

WHAT MACHINES TEACH US
ABOUT HUMAN RELATIONSHIPS

The Man Who Lied to His Laptop

CLIFFORD NASS



I – Introduction

Why Machines?

II – Praise and Criticism

Question › Experiment › Result(s)

III – Take Home Message

I – Introduction

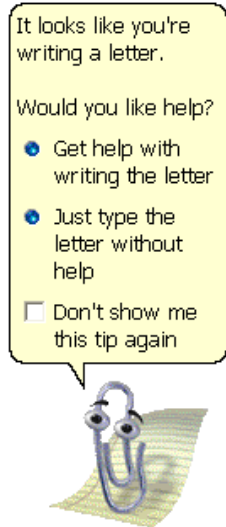
Origins in Human-Computer Interaction, then turn to Human Interaction. Why?



1: Clippy

Hated.

Why?



2: Ratings of Software

Increased drastically over short time. Only difference: Ratings on work computer, not on different "evaluation computer".

Why?



3: Car Navigation

German drivers refused to accept directions from a female voice. Lots of complaints...

Why?



Epiphany!

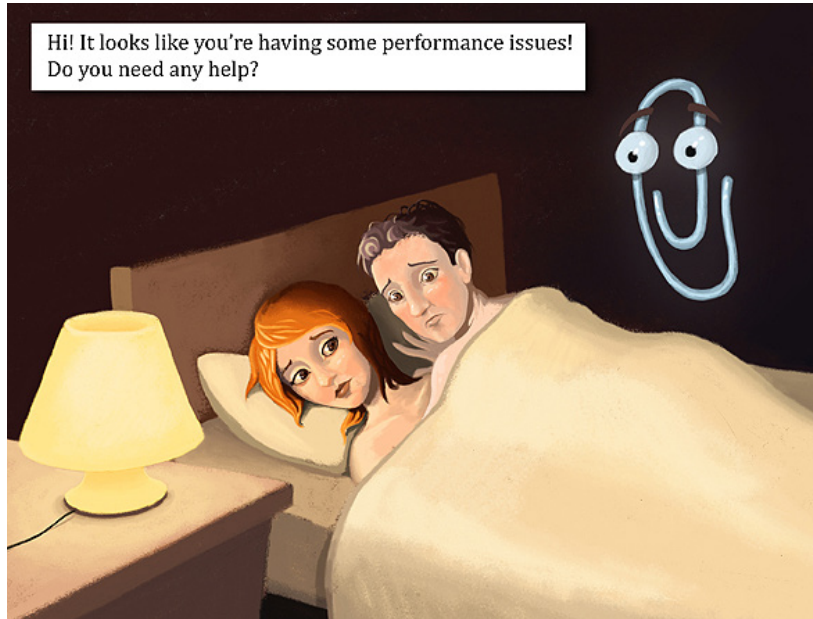
"I had seen that, given the slightest encouragement, people will treat a sock like a person..."

Does this apply to machines, too?



Clippy as social entity:

Clueless, stupid, impolite
(never learns your name, defaults
or habits),...



Solution: Scapegoating

Clippy after each suggestion:
"Was that helpful?"

If user clicks "no":

That makes me
really angry! Let's
tell Microsoft how
bad their help sys-
tem is!

Let 'em have it!

*Sends Mail to Mi-
crosoft, subject:
"Your help system
needs work"*



Ratings of Software as social Interaction

Group A

Work and evaluation:



Group B

Work:



Evaluation:



Car Navigation / Instructions by machines as social interaction



Computer teaches about:

Love ("female" subject)
and
Physics ("male" subject)

Group A, female voice:

"Computer taught love
more efficiently"

Group B, male voice:

"Computer taught physics
more efficiently"

Both groups:

"It's ludicrous to assign a
gender to a computer..."

“Humans expect computers to act as though they were people and get annoyed when technology fails to respond in socially acceptable ways.”

in short:

“Computers Are Social Actors”



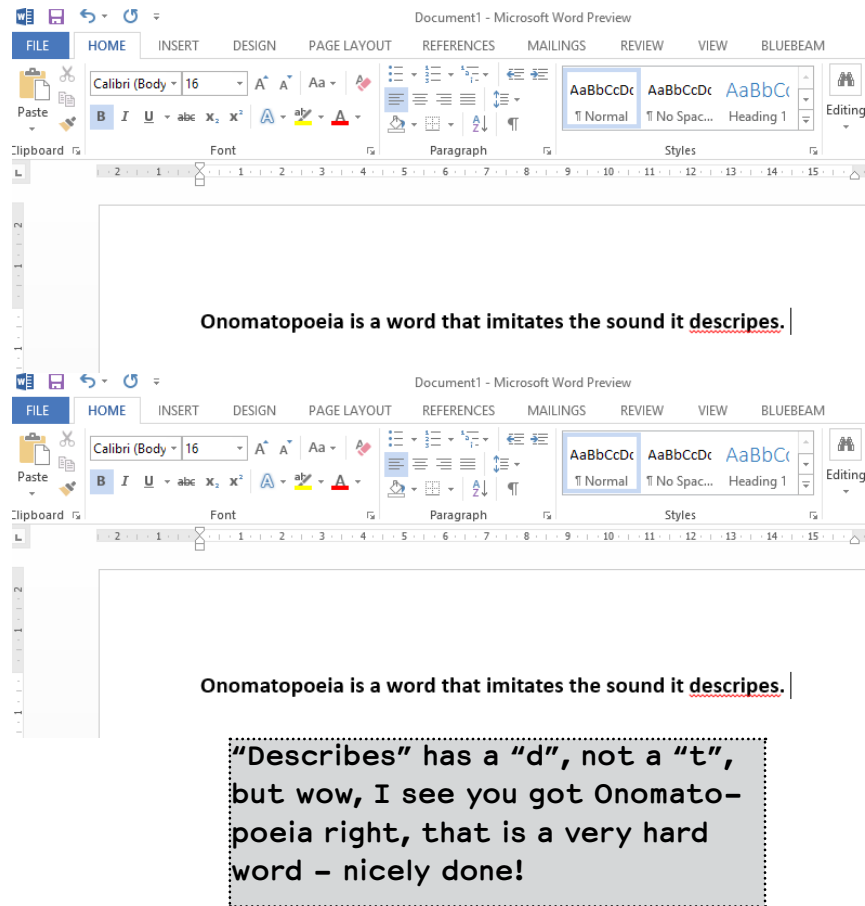
“Borrowing” from social
sciences works for HCI

Spellchecking, flattery and the limits of classical social sciences

Spellcheckers: Only critical, never encouraging or positive.

Idea: Include some flattery.

Problem: No corresponding research in social sciences. Why?



Spellchecking, flattery and the limits of classical social sciences



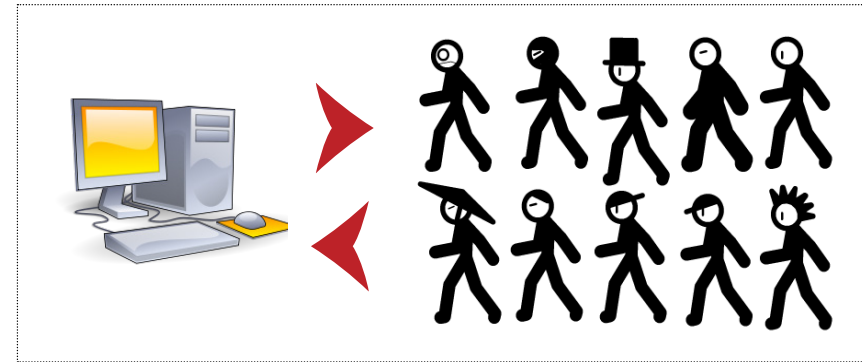
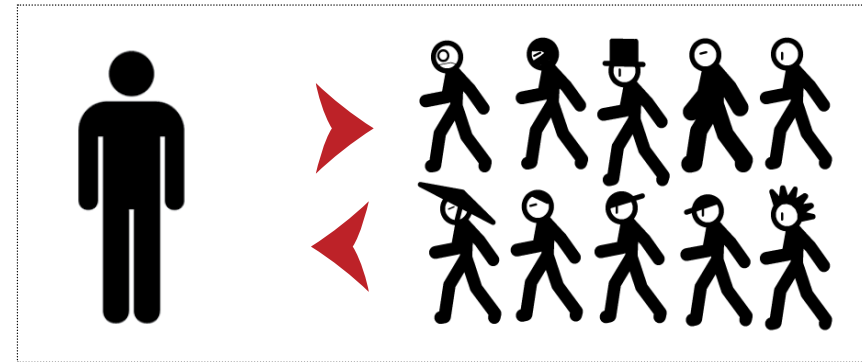
Need for rigorous experiments

but...

Human-Human-Interaction can be impossible to standardize

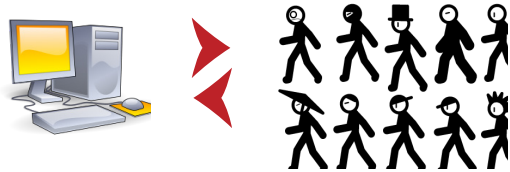
so...

Substitute Computers!



Using Computers to uncover social rules:

Is flattery useful?



Game of 20 Questions

Computer tells participants, how
“effective” their questions were
(everyone gets identical feedback).

Group A, praise:

Priming: Feedback is accurate

Group B, flattery:

Priming: Feedback is random

Glowing, positive feedback for both groups

Identical positive response in both groups



“Don’t hesitate to praise, even if you’re to sure the praise is accurate”

If Computers Are Social Actors,
HCI can be used to find
rules in social sciences



Chapter II – “Praise and Criticism”

Praise and Criticism: Basics

Evaluation is omnipresent

In work and study

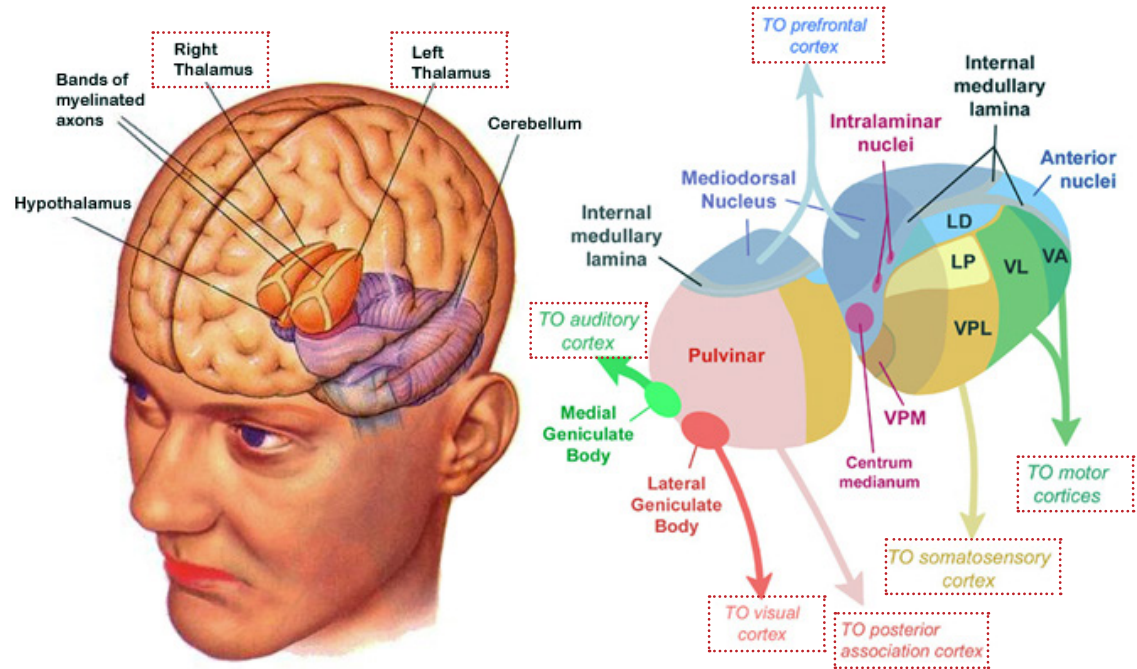
Within and between people in general.
Clue: Only 20% of all words in English
and Spanish are neutral...



Praise and Criticism: Basics

Evaluation is omnipresent

Thalamus as very basic brain structure tries to make quick and simplistic valence judgements (positive/negative) and guides responding reactions.



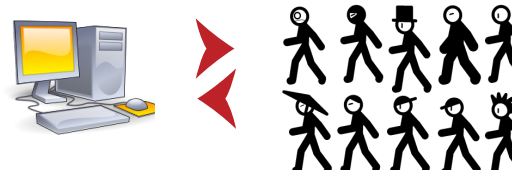
Praise and Criticism: Basics

Law of Hedonic Asymmetry

The negative is more noticeable than the positive.



How different are positive and negative feedback?



Game of 20 Questions

Computer tells participants, how “effective” their questions were.

Valence Priming	Positive Feedback	Negative Feedback
	Feedback accurate	Feedback random
Accept feedback Evaluator liked	Accept feedback Evaluator liked	No reaction Evaluator disliked



Valence of feedback affects people’s perception of evaluator.

Criticism is accepted only from believable sources.

People consider criticism more deeply than positive feedback.

How to structure feedback?

People consider criticism more deeply than positive feedback.

Law of hedonic asymmetry

Retroactive Interference:

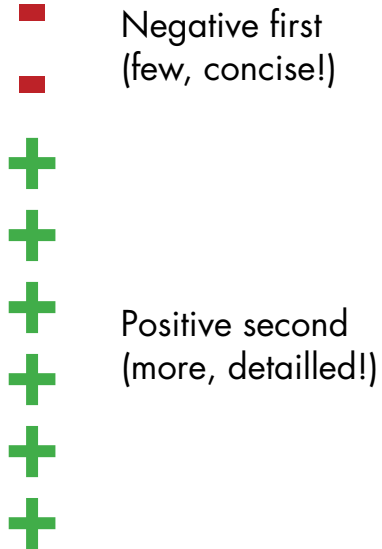
Remembering less of what happened before receiving criticism due to high activation through criticism.

Proactive Enhancement:

Remembering a lot of what happened after receiving criticism, again due to high activation through criticism



Delivering feedback efficiently:



How to deliver feedback?

"You are not driving very well.
Please be more careful!"

"You are driving quite poorly
now. It is important that you
drive better!"



Reactions:

Annoyance, anger, spiral of negativity.

Much worse driving



Couple criticism with suggestions

Make criticism precise and constructive

Give people a chance to react to criticism

How to deliver feedback?



Reactions:

No special ones (maybe more at ease)

No improvement in driving



Make praise memorable
e.g. rhyme, repetition, nicknaming,...

Surprise people with praise

Mindset and feedback

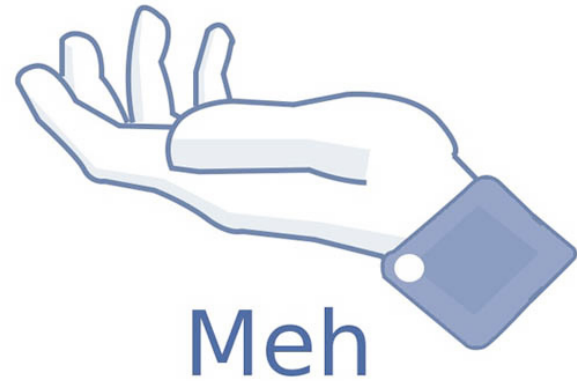
Growth mindset:

Failure is changeable through effort.



Fixed mindset:

Intelligence/Abilities are innate qualities and can't really be changed.



Mindset and feedback



Video game with impossible task

Failure ensured

Group A, growth mindset:

"You lost the game but video game skills can be improved through practice!"

Group B, fixed mindset:

"You lost. People are born with certain skills, you are not a talented video game player."

Rating: Estimated difficulty and interest in playing 20 other games (half described as easy, half as hard)

Group A: Preferred harder games

Group B: Not interested in hard games



Mindset of the evaluator has influence. Encourage growth mindset!

Can praise be negative, too?



1. Pretended assessment of participant's driving skills

2. Racing game

Group A, fixed mindset:

"Track designed as very easy for you. You will drive very well even if you don't try hard."

Group B, growth mindset:

"Track designed to be a challenge for you but if you try hard, you can manage it!"

Driving: Groups A and B on the same track (extremely difficult)

Group A: Frustrated and negative

Group B: More fulfilled, enjoyed challenge



Don't tell people that they are "destined to succeed".
Again: Be growth-minded!

Judging the judges



Tutoring PC
prepares participant
for test



Testing PC tests
participant



Evaluation PC evaluates
Tutoring PC

Group A: Positive Eval.
Group B: Negative Eval.



Reactions:

Positive evaluator liked, negative disliked

Positive evaluator viewed as more helpful

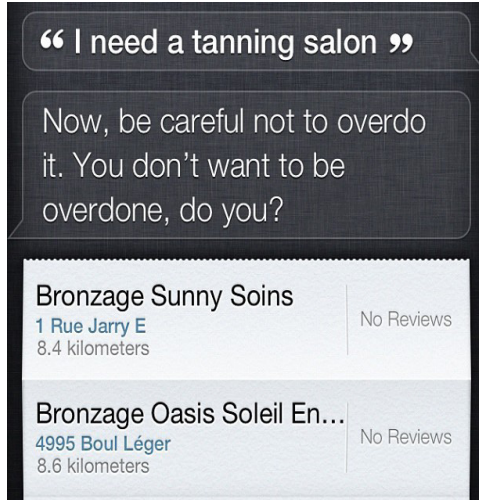
Negative evaluator viewed as more intelligent



Giving feedback will change other's
perceptions of yourself

Decide if you want to seem "clever and
contemptible" or "kind and clueless"

Perception of Self-Evaluation



Group A, system blames self:

"This system did not understand you, please repeat."

Group B, system blames user:

"You must speak more clearly. Please repeat."

Group A: System liked, participants willing to buy books

Group B: System disliked, participants less willing to buy books, but: System perceived as more competent!

Voice recognition system, task:
Ordering books from Amazon

Failure (standardized) was ensured

Inferences at this point difficult because participants had a stake in the criticism. Next experiment for validation.

Perception of Self-Evaluation in others

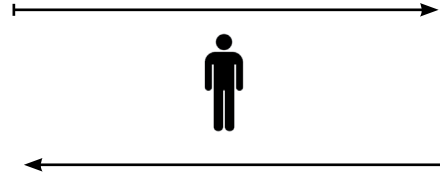


Tutoring PC prepares participant for test

Evaluates itself:

Group A: Positive Eval.

Group B: Negative Eval.



Testing PC tests participant

Reactions (confirm previous experiment):

Modesty liked

Self-praise disliked



Modesty undermines your perceived competence (but can make you a better salesman)

Never praise yourself if you can have someone else do it...

Praise others frequently and emphasize effort (growth mindset). Mutual praise helps both participants.

Criticize carefully, short and specific. Give time to react. State ways to improve and again, emphasize effort!

Take Home Messages

Modesty/self-criticizing can win you friends but will influence your perceived competence...

... praising yourself and criticizing others will make you seem competent but not get you liked.

Use appropriately!

When giving feedback: Few and decisive negatives first, then ways to improve and then exhaustive, detailed positives!