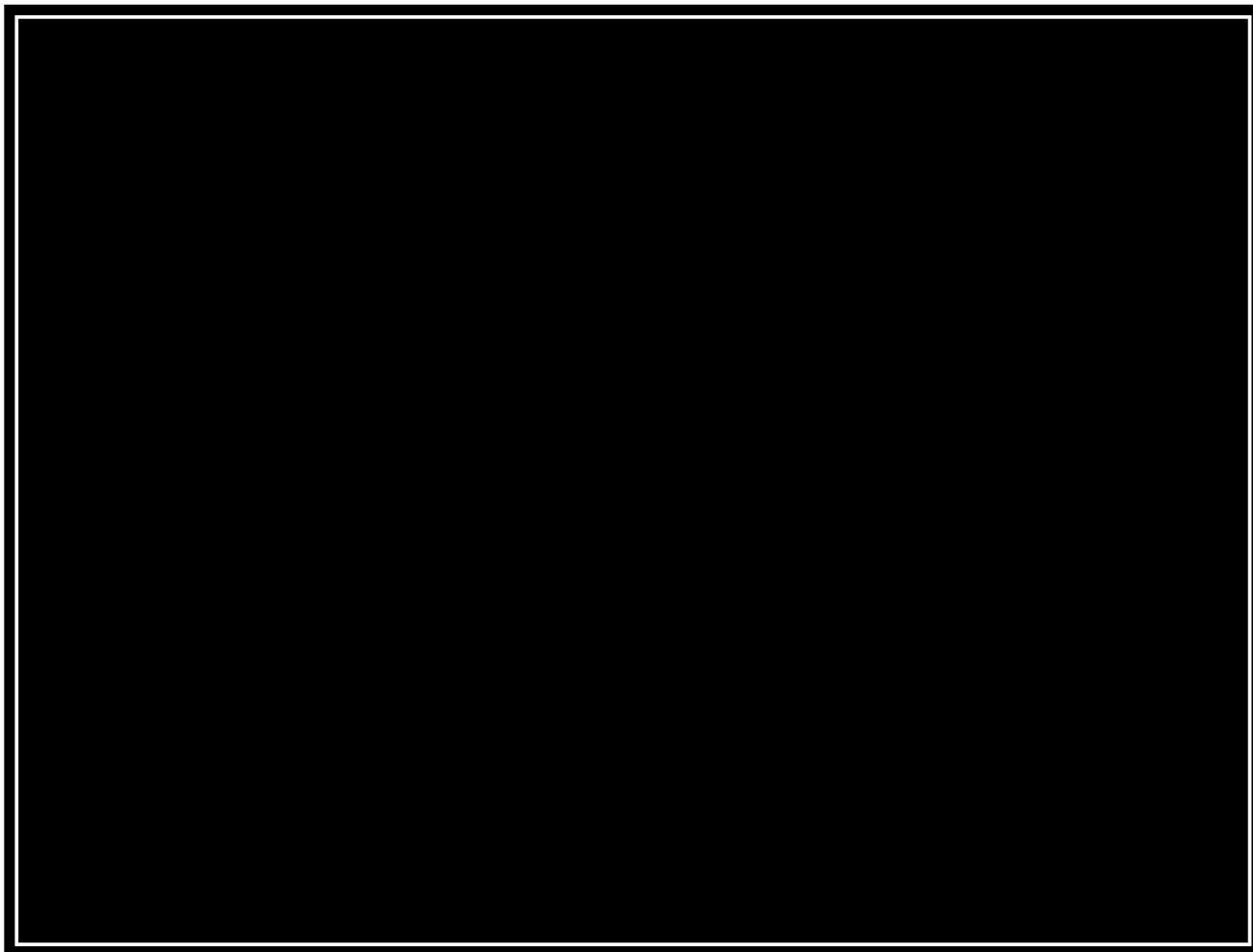
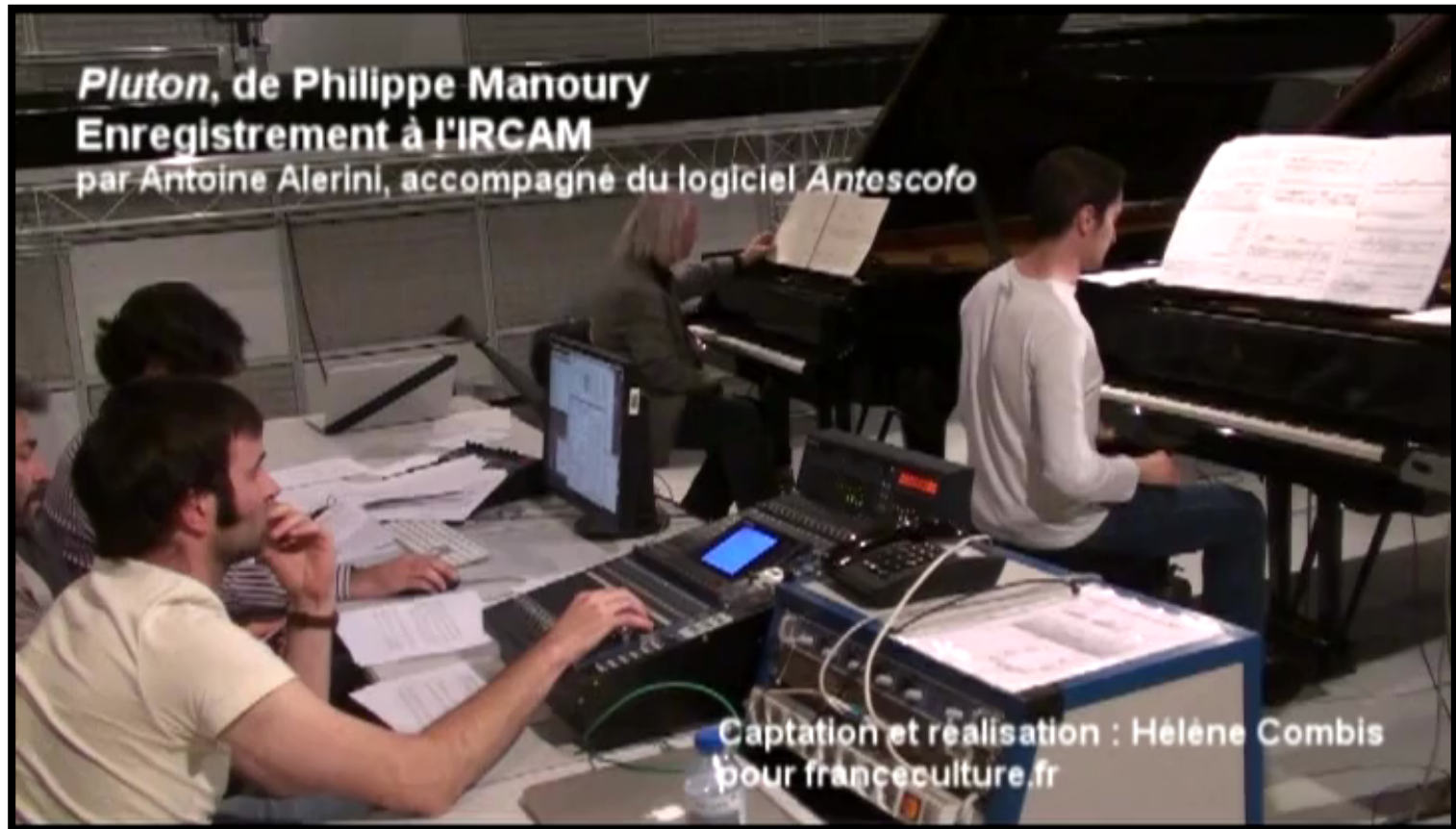


Automatic Accompaniment beyond karaoke

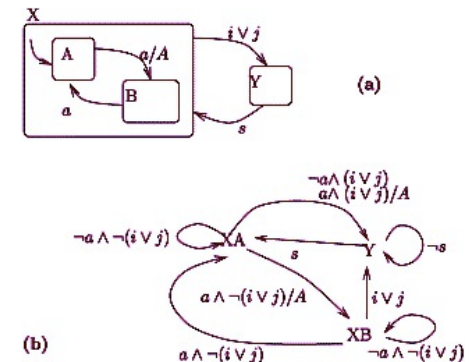
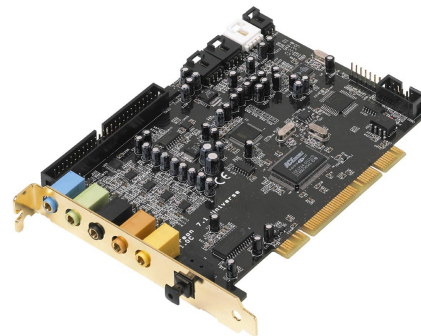


Mixed Music (human musician + electronics)



Writing and relating multiple time

- relative time in the score
- musician time
- logical time in the program
- audio time
- wall clock time of the physical computer





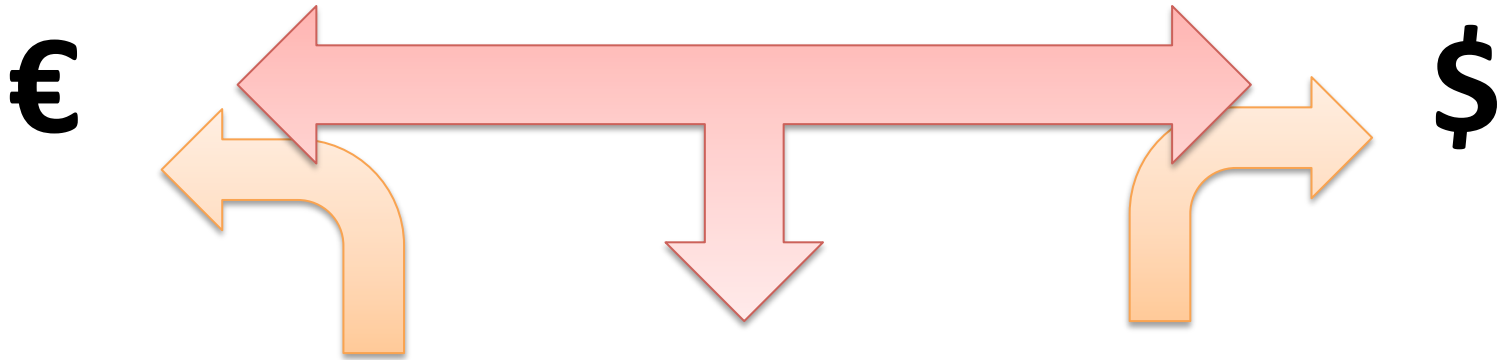
**duration
time flow**



**event
time line**



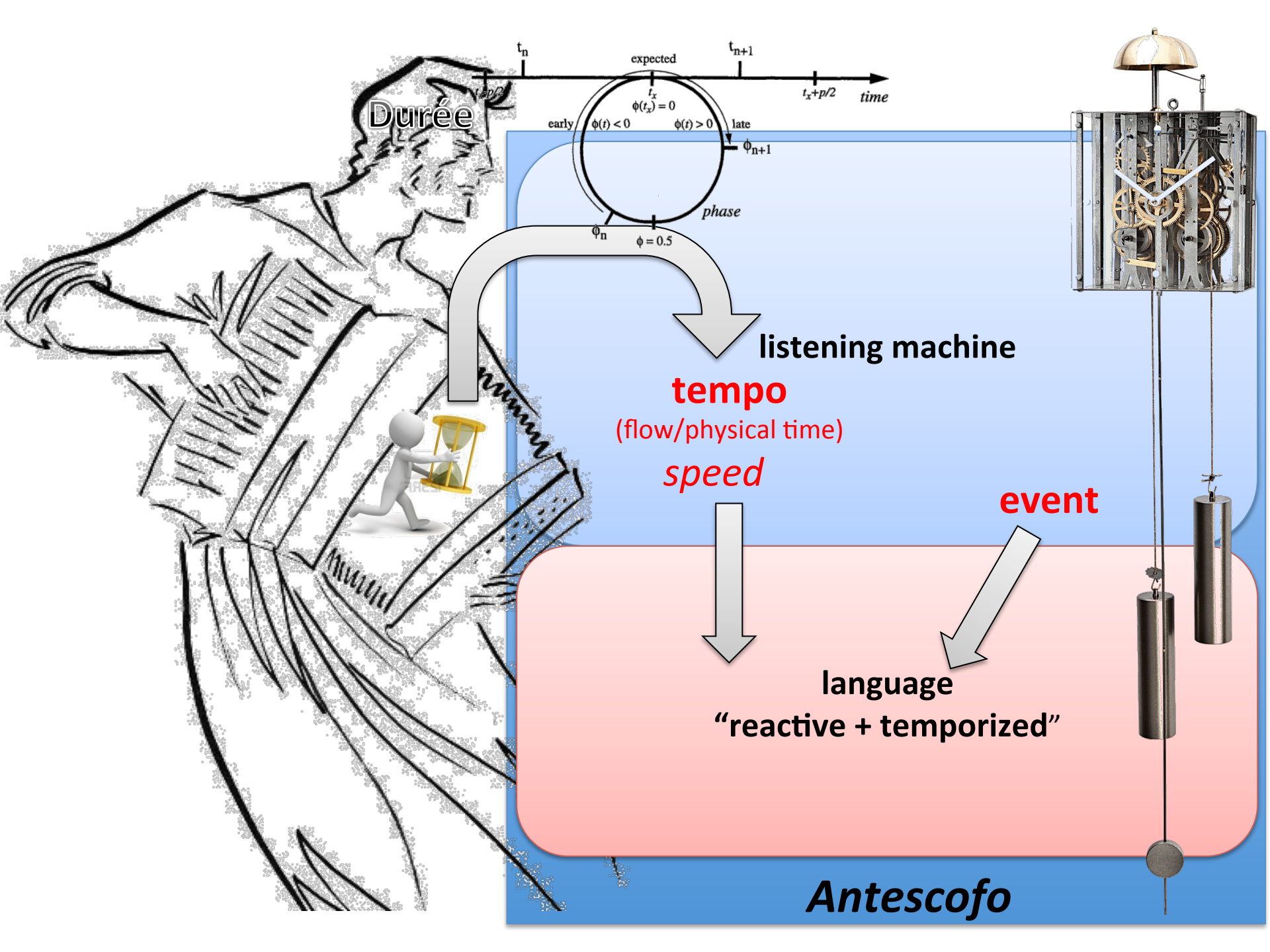
A second per second



In music, physical time is subordinated to relative time

not the reverse

- The score relatively to the tempo, not to wall clock
- the “exchange rate” is dynamic and known only “after”
- makes possible a musical dialog between man and machines
- Duration is not reducible to instant
 - arbitrary division of a duration
 - accelerando
 - musical phrasing (ex. rubato)



Tempo estimation and clocks sympathy

