hierarchical representation

master picture *instances* *constraints*

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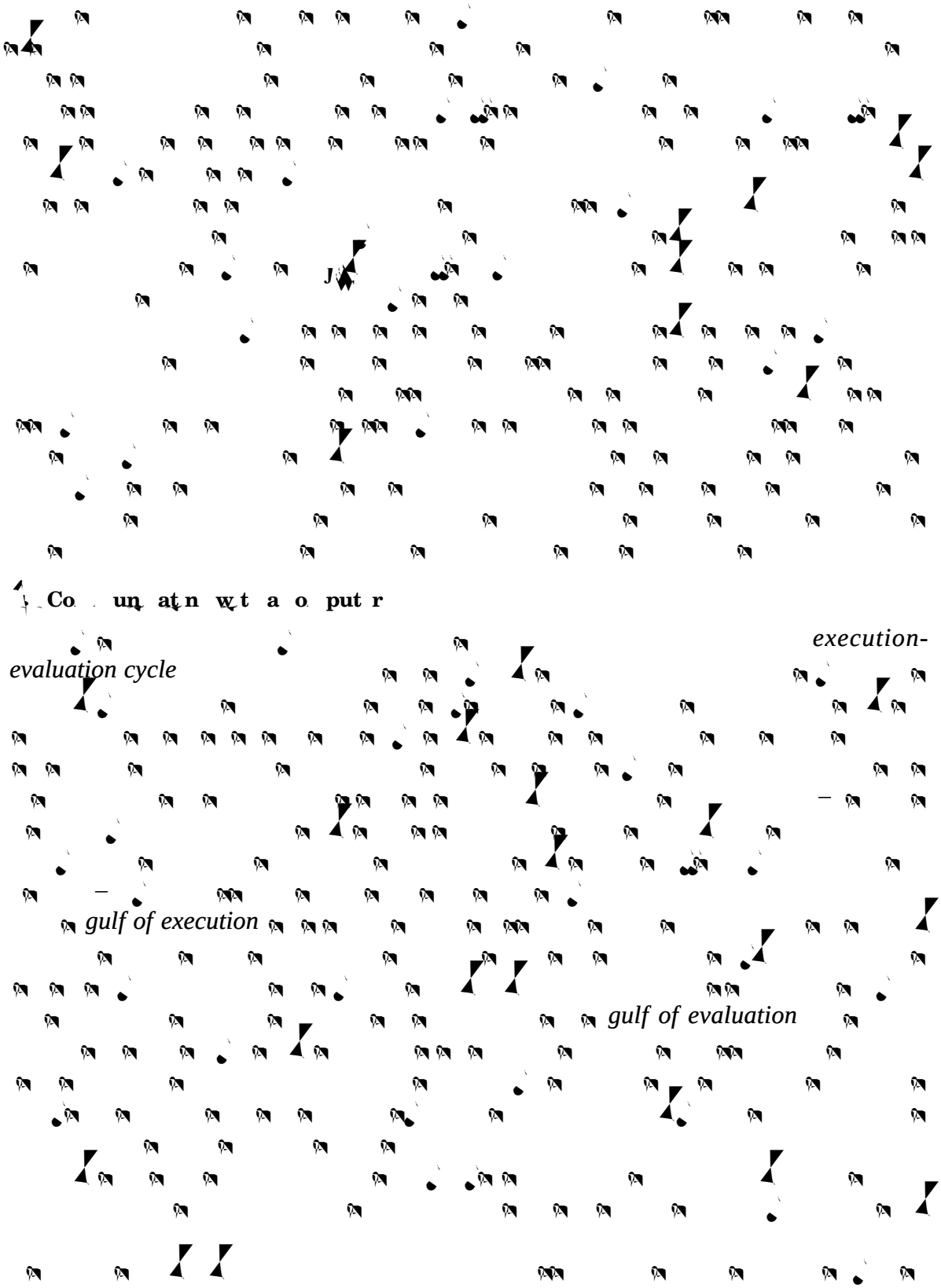
A an Kay an t Dynaboo

graphical user interface

icons

direct manipulation

Int r a s


execution-
evaluation cycle
gulf of execution
gulf of evaluation

t s o o un at on

Co an n nt ract on

M nus an IM nt r ac s

windows icons menus pointers

atura an ua

n nput

D r ct an pu at on

Virtual reality

App n ps o o to s n

M ory

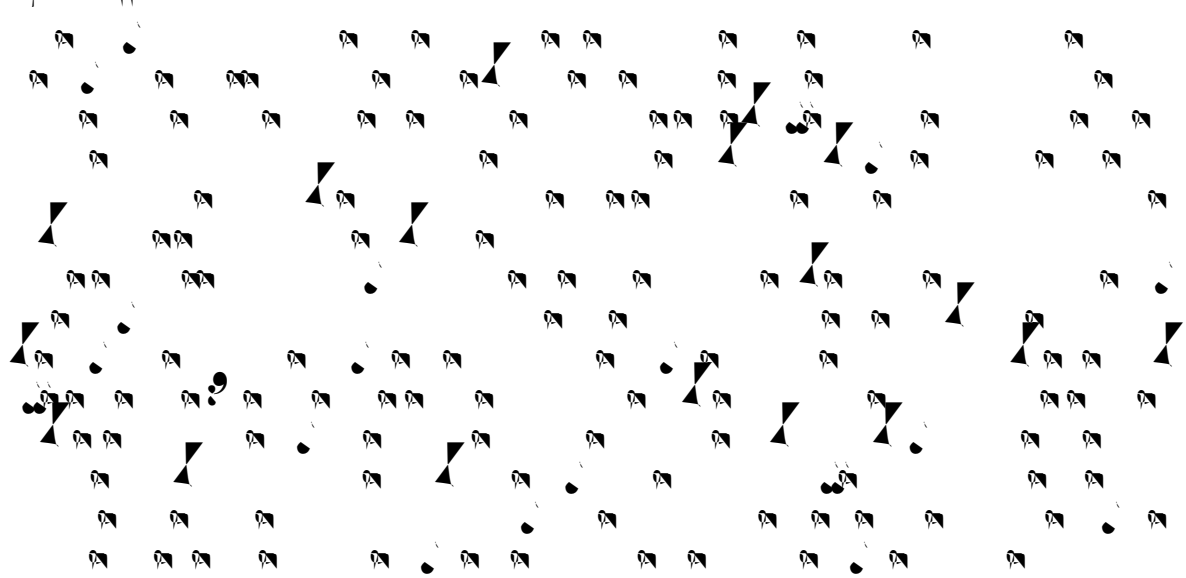
recency primacy effects chunking associativity

meaningful chunks

external representations

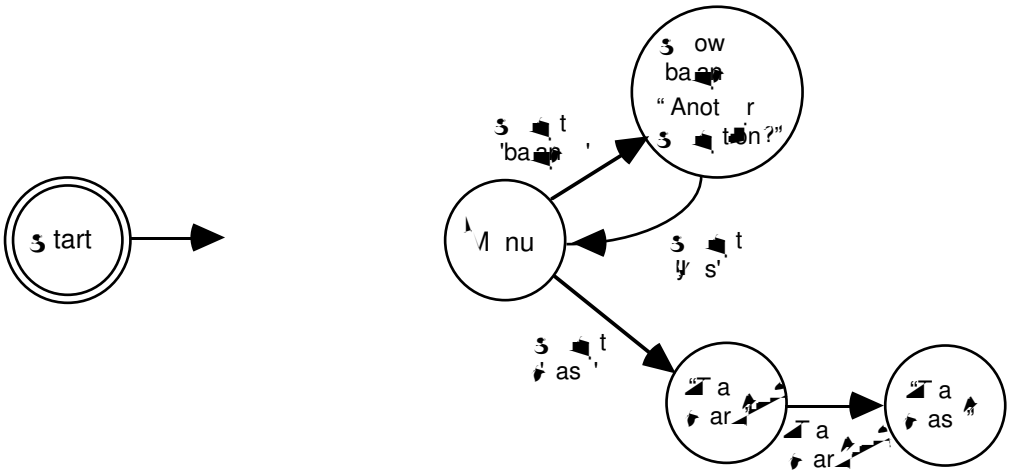
rc pt on

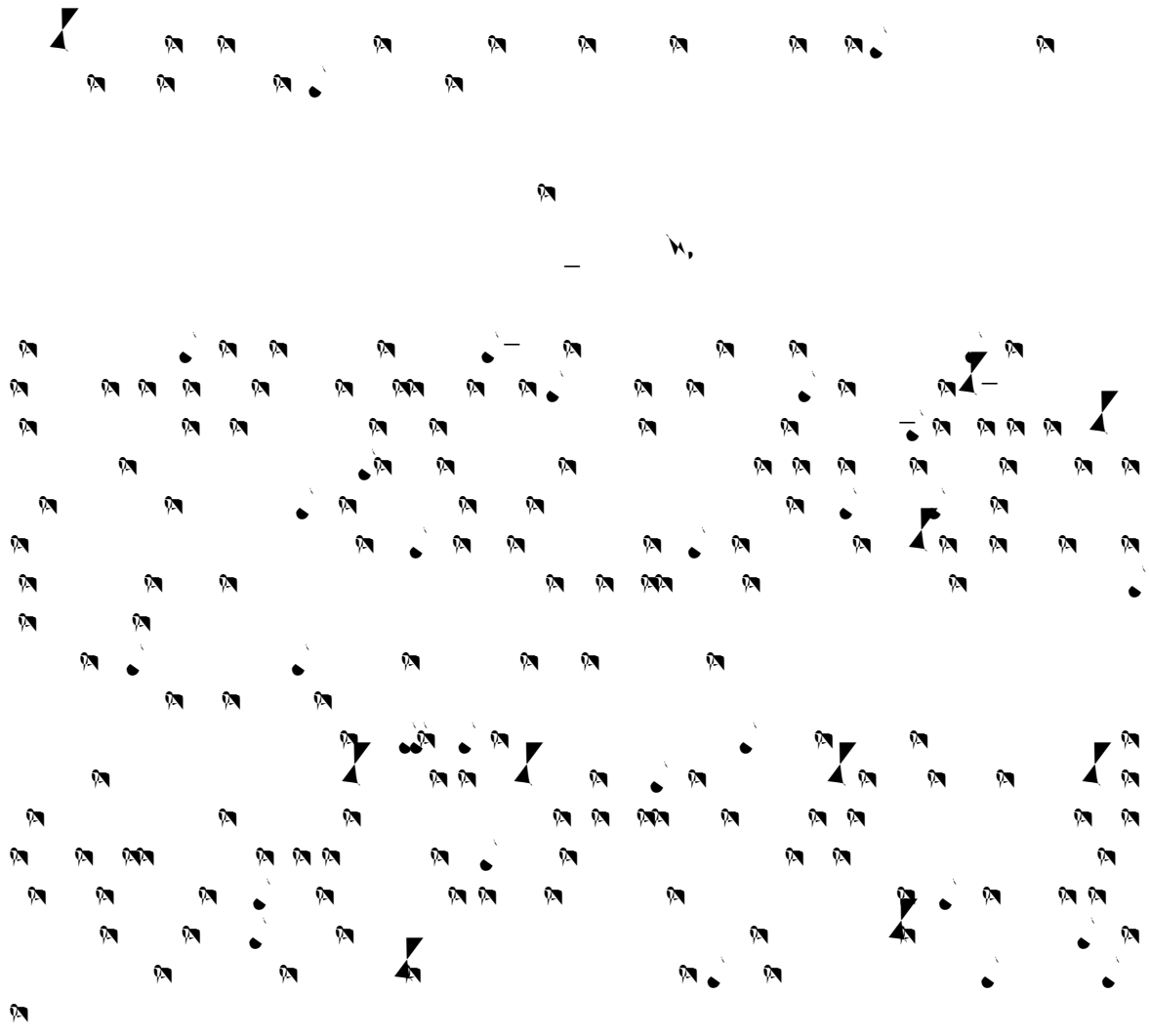
Visual acuity



syntactic models

semantic models





3.3 us rs o o t o put r

mental models

st v op nt

requirements analysis

system design *functional specification*

detailed design

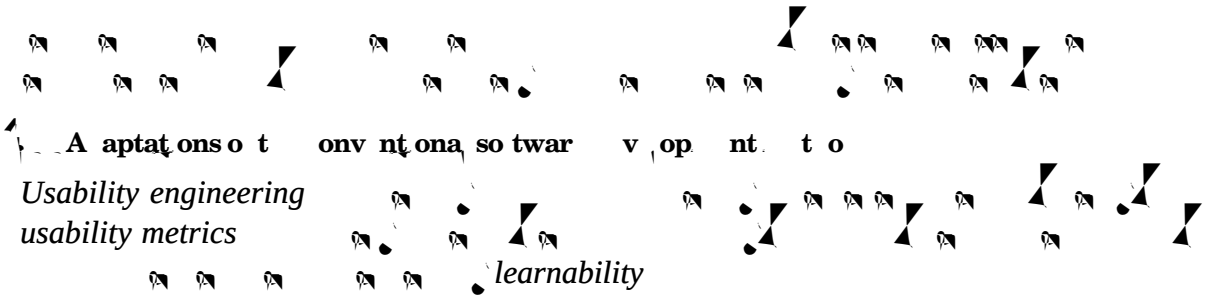
implementation

integration and testing

maintenance

waterfall

User-centred design



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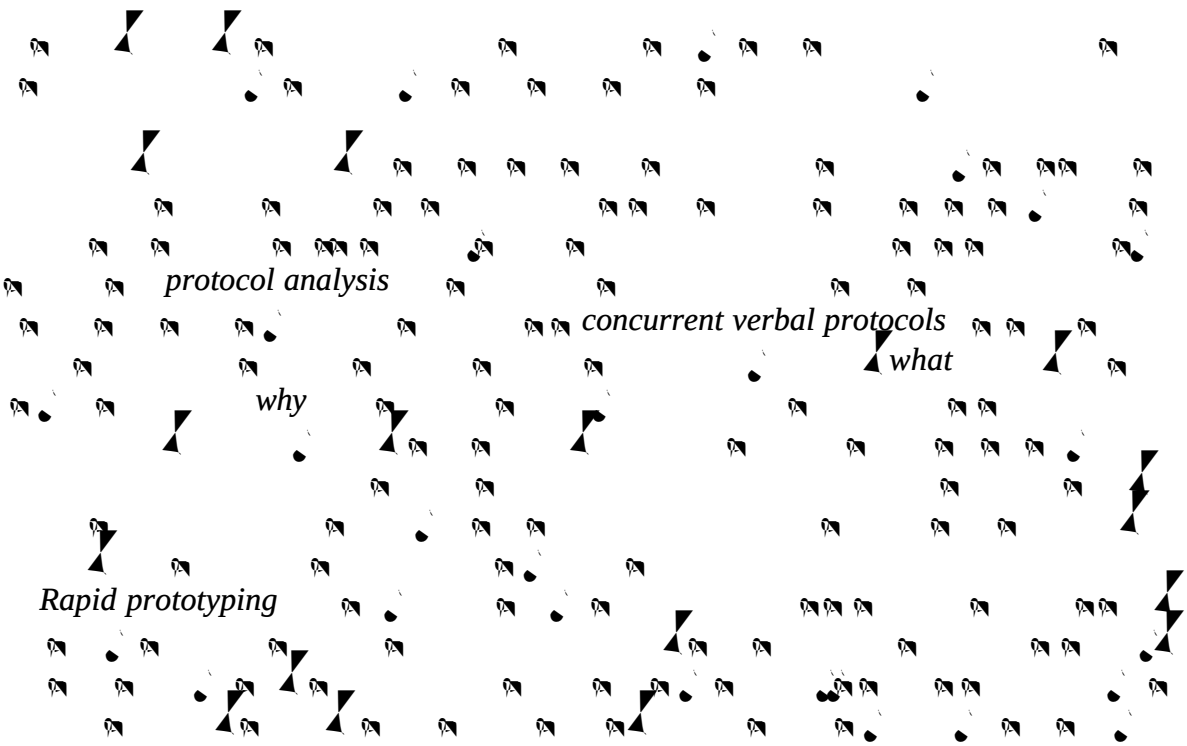
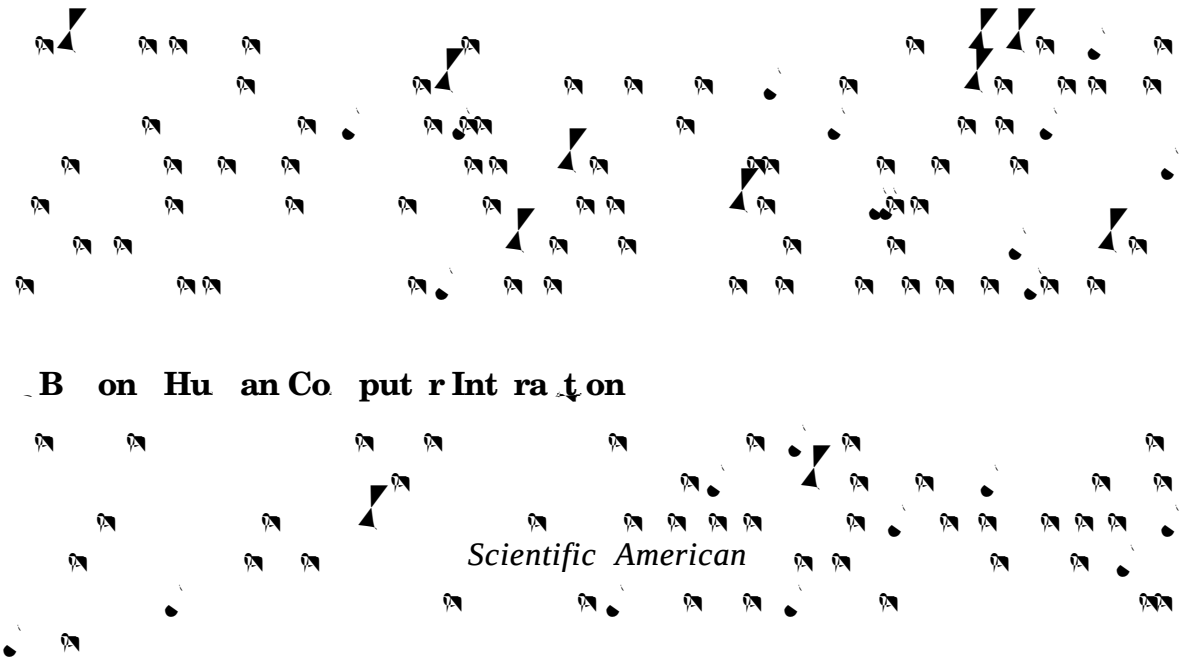
Usability engineering
usability metrics
learnability


protocol analysis
concurrent verbal protocols
what
why
Rapid prototyping

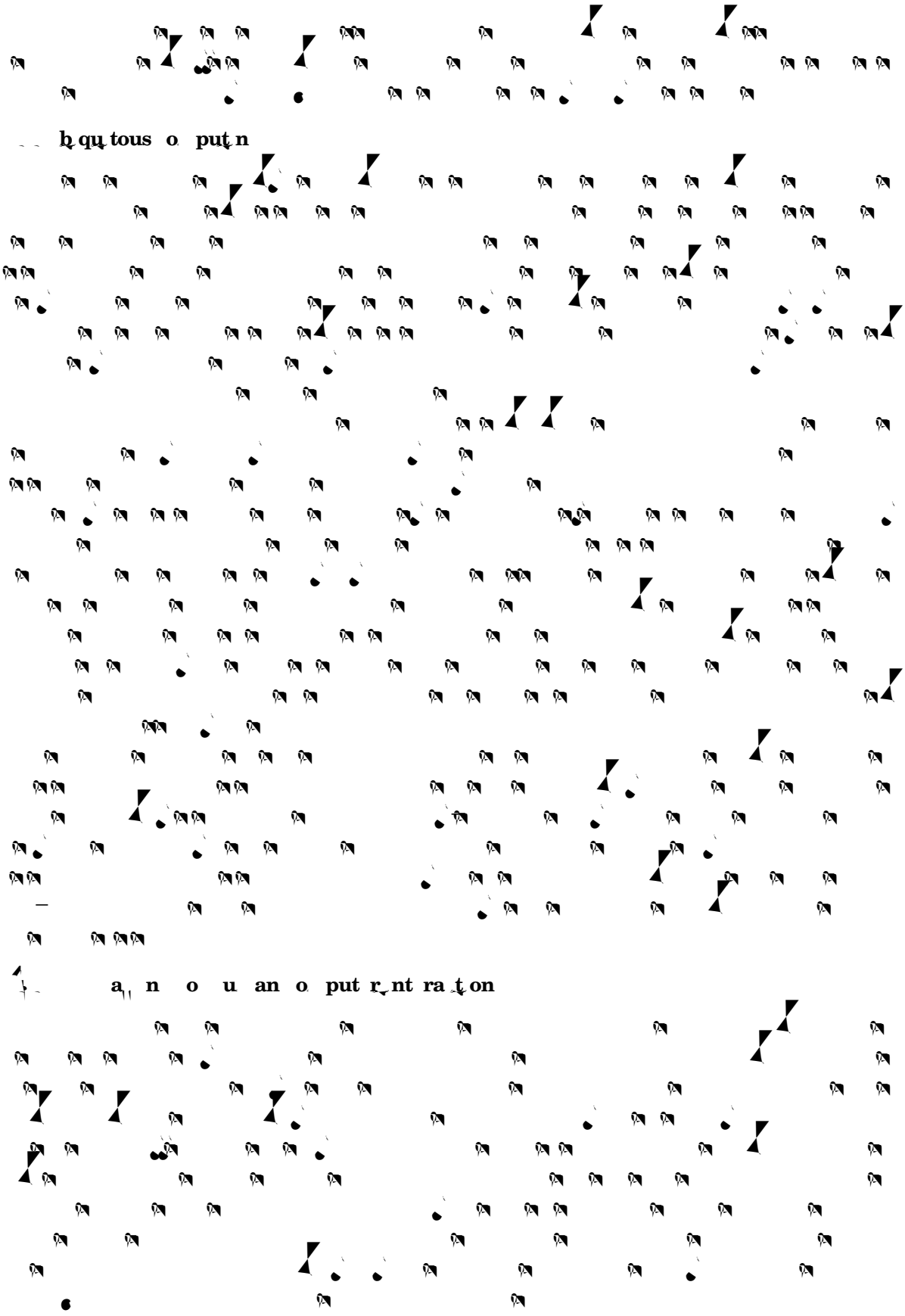
Eva uat on

Analytic evaluation

Expert evaluation


B on Hu an Co put r Int ra t on
Scientific American

3 Autonomous agents



r n s

Apple Human Interface Guidelines: The Apple Desktop Interface

Readings in Human-Computer Interaction

The Psychology of Human-Computer Interaction

Communication of the ACM

Task analysis for Human-Computer Interaction

Human-Computer Interaction

Journal of Experimental Psychology

Cognitive Processes in Writing: an Interdisciplinary Approach

Theories of multi-party interaction.

ACM CHI '91

Cognitive Skills and their Acquisition

International Journal of Man-Machine Studies

Interfacing Thought: Cognitive Aspects of Human-Computer Interaction

Human-Computer Interaction

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Psychological Review

Human Problem Solving

User Centred System Design