

The Life of a Software Concern

Bram Adams
Ahmed E. Hassan

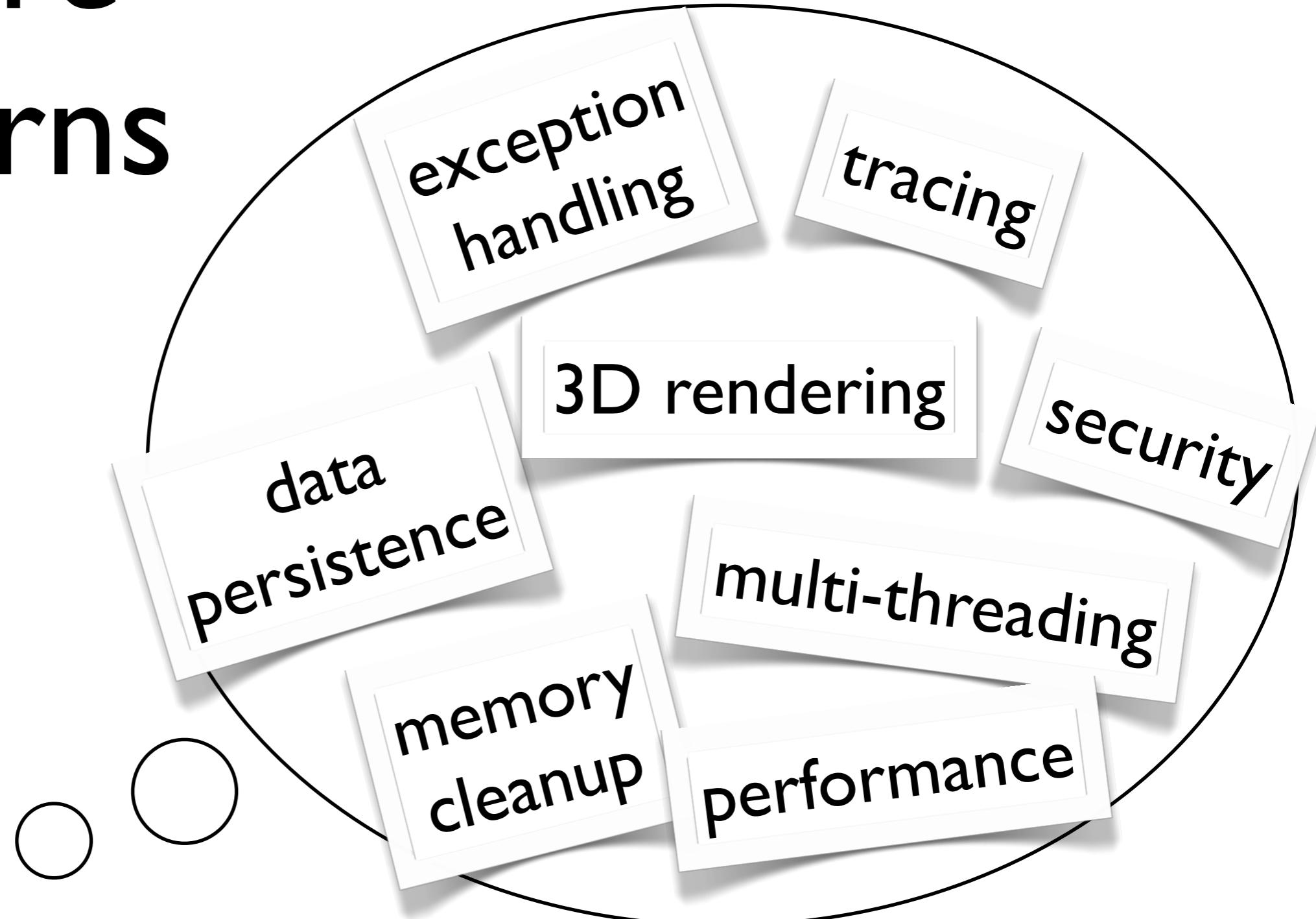
SAIL, Queen's University

<http://sailhome.cs.queensu.ca/~bram/>

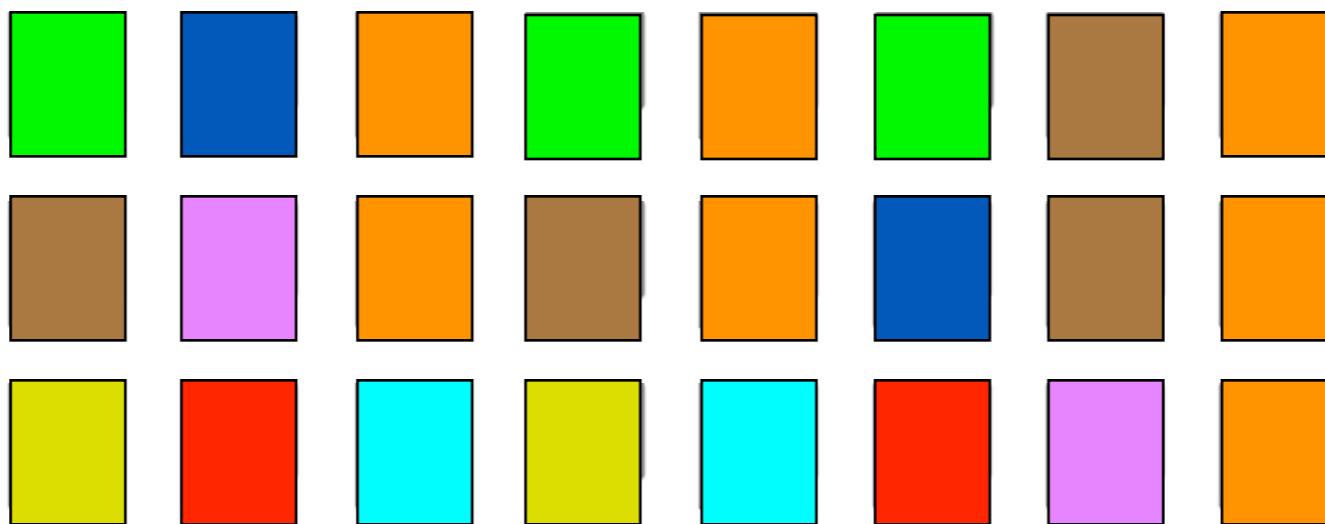
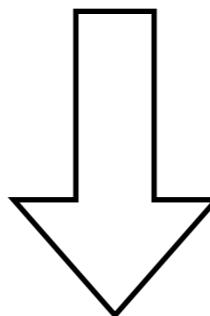
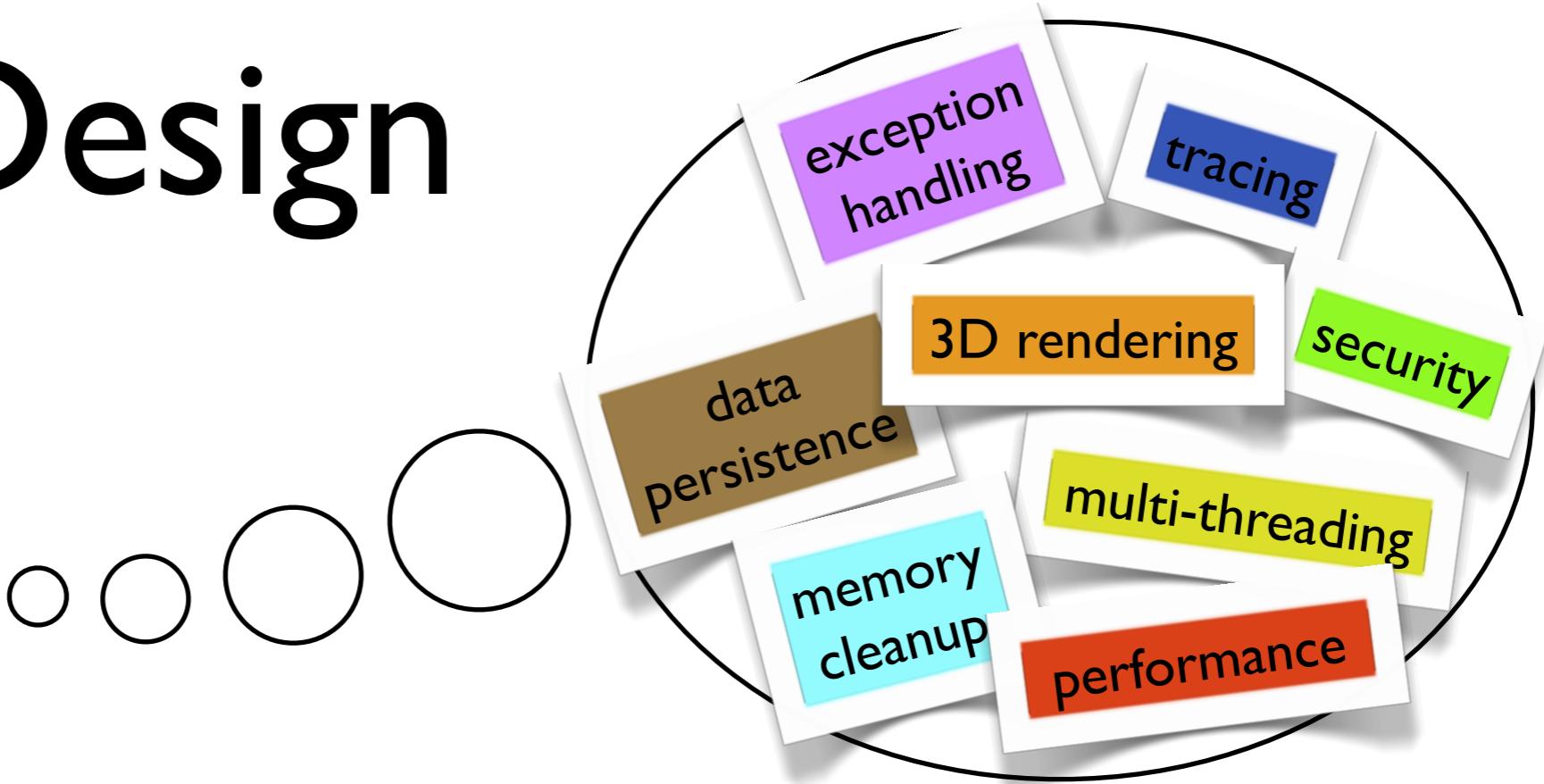


What is a software concern?

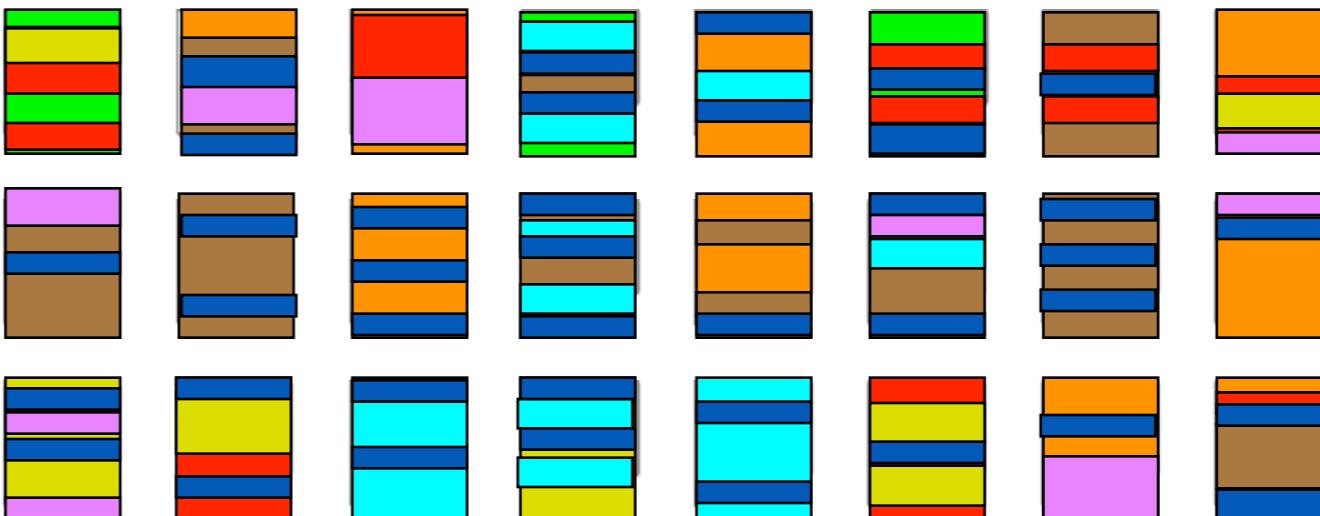
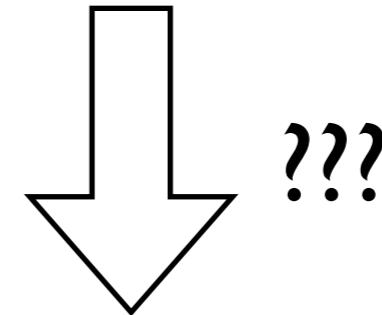
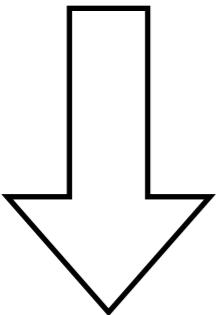
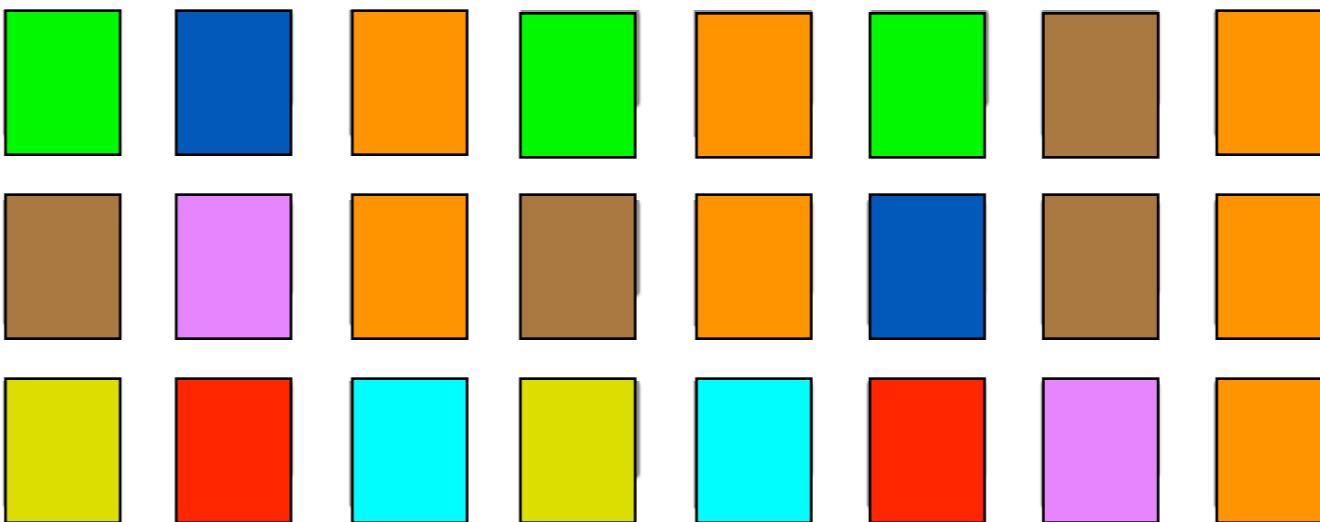
Software Concerns



Ideal Design



Concern Drift



How to Deal with Concern Drift?

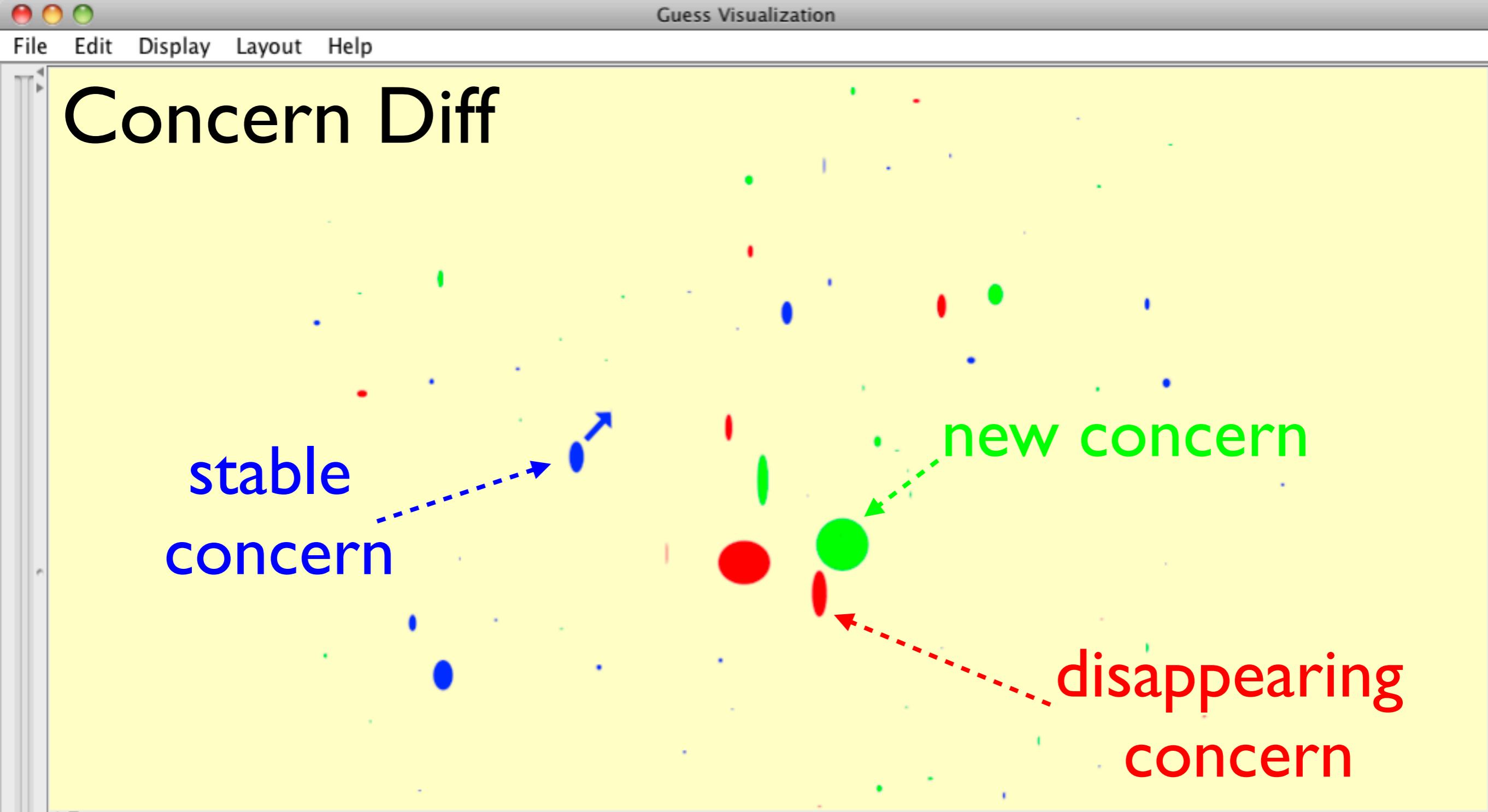


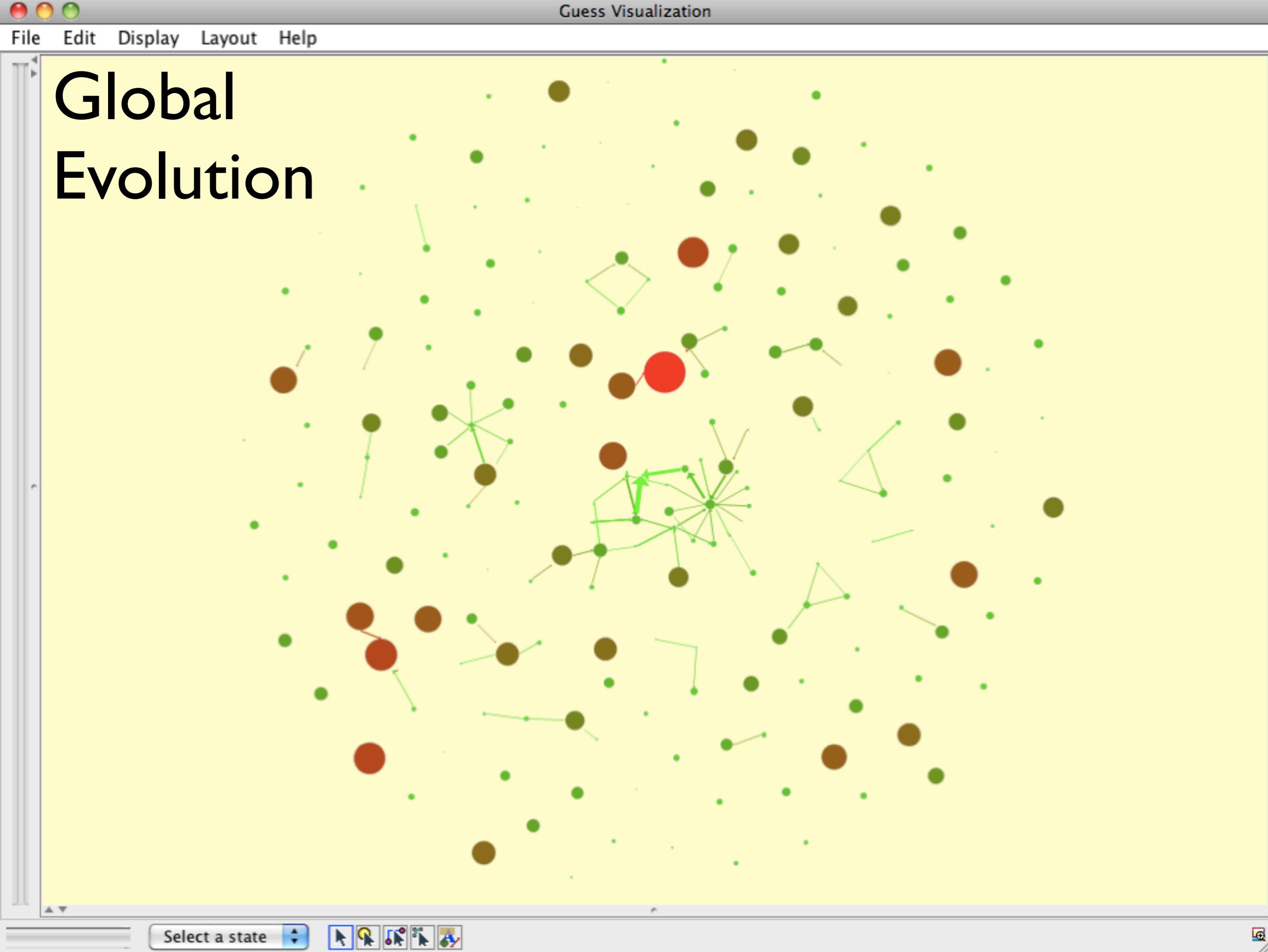
vs.



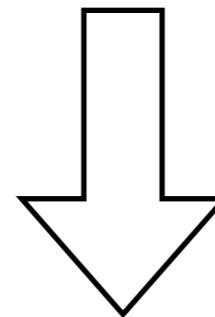
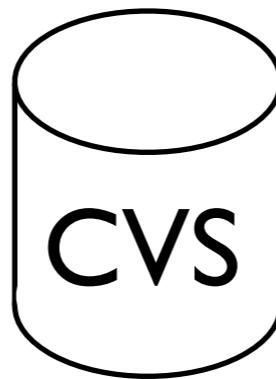
TTTTTTTTTTTTTTTTTEEEEEEEEEE	CCCCCCCCCCCC	SSSSSSSSSSSS	TTTTTTTTTTTTTTTT
T:::::::::::TE:::::::E	CCC:::::C	SS:::::ST:::::	T::::::::::T
T:::::::::::TE:::::::E	CC:::::CS:::::S	SSSSSSST:::::TT:::::T	T::::::::::T
T:::::TT:::::TT:::::TEE:::::EEEEE	C:::::CCCCCCC:::CS:::::S	SSSSSSST:::::TT:::::T	T:::::TT:::::T
TTTTT T:::::T TTTTTT E:::::E EEEEEE	CCCCCS:::::S	TTTTT T:::::T TTTTTT	
T:::::T E:::::E	C:::::C	S:::::S	T:::::T
T:::::T E:::::EEEEE	C:::::C	S:::::SSSS	T:::::T
T:::::T E:::::::::::E	C:::::C	SS:::::SSSS	T:::::T
T:::::T E:::::::::::E	C:::::C	SSS:::::SS	T:::::T
T:::::T E:::::EEEEE	C:::::C	SSSSSS:::::S	T:::::T
T:::::T E:::::E	C:::::C	S:::::S	T:::::T
T:::::T E:::::E EEEEEE	CCCCCCC	S:::::S	T:::::T
TT:::::TT EE:::::EEEEE	C:::::CCCCCCC:::CSSSSSS	S:::::S	TT:::::TT
T:::::TT E:::::::::::E	CC:::::CS:::::S	SSSSSS:::::S	T:::::TT
T:::::TT E:::::::::::E	CCC:::::CS:::::SS	SSSSSSSSSSSS	T:::::TT
TTTTTTTTTT EEEEEEEEEE	CCCCCCCCCCCC	SSSSSSSSSSSS	TTTTTTTTTT

Tracking the Evolution of Concern Scattering and Tangling

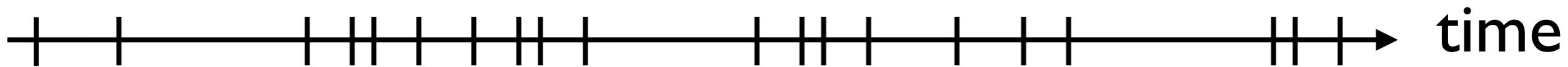




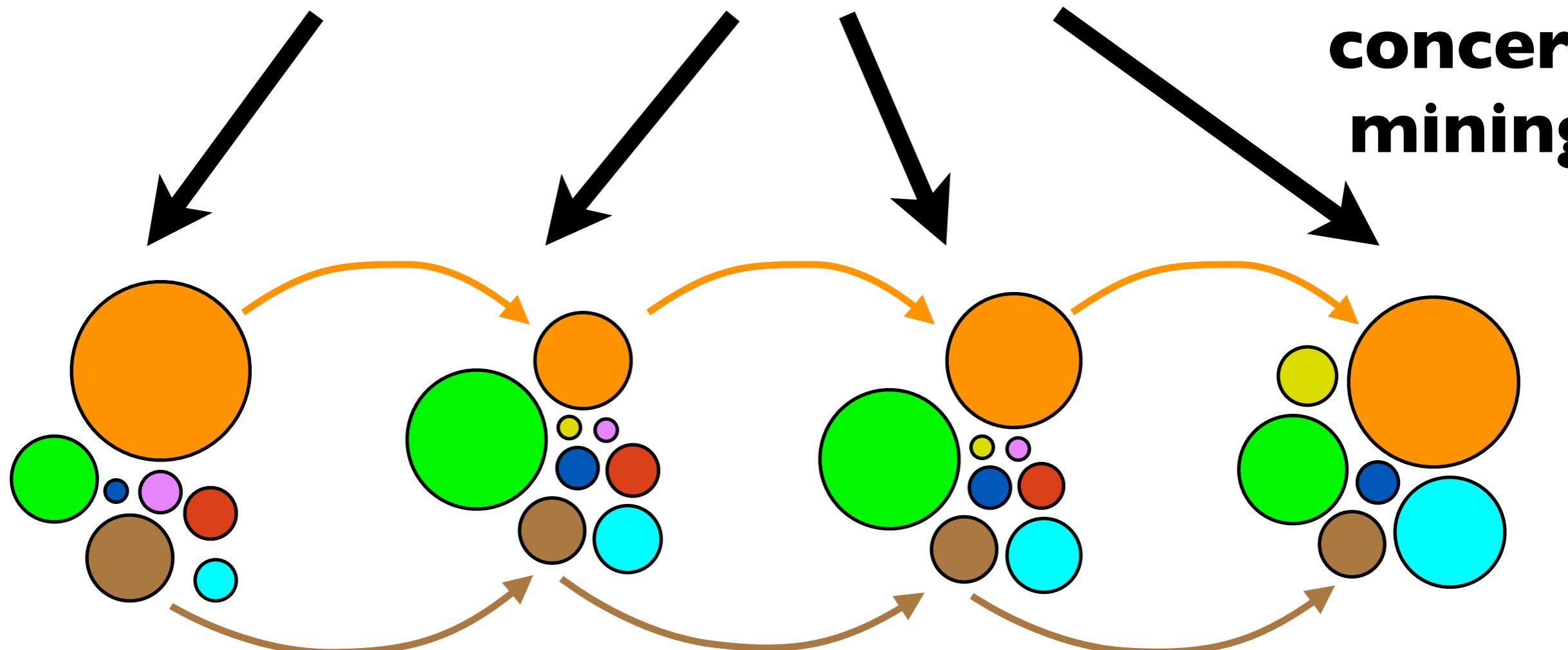
TECST



**evolutionary
extractor**



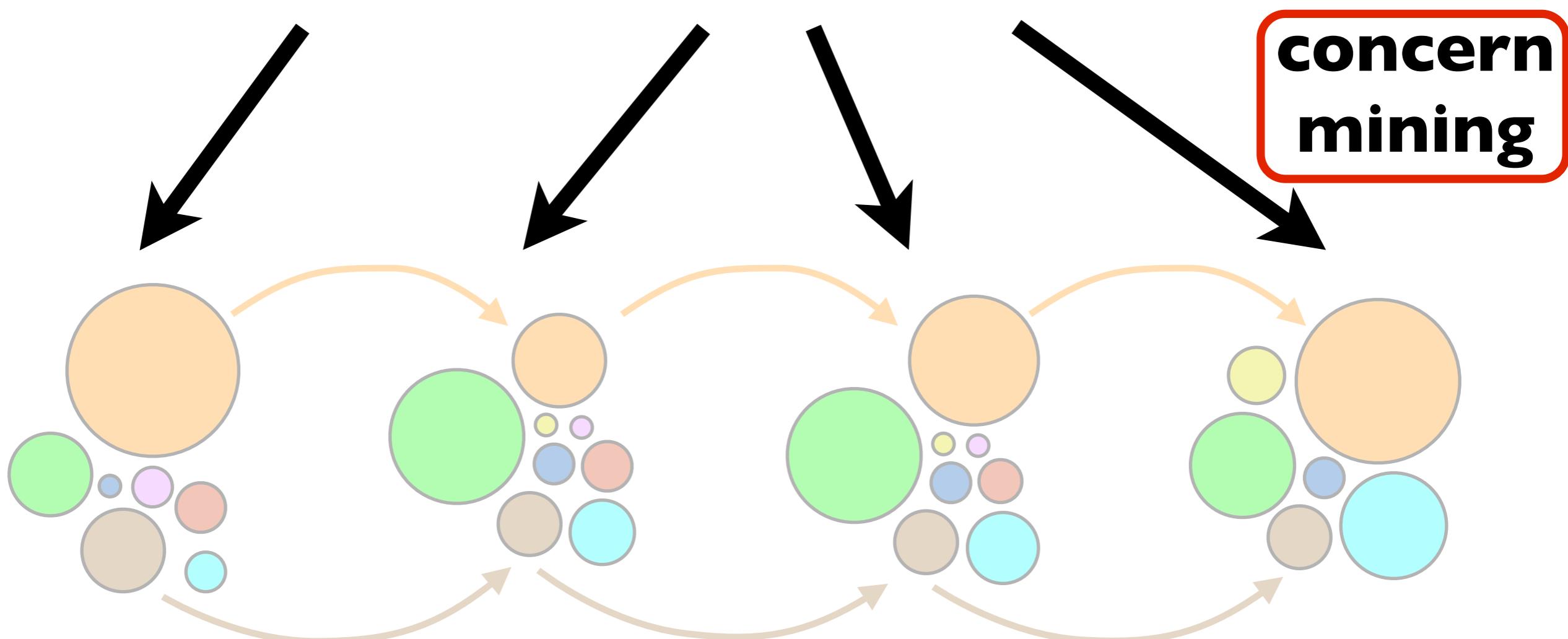
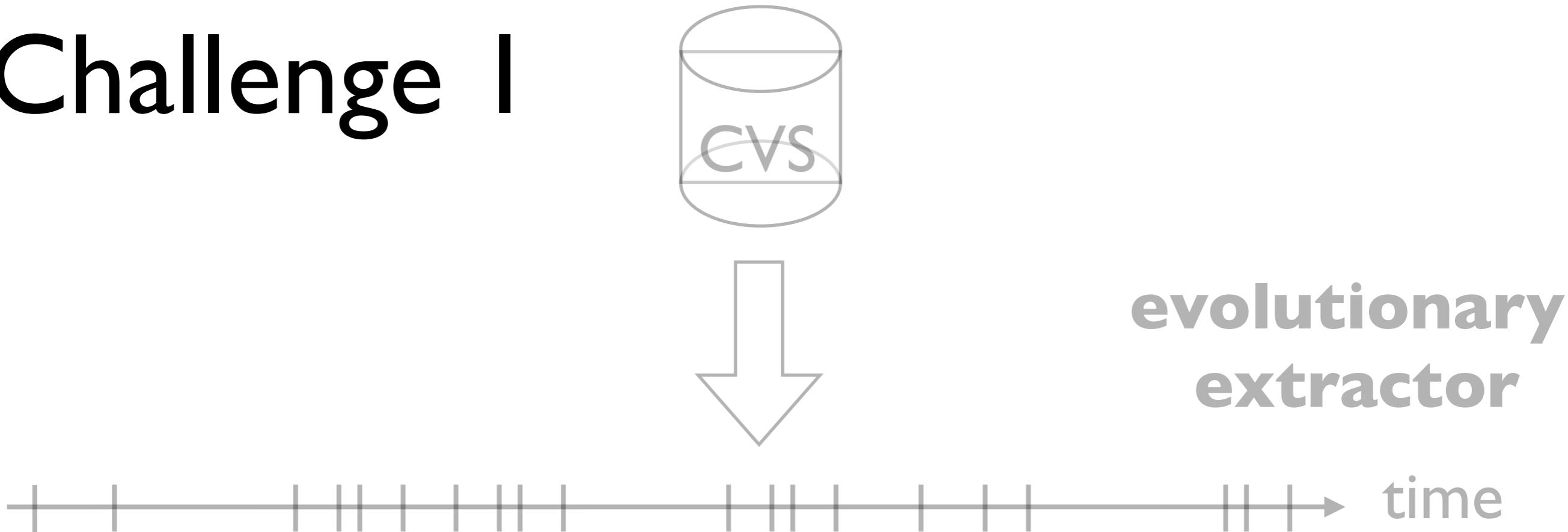
**concern
mining**



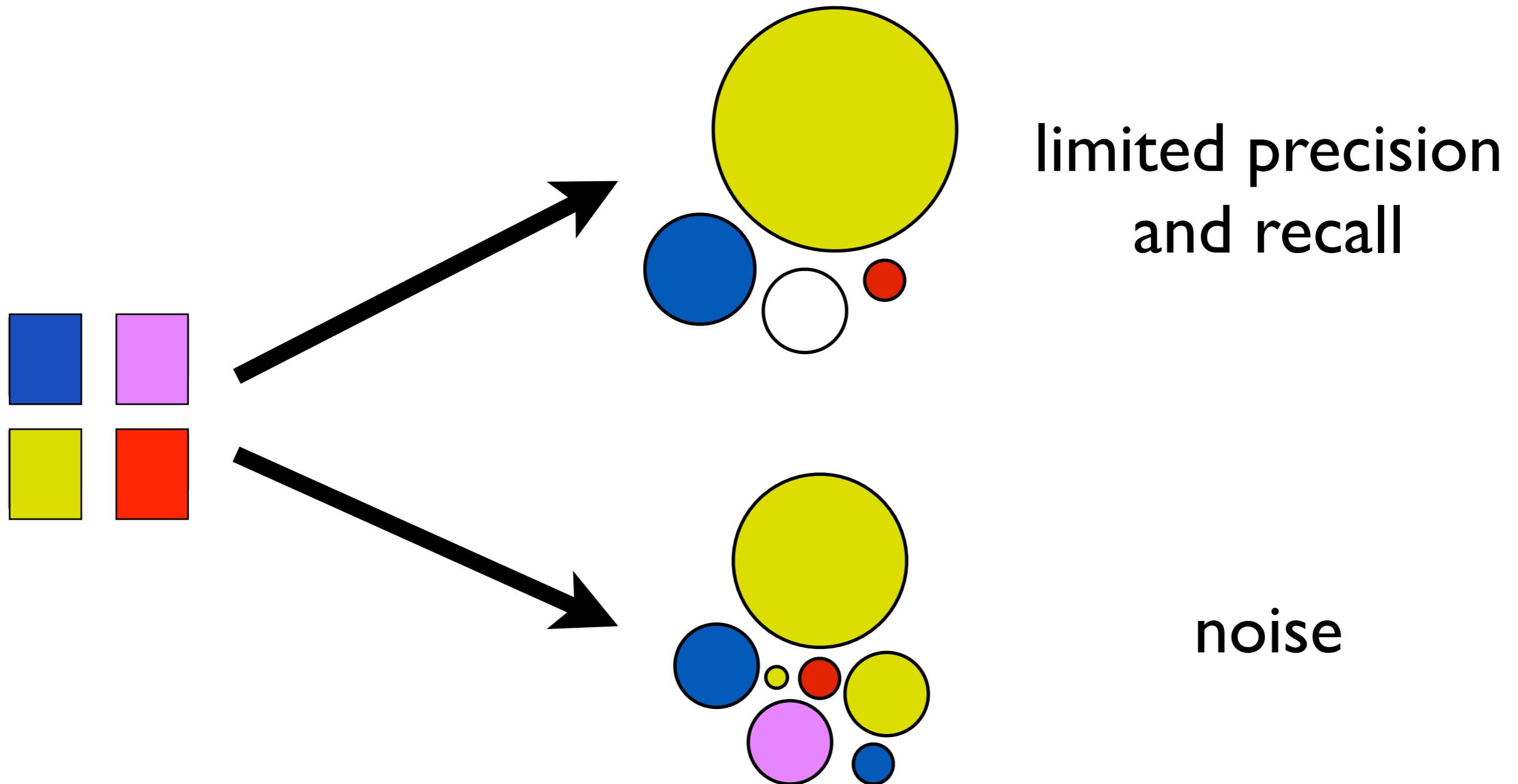
A perspective view of a running track with lanes and a finish line.

Challenges

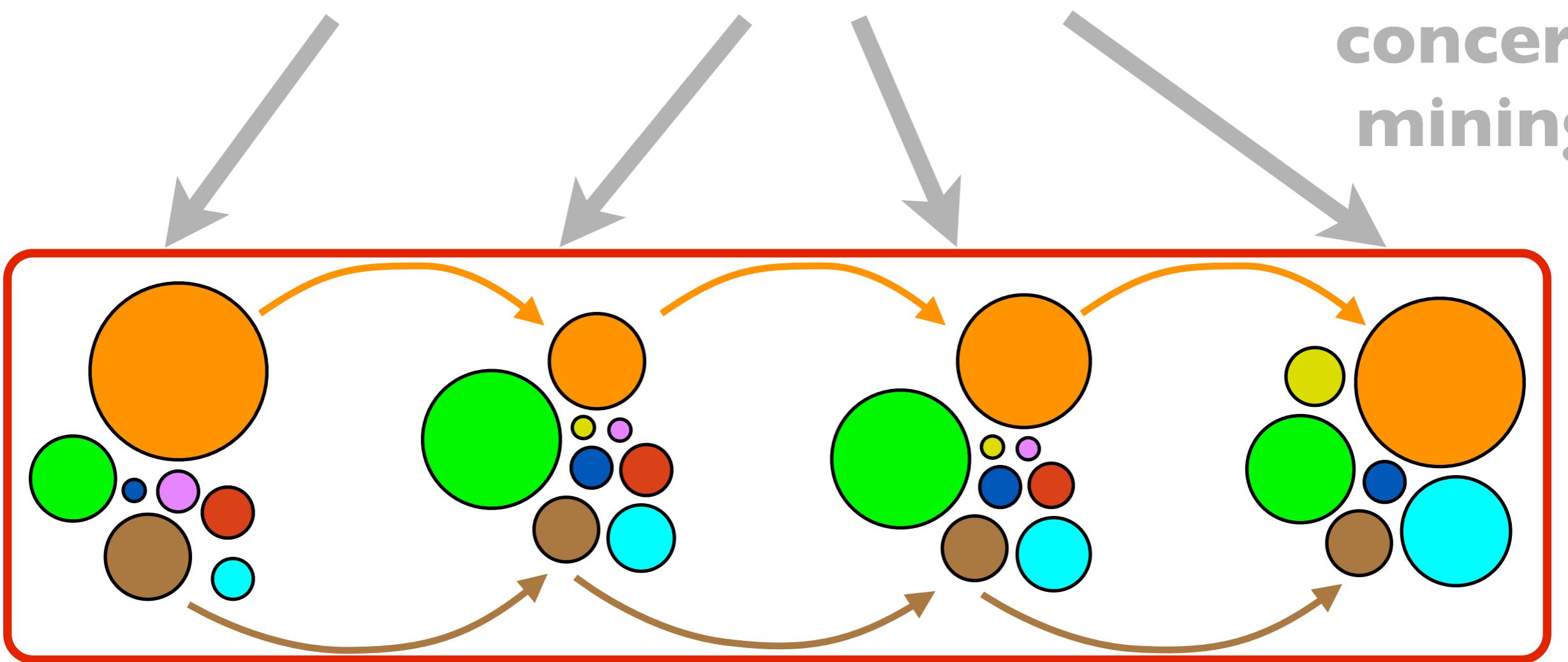
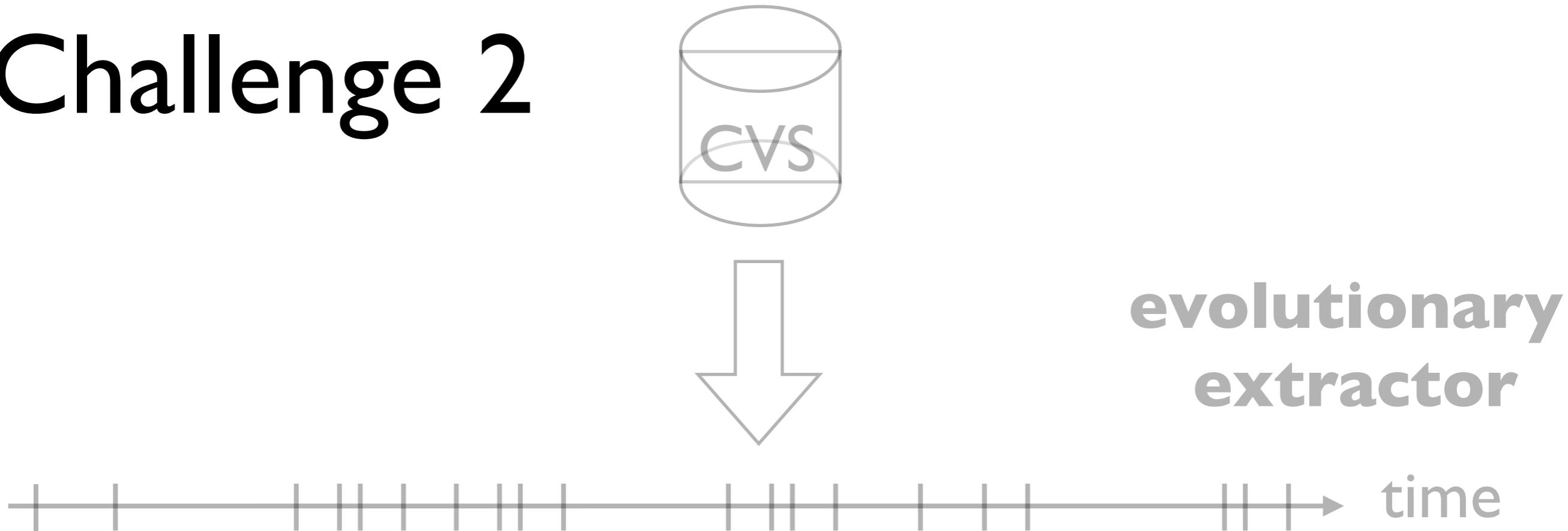
Challenge I



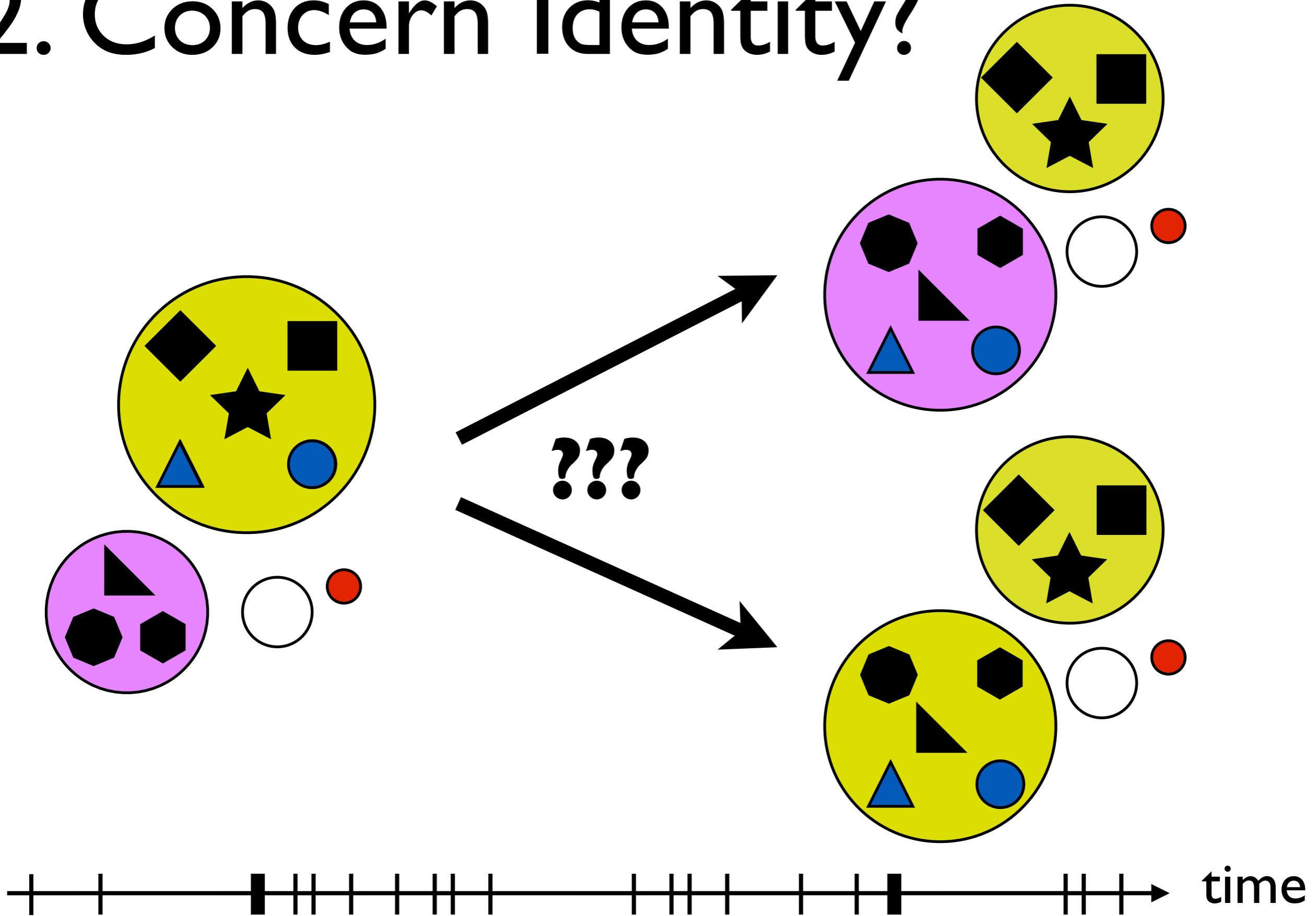
I. Concern Mining Shortcomings



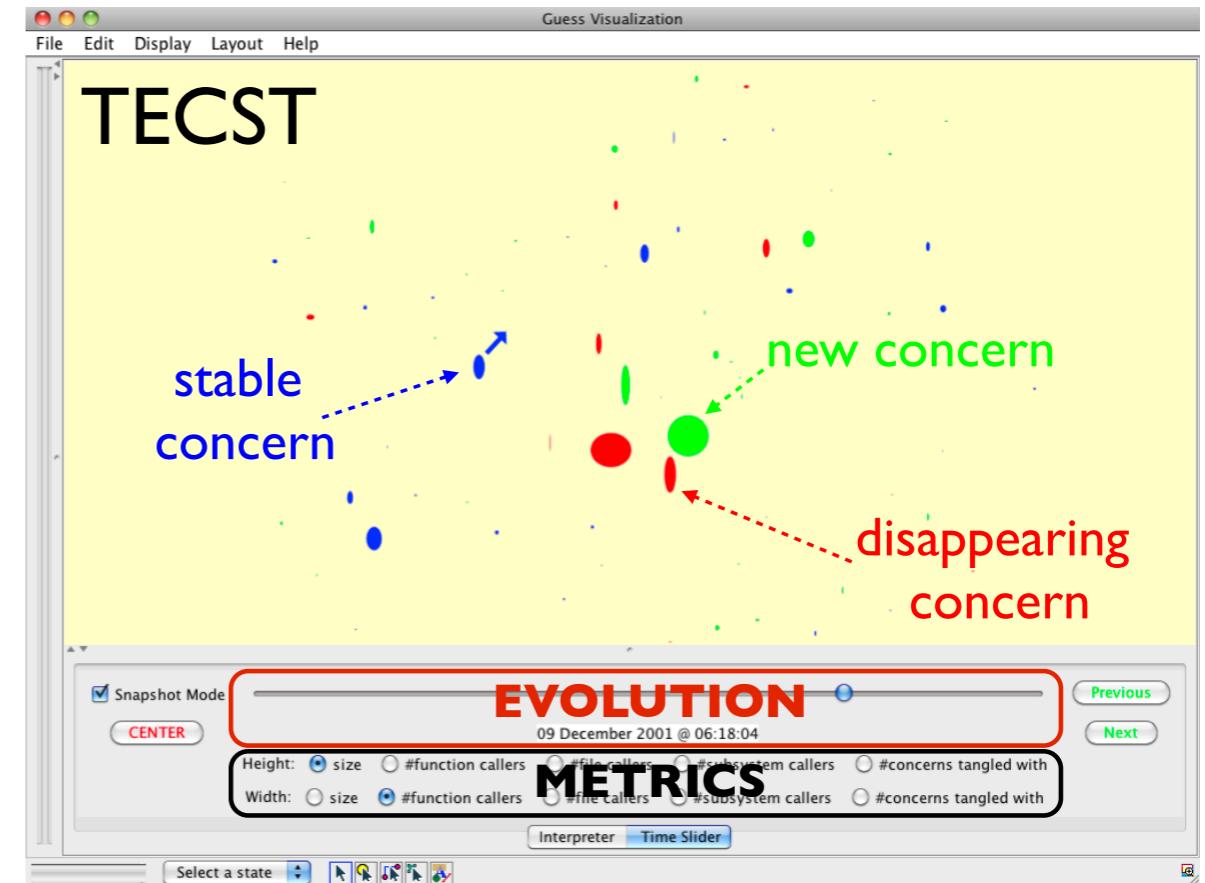
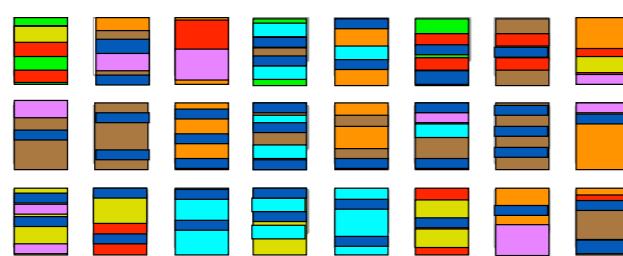
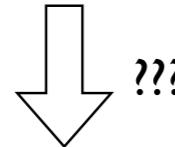
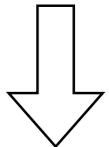
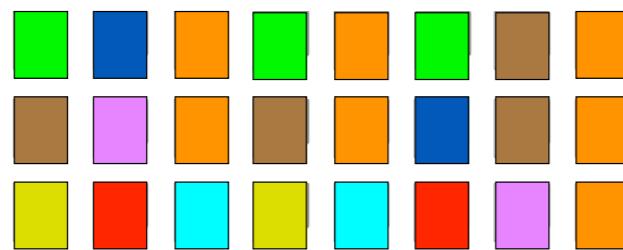
Challenge 2



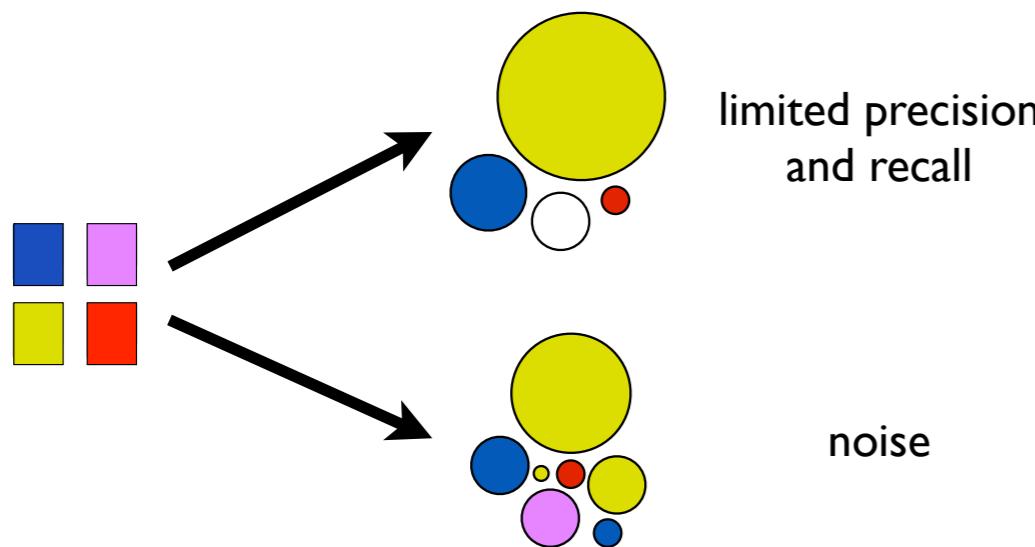
2. Concern Identity?



Concern Drift



I. Concern Mining Shortcomings



2. Concern Identity?

