4 Proofs of Construction

- risks of locking funds - complicated: sets of agreements, what do they mean?
- structure - call these constructions(?)

4.1 Channel Funding and Value

- if the channel reached a certain outcome, what would that mean to me?

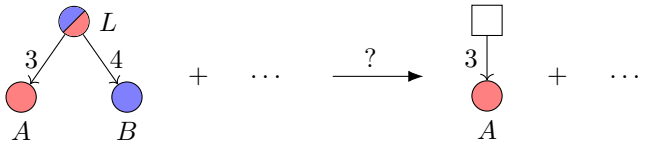

Figure 1

- direct funding - [diagram]

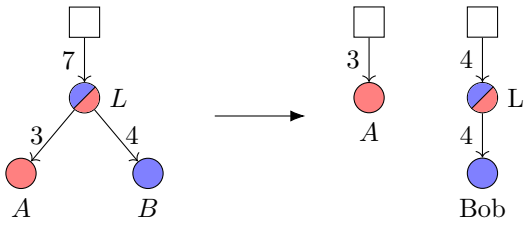

Figure 2

- not outcomes states - system states

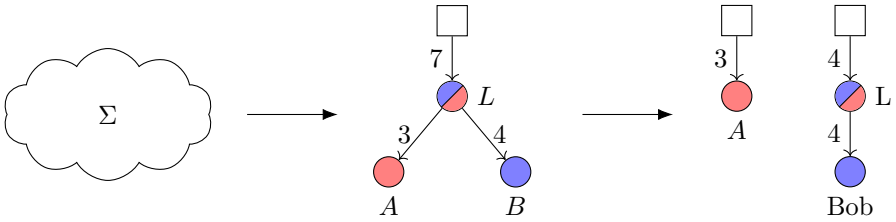

Figure 3

- definition of funding - definition of value

4.2 Constructing

- 1. show that a given network funds a channel - 2. show you can build it step-by-step

second point is important - single channel updates - keep that channels are independent - which allows us to reason about finalizability on a per channel basis

simple rule that you can transition between them if you have equal values

4.3 Unbeatable Strategies

- unbeatable strategy for obtaining a balance on-chain - two parts: finalization and redistribution

- finalization is per channel - channels independent - outcome isn't always determined

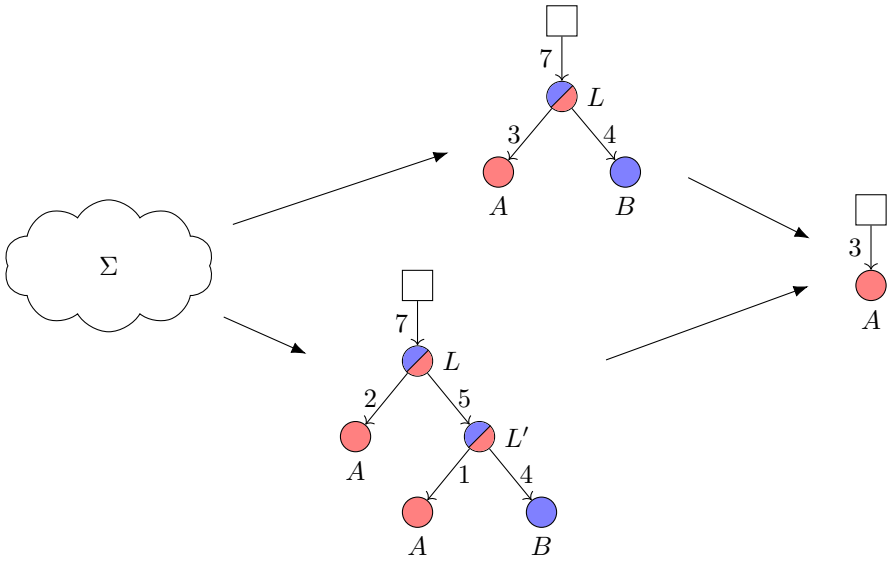

Figure 4: *Cool, huh?*

- more in finalizable outcomes

- redistribution is hard - need to consider all different possibilities - develop tools for the protocol to argue about this - will be done in the turbo / nitro section

- rules

4.4 Finalizable Outcomes

- definition in terms of unbeatable strategy

- example: next mover

- different possibilities - finalized

- universal finalizability - two examples - diagram: FM states

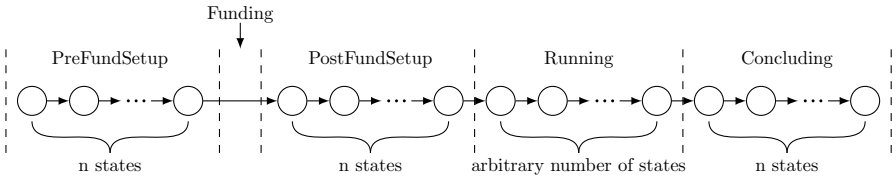

Figure 5: *Cool, huh?*

- enabled outcomes

4.5 Consensus Game

- consensus game if FM application - deals in outcome. accepted outcome, propose a new one - has the property that the only two possible outcomes are A and B

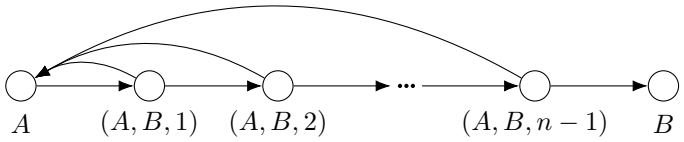

Figure 6: *Cool, huh?*

4.6 Outcomes First

- in practice it is hard to write states - instead we will write outcomes and reason about when you can transition between them

- use special type of channel - consensus game channel

- if I have two network outcomes that differ in the outcome of a single CG channel - then I can find a sequence of single-update network states that interpolate between them

- write down a sequence of outcomes - update one channel at a time - and have the same value to all participants

- the start and conclude states are also finalizable