Problem: determine what lines to investigate.

guideline: investigate moves that are most likely to be played.

   concern: overly broad search.
   remedy: approximate minimax more closely
   concern: investigates known lines
   remedy: use uncertainty... somehow

Objective:
pick s: ~~$\arg\max_s P(s \text{ played}) \Delta \text{uncertainty}(s)$~~

   to minimize $\sum_{s' \neq s} P(s') \text{uncertainty}(s')$

need:
   access to P
   prediction of Δuncertainty
   ~~fast propogation of Δuncertainty benefit~~
   — back propogation

access to P

occassionally update *whole* tree

  if frequency $= O(\log |S|)$, no asymptotic decrease in efficiency

  try frequency $= O(\sqrt{|S|})$

  overhaul $= \sum\limits_{i=1}^{\sqrt{|S|}} i^2 = O(|S|^{1.5})$ unacceptable

clean_ep $\leftarrow 1$
upon clean: clean_ep $\leftarrow$ clean_ep$\cdot 1.1 + 1$

prediction of Δuncertainty:

initial $=$ max uncertainty (always)

end has to be predicted

use all uncertainties to train,
  weight "nearby" samples asymptotically more
  "nearby" $=$ at same depth?

OR assume Δuncertainty constant across all
  states

backprop of uncertainty loss

Uncertainty(parent) upon observation of child

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