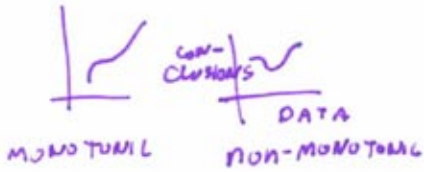


# TRUTH MAINTENANCE SYSTEM

TRUTH TOO CAN BE PROPAGATED  
MONOTONIC REASONING



## NON MONOTONIC REASONING

CAN DETERMINE WHAT CONCLUSIONS  
ARE INCORRECT. THIS IS GOOD,  
BECAUSE ENVIRONMENT MAY REQUIRE  
AGENT TO REEVALUATE CONCLUSIONS.

## BACKTRACKING

- CHRONOLOGICAL MUST GO TO IMMEDIATE  
PREDECESSOR



- DEPENDENCY DIRECTED



I SAW THE MAN  
ON THE HILL  
WITH THE TELESCOPE

2 PEOPLE

A

C

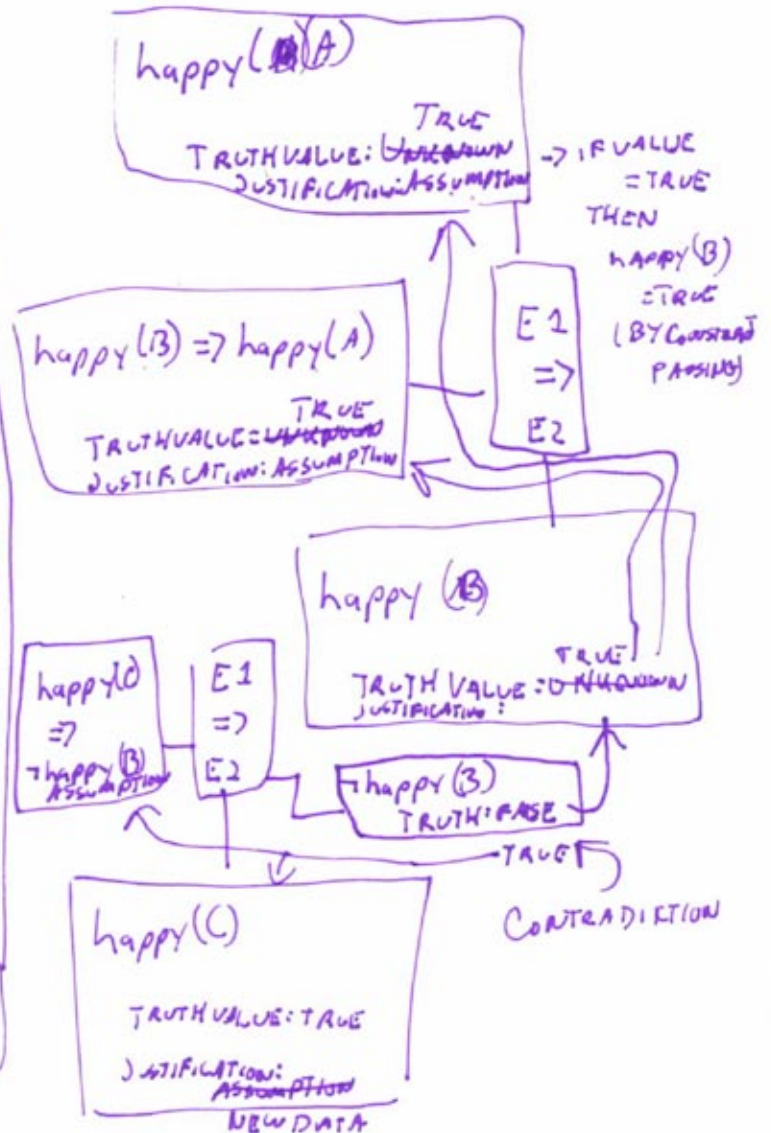
B

B LIKES A

B HATES C

happy(A)  $\Rightarrow$  happy(B)

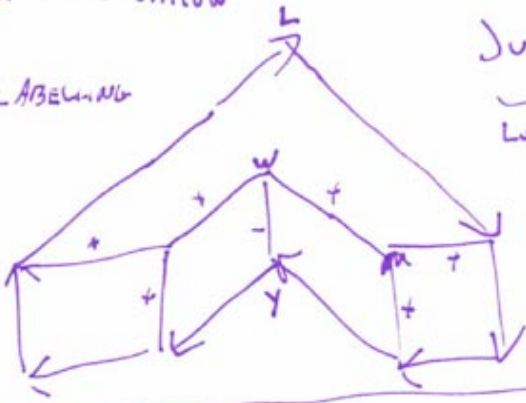
happy C  $\Rightarrow$   $\neg$ happy(B)



CAN DECIDE THAT MAYBE AN  
ASSUMPTION WAS FALSE

# CONSTRAINT PROPAGATION

LINE LABELING

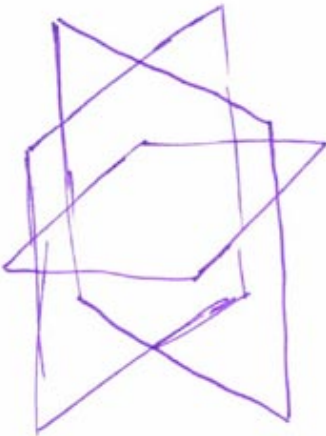


JUNCTION TYPES: L

LOOKS LIKE LINE:

L	Y	W	T
↙	Y	↘	T

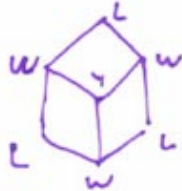
PATTERNS OF REGULARITY DERIVED FROM



8 OCTANTS



CUBE HAS ALL OCTANTS



1 OCTANT REMOVED



L	Y	W	T
↙	Y	<del>W</del>	↘
↘	<del>Y</del>	↙	↘
↙	Y	↙	↘
↘	↘	↙	↘
↙	↘	↙	↘
↘	↘	↙	↘
↙	↘	↙	↘

THERE IS A SCHOOL OF THOUGHT WHERE EVERY PROBLEM IS REDUCIBLE TO CONSTRAINT PROPAGATION.

LINE PRO

LINE LABEL PROBLEM

- LABEL EACH JUNCTION BOUNDARY

- EXAMINE EACH REMAINING

JUNCTION: IF ENOUGH INFORMATION

EXISTS TO DEDUCE ALL LINES, LABEL

↳ AS PER PATTERN OF REGULARITY