

managing the ecology of interaction (extending task analysis)

extract from invited talk at Tamodia 2002

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www.hcibook.com/alan/papers/Tamodia2002

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the problem

- task models
 - formal description
- situatedness
 - unique contexts
- ethnography
 - rich ecologies

bringing
them
together?

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phenomena

- collaboration
- information
- triggers
- artefacts
- placeholders
- continuity & duration
- intentional cycle

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collaboration

- already in several notations
 - label subtasks by person responsible
 - TA for individuals and groups
 - e.g. CTT
- add artefacts too ?

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information

pre-planned cognitive model
goal → action

situated action
environment → action

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control

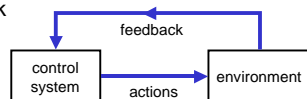
- open loop control
 - no feedback
 - fragile



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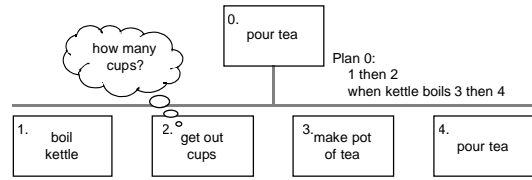
control

- open loop control
 - no feedback
 - fragile
- closed loop control
 - uses feedback
 - robust



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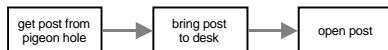
adding information



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triggers

process – what happens and order

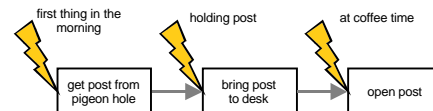


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triggers

process – what happens and order

triggers – when and why



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artefacts

- ethnographic studies
- as shared representation
- as focus of activity
- act as triggers, information sources, etc.

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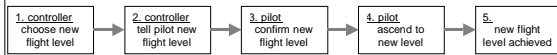
placeholders

- knowing where you are in a process
 - like a program counter
- coding:
 - memory
 - explicit (e.g. to do list)
 - in artefacts

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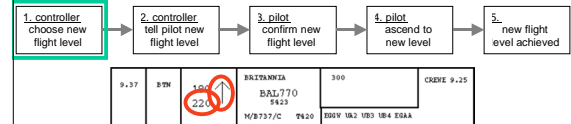
where are you?

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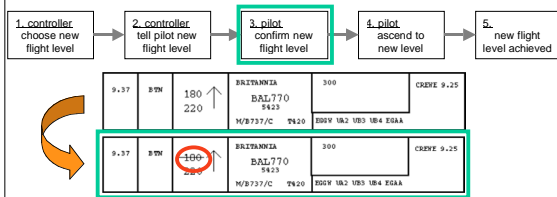
step 1. choose new flight level

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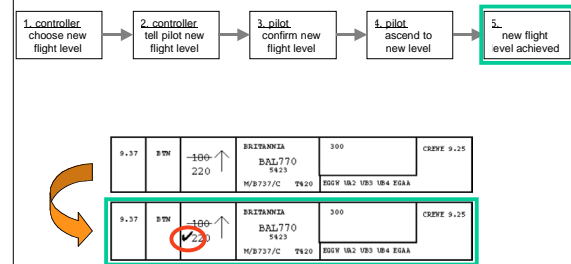
step 3. flight level confirmed

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step 5. new flight level achieved

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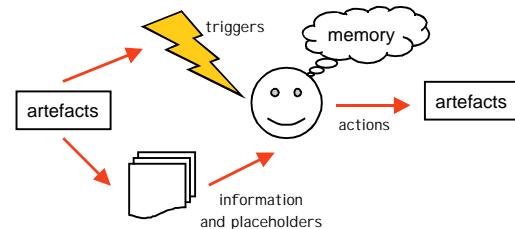
continuity & duration

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- system models – event centric
- status–event analysis
 - continuous time (status) and discrete (events)
 - many generic issues and phenomena
- task models:
 - in the annotations and descriptions
 - concurrency – true or interleaved?

intentional cycle

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incidental interaction

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incidental interaction

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- traditional interaction – purposeful
 - user as controller
 - system as slave
- incidental interaction
 - user acts for one purpose
 - system observes and acts

incidental interaction

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- traditional interaction – purposeful
 - user as controller, system as slave
- incidental interaction
 - system observes and acts, not user's purpose
- examples:
 - car lights
 - auto-flush toilet
 - intelligent homes

? task analysis

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- model main purposeful activity
 - use to design sensors
- model activity to be aided/enhanced
 - use to design actuators

winding up

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final thoughts ...

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- ecologically valid task modelling
 - incorporate rich phenomena
 - but also understand limits
- role?
 - normative or normal?
 - definitive process or descriptive grammar
 - main task or subsidiary task