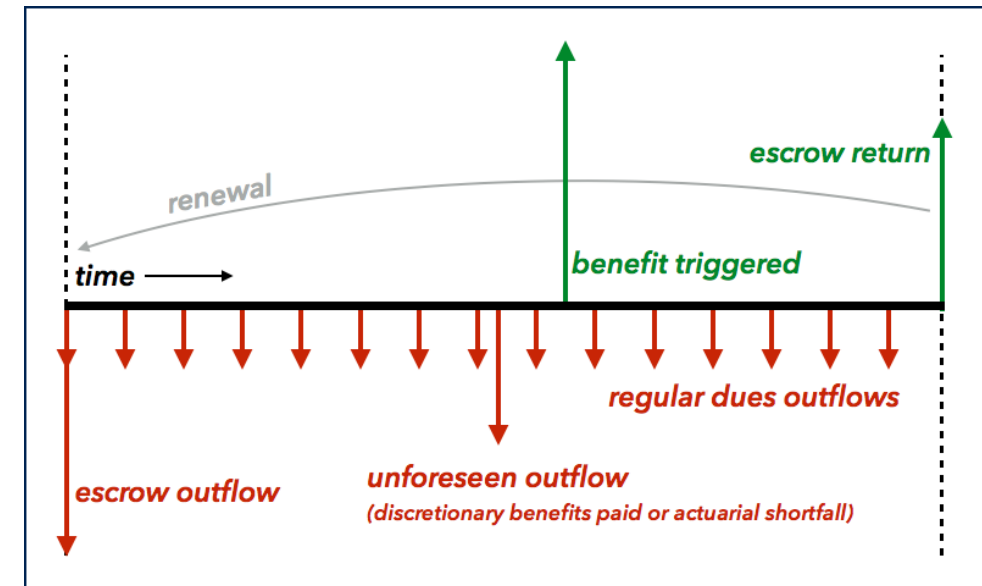
“Someone stepping into a church for High Mass should feel like they’re stepping into a different world. Not because it’s nice, or beautiful, or because we want to impress anybody, but because that’s what it *is*. The liturgy is the tearing open of the veil between Earth and Heaven — torn open by God, not by us...

Most Catholics have no idea what the Mass is truly about (and too few priests challenge them on that). It is truly a supernatural event. And it is a difficult spiritual exercise to always remind ourselves of this fact while drawing absolutely no pride from it. To be handmaidens to the Lord and make the liturgy our fiat.”

~ Pascal Emmanuel Gobry



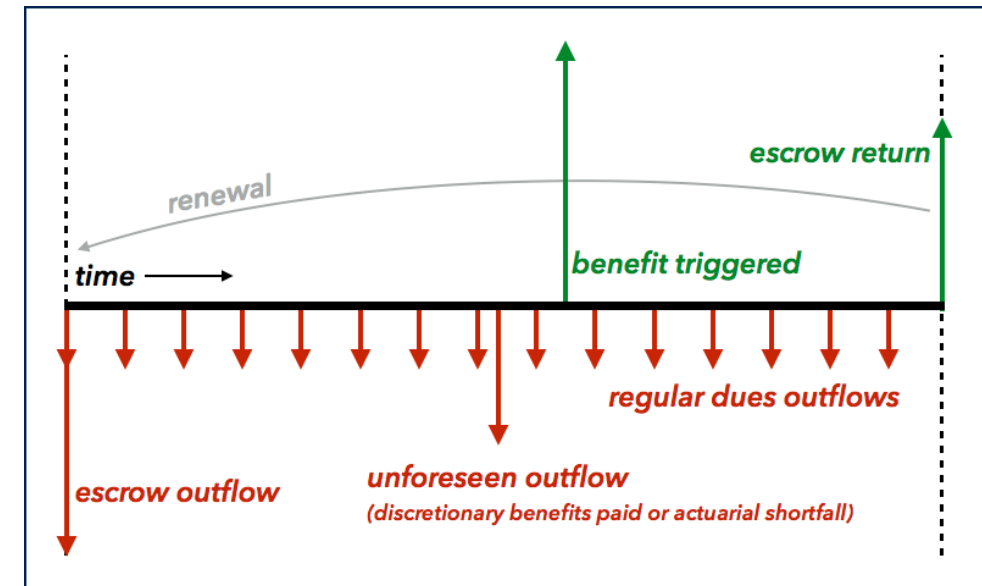
# Strategies to reduce the guarantee



- Liturgy and ritual
  - For people who feel this way, it should be unsurprising that no guarantee is required, nor any contractual relationship whatsoever, to enforce bonds of mutual obligation.
  - Churches have been durable and effective reciprocal aid organizations.
  - Fraternal organizations often invoke secrets, traditions, and mysterious rituals that arguably serve to create a sense of spiritual, even supernatural, community.
  - Can these aspects of human experience be designed into social networks? Should they be? Is this an ethical sort of "engineering"?



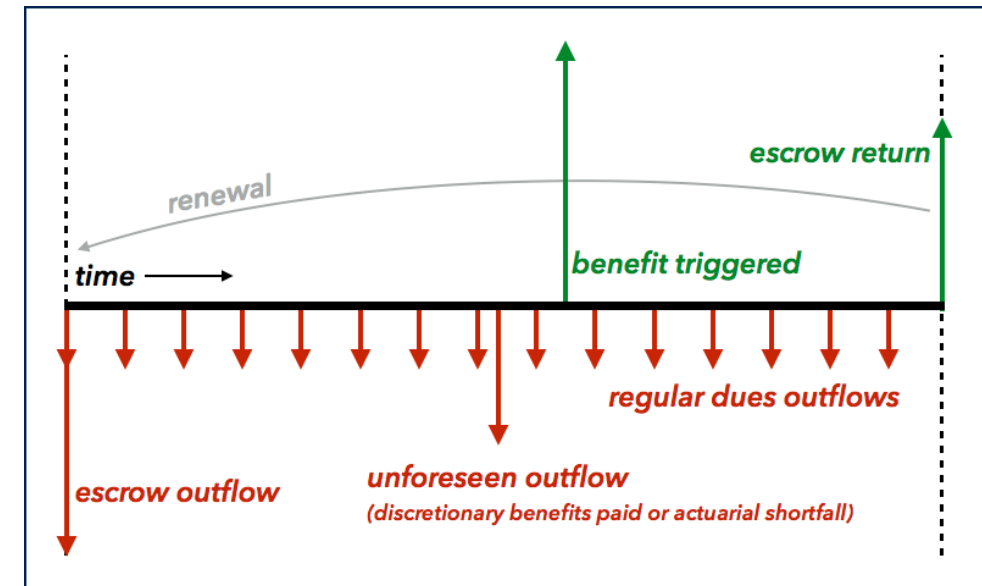
# Strategies to reduce the guarantee



- Federation and reinsurance
  - Historically, reciprocal aid organizations have been federations of small units ("lodges", "locals", "parishes")
  - Existence of large umbrella organization provides nonfinancial benefits to travelers, movers, etc.
  - Financial control at unit level helps ensure confidence in procedures followed, disposition of funds
  - Small scale at unit level facilitates strong social ties

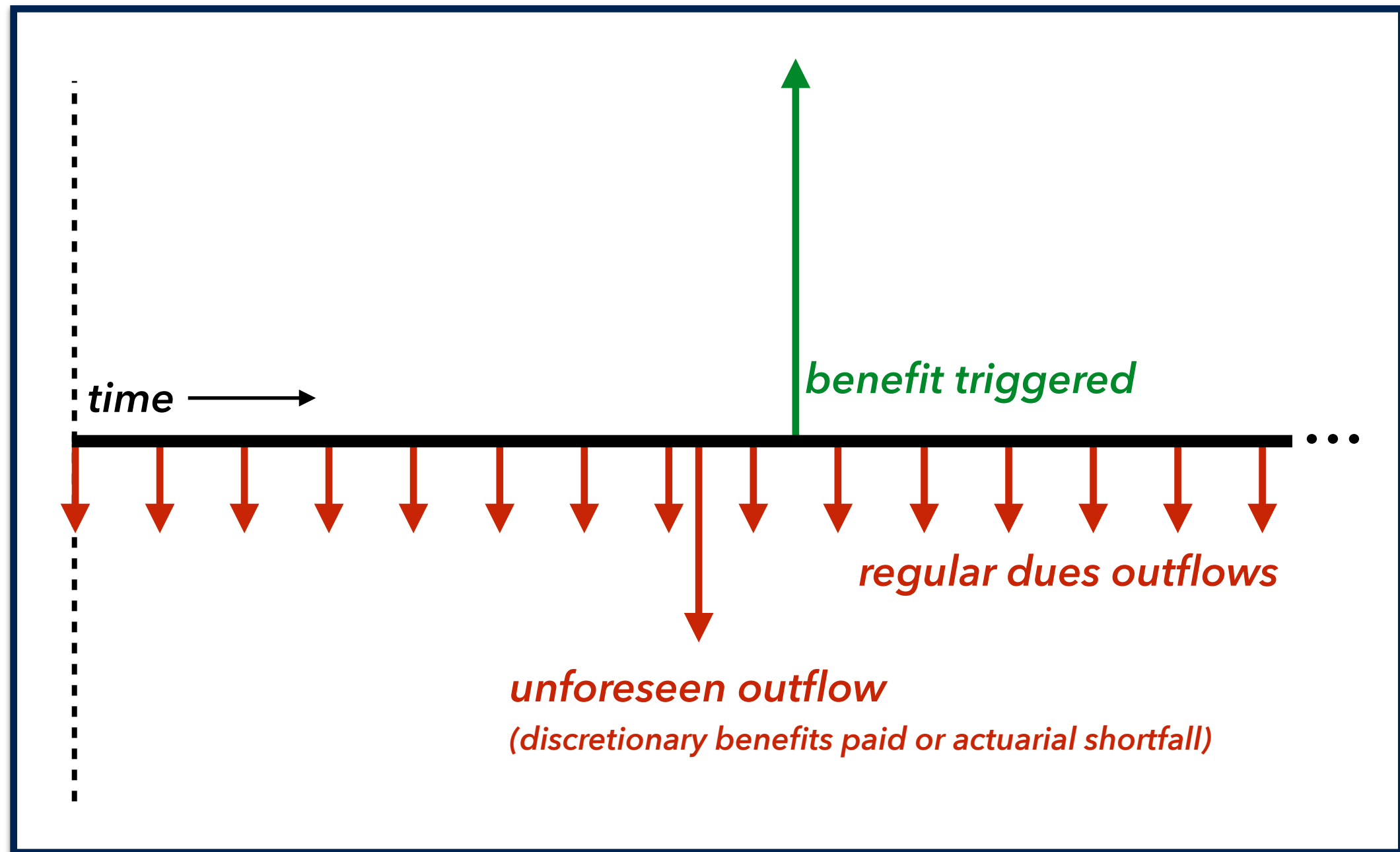


# Strategies to reduce the guarantee

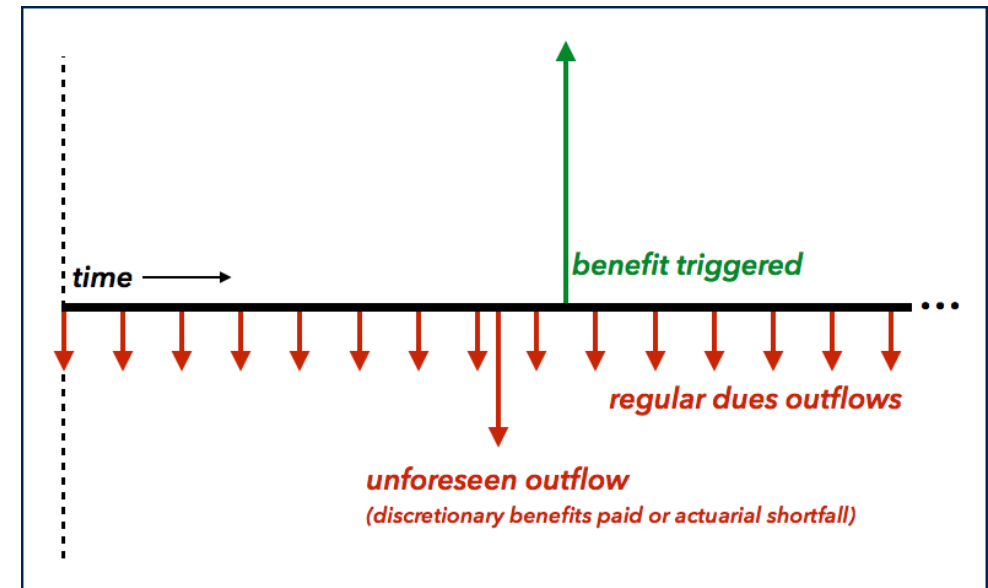


- Federation and reinsurance
  - When unusual shocks hit an individual unit, other units may offer help as discretionary outflows
  - Via some procedure that reflects membership preference (but rarely requires full consensus), compulsory levies may be taken for (sometimes ambitious!) global purposes
  - Federation is very naturally implementable via trees of communicating Ethereum contracts

# "Ideal" model...



# "Ideal" model...



- No guarantee, but few defaults, even with discretionary outflows and shortfalls
- Perpetual rather than term-limited
- Pure "pay-as-you-go" structure, little reserve accumulation.
  - The "reserve in members' pockets"
- Unclear whether this is achievable, or desirable.
- Trade-offs between guarantee size and the intrusiveness / feasibility of social engineering



# Active security

- "The best defense is a good offense."
- Historically, reciprocal aid organizations – especially fraternal organizations and unions – were largely undone by more effective business and political coalitions who altered their institutional context in ways which left them untenable
- It would be possible to design procedures under which memberships adopt positions on matters external to the organization and then certify one another's participation in actions that position
- Strikes by unions are the obvious historical example
- Digital reciprocal aid organizations as described here, capable of inducing financial sacrifice with little complaint, could create strong incentives for its membership to participate strategically in market and political contexts. Tying digitally reified organizational status to active participation could be more effective than traditional exhortations by leadership.

# Conclusion

- It should be possible and straightforward to define decentralized autonomous mutual insurance companies with guarantees in escrow as Ethereum smart contracts.
- It may be possible, though it is much more ambitious, to interweave such a mutual insurance scheme with tight-knit, exclusive, and consequential social networks, recreating once powerful and ubiquitous mutual aid schemes that have largely withered away.

# Thought question

- Is this a good idea, or Jurassic-Park-like folly?
  - Reciprocal aid organizations are not, and usually cannot be, universal. People who are *ex ante* bad risks will need to be selected out, unless very large nonfinancial benefits can offset financial costs to better risks.
  - If history is a guide, people will self-select into groups of people they recognize as “good risks”, people who look like themselves, often along lines of ethnicity, race, class, and gender.
  - There is a *principal of conservation of social control*. Any which way we intend to take responsibility for one another’s economic security, we’ll need to find ways of nudging or coercing people into behaving in ways likely to produce safe outcomes. Historically, fraternals required conformity to a lot of potentially stifling *bourgeois* values, directly as a condition of membership, and informally via social norms. Investing responsibility for economic security in a distant but overtly coercive state may (paradoxically?) be more conducive to freedom than membership in “voluntary” organizations that demand you internalize, or pretend to internalize, their values.



# Bibliography

*Lots of my information and thinking about this stuff derives from the following two books:*

*Freaks of Fortune: The Emerging World of Capitalism and Risk in America* (2012), by Jonathan Levy, ISBN-13 #9780674047488

*From Mutual Aid to the Welfare State: Fraternal Societies and Social Services, 1890-1967* (2000), by David T. Beito, ISBN-13 #9780807848418

*Both are excellent!*