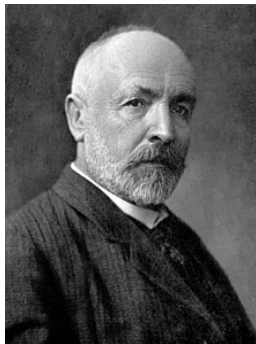


## A set-theoretic view of Ethereum coteries



mike neuder – ethereum foundation  
LidoConnect – November 16, 2023

# Outline

- Notation
- Four “base” cases
- Four “extended” cases
- Four “specific” cases



# Notation

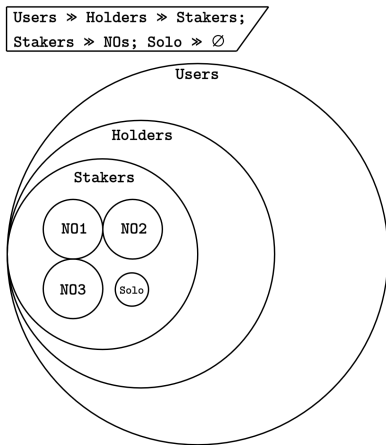
The most boring slide of this talk...



- Given the sets  $A$  &  $B$ ,  $A \gg B \implies$  “ $A$  is much larger than  $B$ .”
- Given the sets  $A$  &  $B$ ,  $A \geq B \implies$  “ $A$  is larger than or equal to  $B$ .”
- Given the sets  $A$  &  $B$ ,  $A > B \implies$  “ $A$  is larger than  $B$ .”
- Given the sets  $A$  &  $B$ ,  $A \approx B \implies$  “ $A$  is approximately the same size as  $B$ .”
- $\forall \implies$  “for all” (standard notation).
- $\in \implies$  “in” (standard notation).

# Four “base” cases.

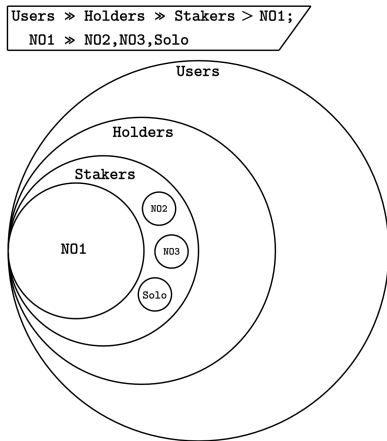
## Case 1: *balanced*



- “Good decentralization at every layer.”

# Four “base” cases.

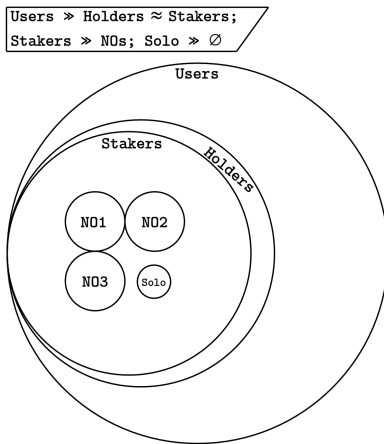
Case 2: *winner-take-most staking market.*



- “One node operator has an out-sized influence, but a smaller portion of the ETH supply is staked.”

## Four “base” cases.

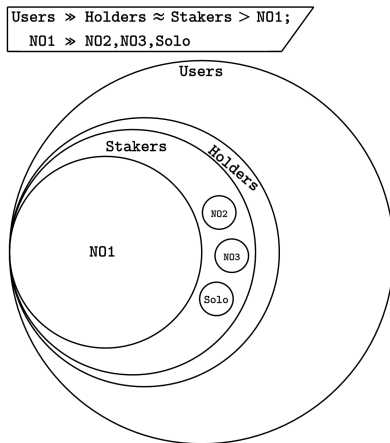
*Case 3: most of supply staked over many operators.*



- “Many medium-sized node operators, but a large majority of the ETH supply is staked.”

## Four “base” cases.

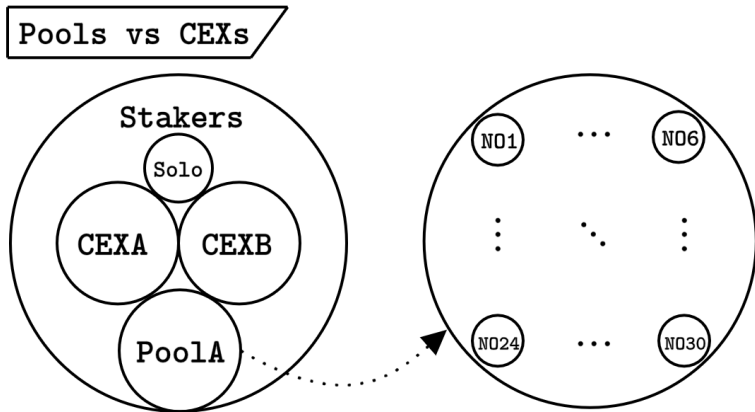
Case 4: *most of supply staked and winner-take most staking market.*



- “One node operator has an out-sized influence and a large majority of the ETH supply is staked.”

## Four “extended” cases.

Case 5: decentralized staking protocol  $\neq$  centralized staking provider.



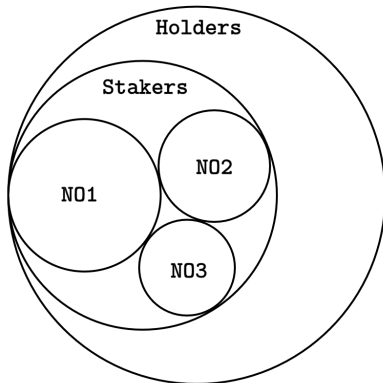
- “Not all pools have the same level of decentralization.”



# Four “extended” cases.

## Case 6: Minimum viable issuance and solo-stakers.

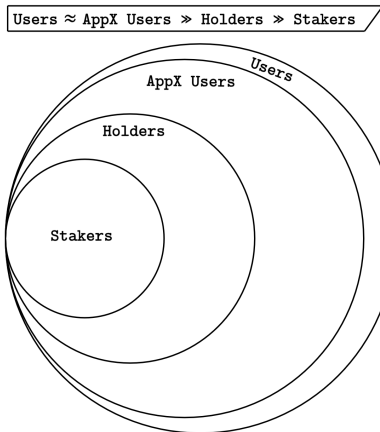
Holders » Stakers » NOs; Solo =  $\emptyset$



- “Stake capping could immediately price out solo-stakers.”

# Four “extended” cases.

Case 7: AppX getting systemically important.

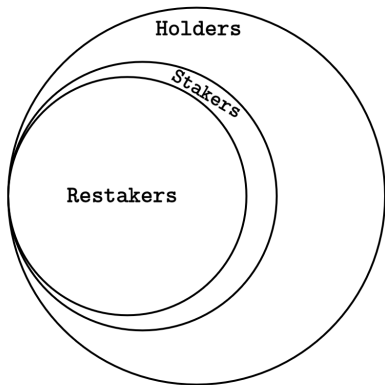


- “The application layer and its potential impact on consensus (UASF).”

## Four “extended” cases.

Case 8: *Restaking finding mass adoption.*

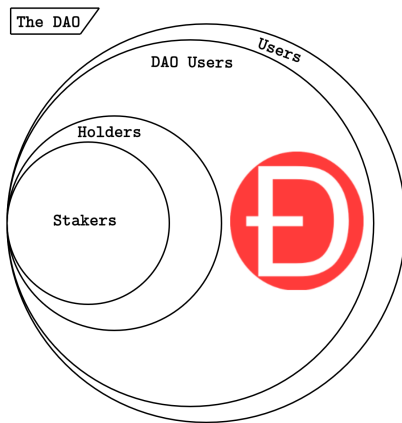
Holders  $\gg$  Stakers  $\approx$  Restakers



- *“Restaking could morph the incentives of staking.”*

# Four “example” cases.

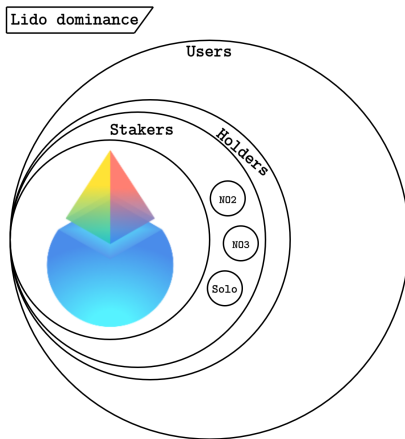
## Case 9: The DAO.



- *“The DAO became too big to fail.”*

# Four “example” cases.

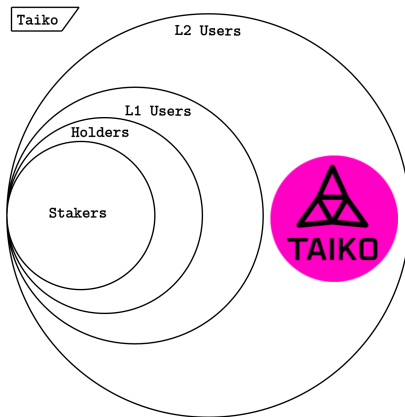
*Case 10: Lido becomes too dominant.*



- “What percentage is too much?”

# Four “example” cases.

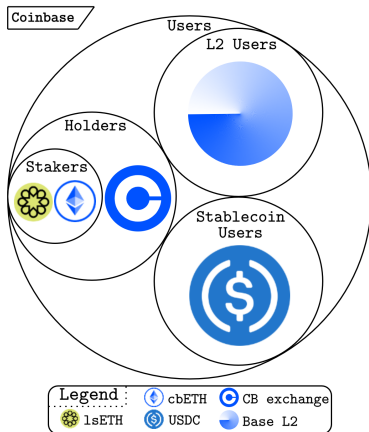
*Case 11: Taiko becomes the hub for most users.*



- “What if an L2 far exceeds the user base of the L1?”

# Four “example” cases.

## Case 12: Coinbase's multi-layer positioning.



- “How do we consider decentralization when one entity influences many layers?”

thanks!



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let's keep Ethereum weird :-)