



# Affect Control Theory

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# Recap

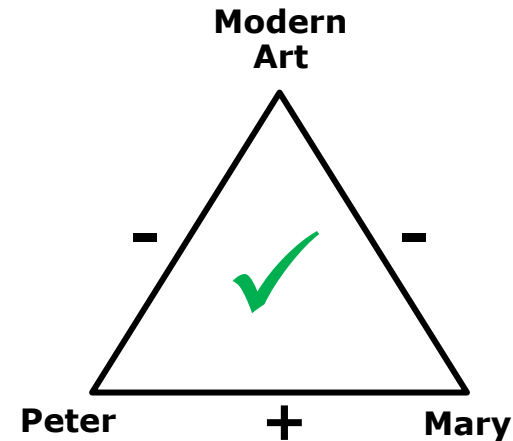
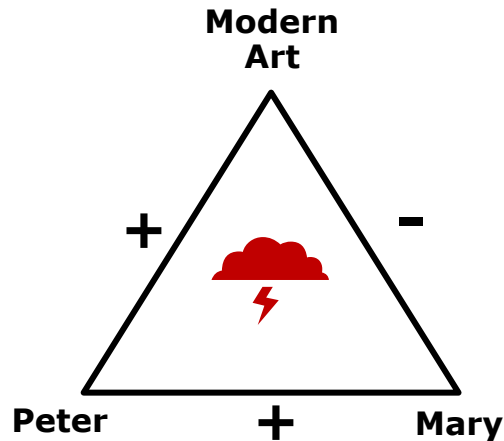
- Emotions are multi-level: From body to culture
- Evaluation, Potency, Activity (EPA) “allow the mind and body to communicate” (Clare & Pappas, 2007)
- Micro-social perspective: Emotions allow efficient coordination between agents
- Macro-social perspective: Emotions and actions are based on culturally shared conceptual structures => Maintenance of the social order



# Balance

(or congruity/consistency/coherence/dissonance avoidance...)

(e.g., Heider, 1946; Osgood & Tannenbaum, 1955; Festinger, 1957; Thagard, 2000)



- Basic human motive: “orderly representations”
- Incoherent representations motivate corrective action
- The role of identity: Align experiences and actions with situational self sentiments: Who am I?



# Twenty-Statements Test (Kuhn, 1960)

**I am...**

1. \_\_\_\_\_

2. \_\_\_\_\_

3. \_\_\_\_\_

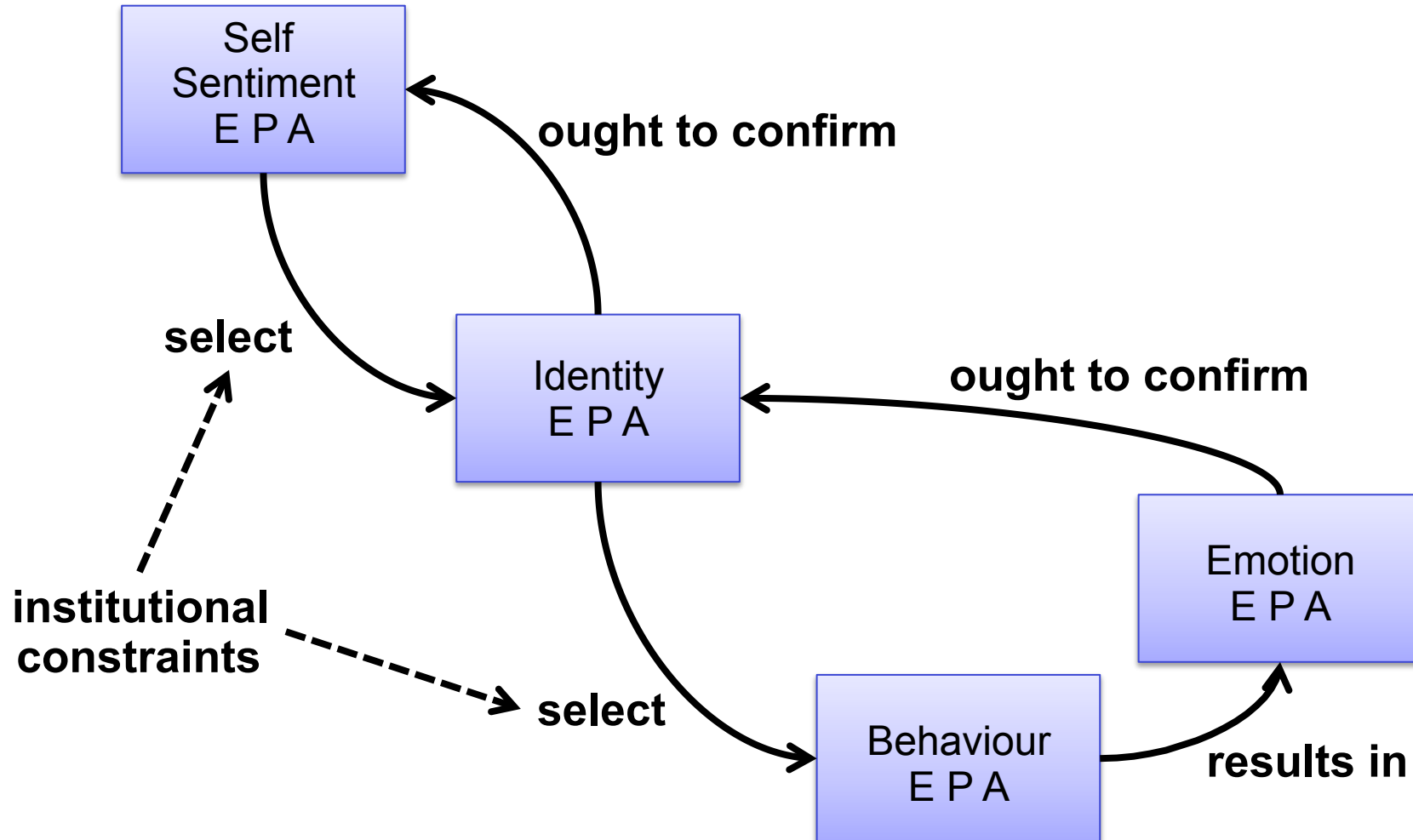
...

20. \_\_\_\_\_



# Affect Control Theory at a Glance

(Heise, 1979; 2007; MacKinnon & Heise, 2010)

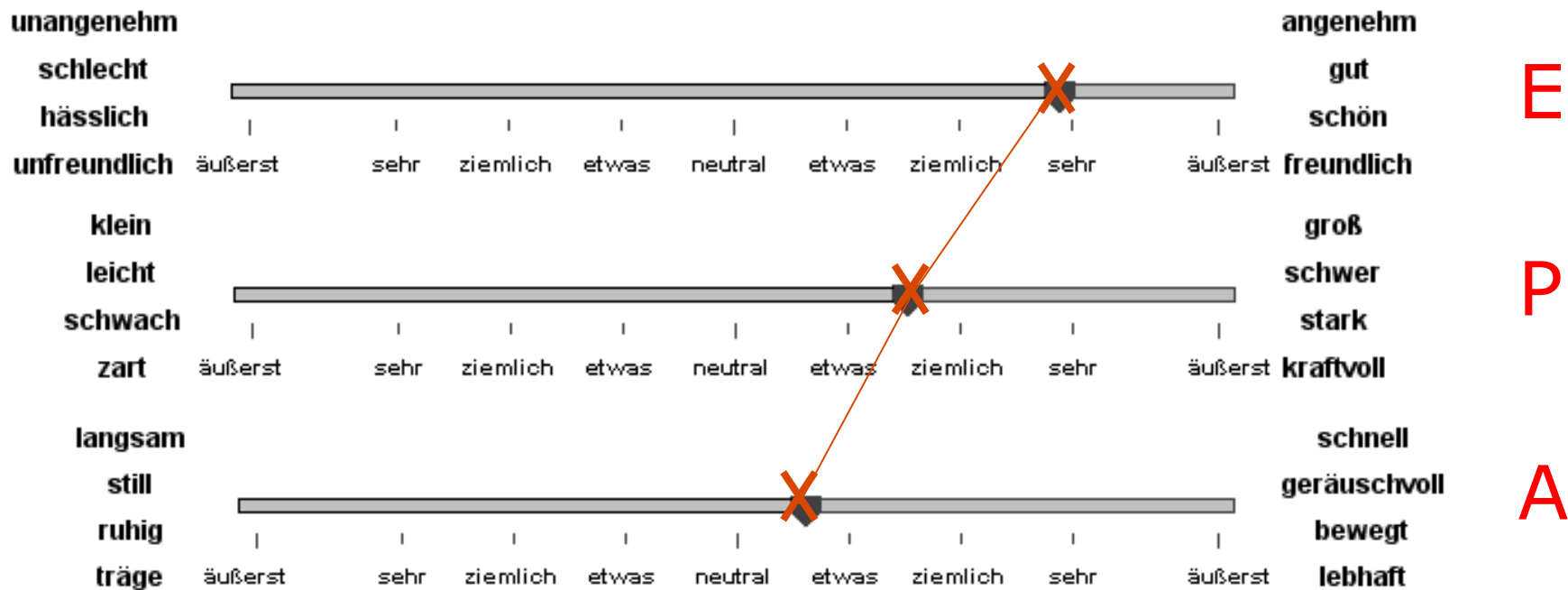




# Impression Formation

(e.g., Schröder, 2011; Smith, Matsuno, & Umino, 1994; Smith-Lovin, 1987)

a mother (2.9 / 1.5 / 0.6)



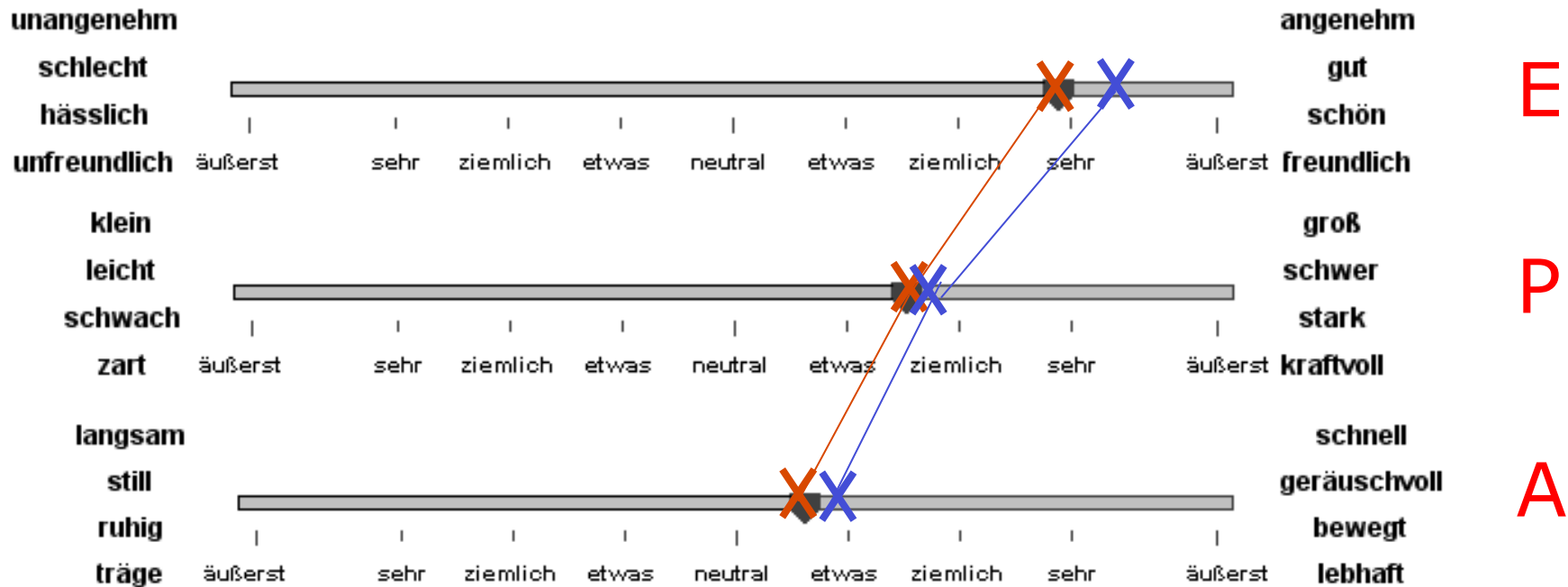


# Impression Formation

(e.g., Schröder, 2011; Smith, Matsuno, & Umino, 1994; Smith-Lovin, 1987)

A mother plays with a child. (3.4 / 1.8 / 0.9)

a mother (2.9 / 1.5 / 0.6)



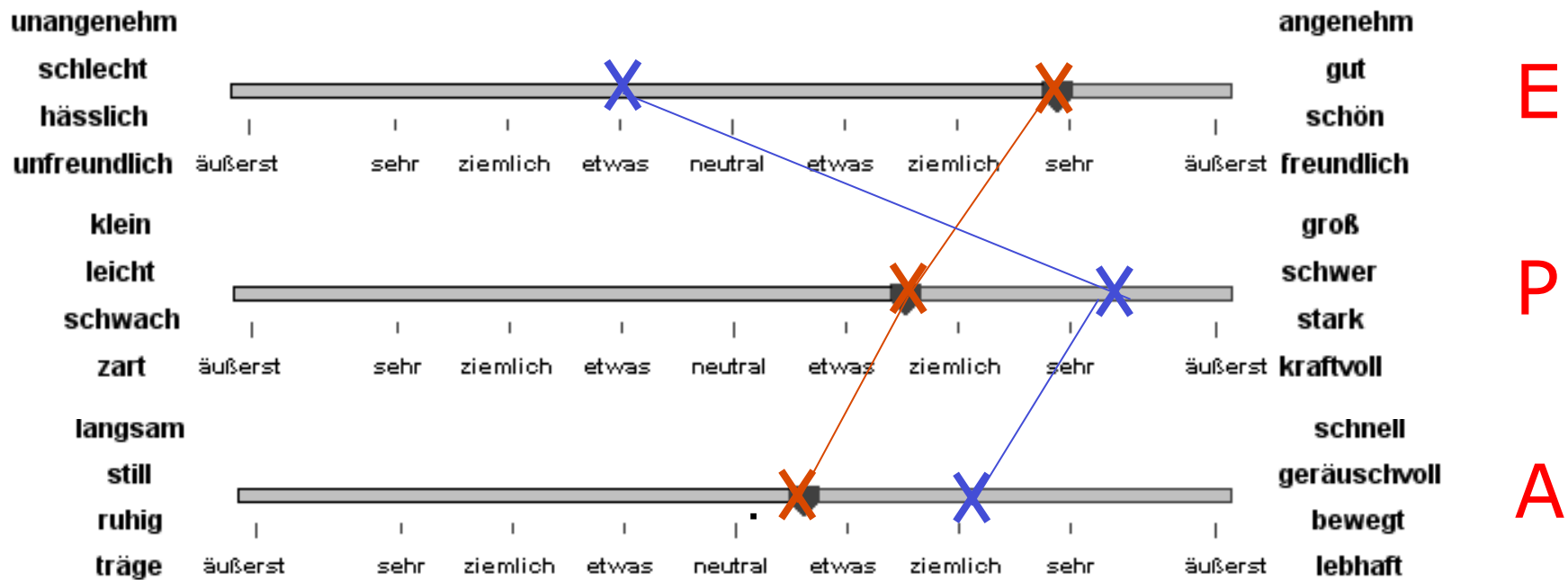
Transient Impressions vs. Fundamental Sentiments



# Deflection: (Transient-Fundamental)<sup>2</sup>

A mother beats a child. (-1.0 / 3.5 / 2.2)

a mother (2.9 / 1.5 / 0.6)



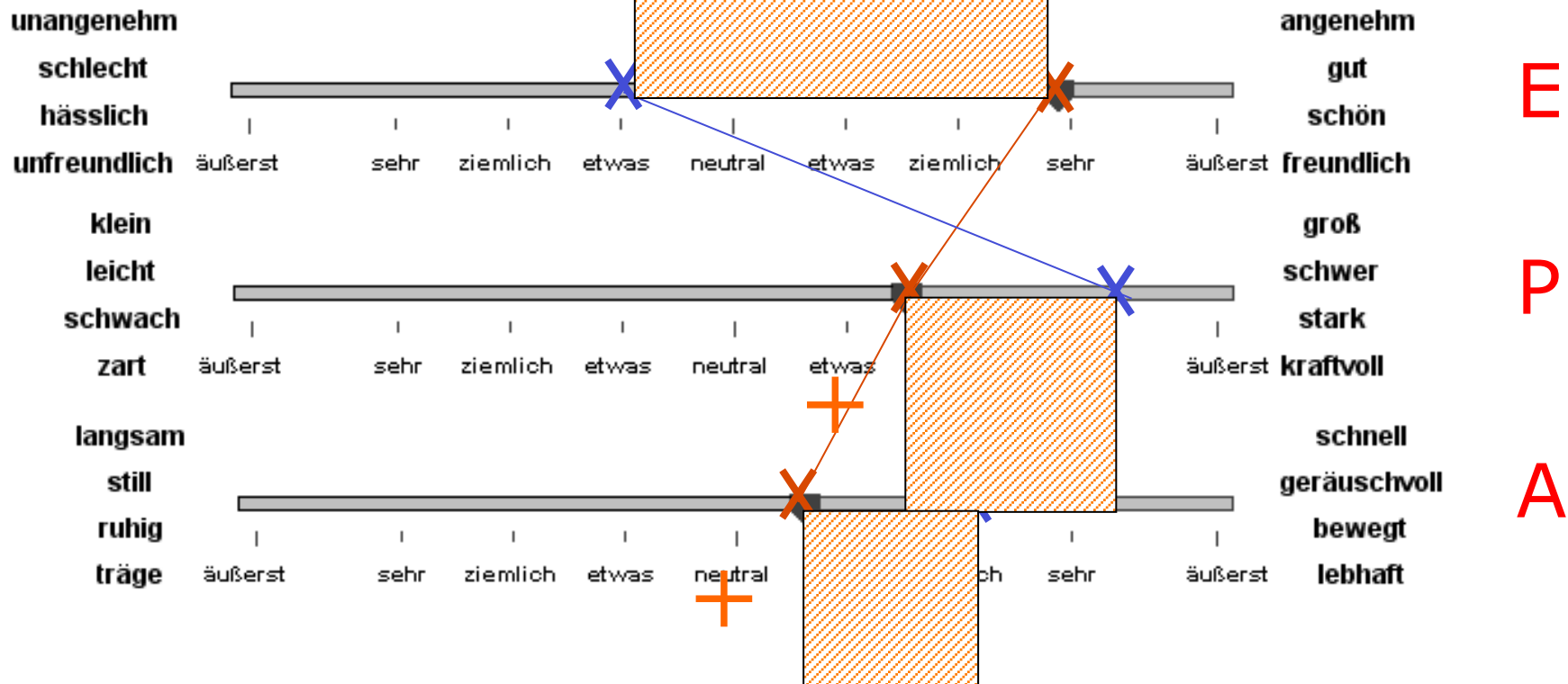




# Deflection: (Transient-Fundamental)<sup>2</sup>

A mother beats a mother ( / 3.5 / 2.2)

a mother (6)





## Example Equation: Impression of Actor (E)

$$\begin{aligned} A_e' = & - .38 + .42A_e - .11A_a + .47B_e + .11O_e \\ & + .05A_eB_e + .09A_aO_e + .09A_aO_a + .04B_eO_e \\ & - .07B_eO_a - .13B_pO_e + [\dots] \end{aligned}$$



## Example Equation: Impression of Actor (E)

$$A_e' = - .38 + .42A_e - .11A_a + .47B_e + .11O_e \\ + .05A_eB_e + .09A_aO_e + .09A_aO_a + .04B_eO_e \\ - .07B_eO_a - .13B_pO_e + [...]$$

↓ stability                      ↓ behaviour congruence



## Example Equation: Impression of Actor (E)

$$A_e' = - .38 + .42A_e - .11A_a + .47B_e + .11O_e$$
$$+ .05A_e B_e + .09A_a O_e + .09A_a O_a + .04B_e O_e$$
$$- .07B_e O_a - .13B_p O_e + [...]$$

Diagram illustrating the equation and its components:

- $.42A_e$  is associated with **stability**.
- $.47B_e$  is associated with **bevaious congruence**.
- $.05A_e B_e$  and  $.04B_e O_e$  are associated with **balance effects**.



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$$- .07B_e O_a - .13B_p O_e + [\dots]$$

Diagram illustrating the components of the equation and their conceptual links:

- $.42A_e$  is linked to **stability**.
- $.47B_e$  is linked to **bevaious congruence**.
- $.05A_e B_e$  and  $.04B_e O_e$  are linked to **balance effects**.
- $.13B_p O_e$  is linked to **rejection of power**.



# Interact: Simulation of Social Interaction

(Heise, 1997)

Deutsch Germany07 Fortgeschrittene Funktionen Interaktion analysieren

Wahrnehmung von Person 1 weiblich. Filter

Person 1 [\_,Mutter],schlagen,Person 2 [\_,Kind]

Actor emotions	Object emotions
2,50, zornig 2,61, wuetend 2,72, empoert -1,15 4,71 2,12	1,19, aengstlich 1,38, wehleidig 1,98, bange -1,66 -4,14 -1,54

Actor behaviors	Object behaviors
kommendes 0,41, schwatzen mit 0,60, spielen mit 0,67, trinken auf 2,21 0,73 2,25	1,13, feilschen mit 1,59, ereifern ueber 1,80, vollschwätzen -0,48 0,58 3,24

Actor attributes	Object attributes
1,66, gewalttaetig 2,00, skrupellos 2,04, grausam -4,85 3,63 2,40	4,98, unterwuerfig 5,34, selbstunsicher 5,39, feige -4,51 -7,82 -1,89

Actor labels	Object labels
3,69, Stiefmutter 3,90, Kinderschaender 4,70, Schwiegermutter -4,03 2,81 2,64	5,03, Stiefkind 5,43, Stieftochter 5,50, uneheliches Kind -2,46 -5,46 -0,90

Deflection = 47.0



# GroupSimulator: Dynamics in Small Groups

(Heise, 2013)

QuickTime Player File Edit View Share Window Help

GroupSimulator

http://www.indiana.edu/~socspsy/ACT/SmallGroups/GroupSimulator.html

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Scroll down for information

male-goodness 0.8 female-goodn... 1.2 group-size 12

male-dominan... 1.6 female-domin... 0.7 individuality 1.0

male-activati... -0.5 female-activati... 0.0 initial-tension 1.0

percent-females 35 equations US unisex

actor-choice max self-tension object-choice min event tension

reciprocal-act... 0.8 address-grou... 0.4

On grp-act-to-all On lines-to-gro...

ticks: 1 normal speed

view symlog On dynamics

Origated, Received

freq 10 0 rank 28.8

IPA-coding-basis 1978 sentiments

IPA Codes

100 0

- 1\_solidarity
- 2\_release
- 3\_agrees
- 4\_suggests
- 5\_opines
- 6\_orients
- 7\_questions
- 8\_prompts
- 9\_entreats
- 10\_disagrees
- 11\_tension
- 12\_argues

0 IPA cat... 13

Processes

- Tension
- E
- P
- A
- Links
- axis

graph-EPA-variables none

behavior-type verbal

read-file

On save-IO On fast

powered by NetLogo

WEBSITES



# Evidence – Verbal Communication

(Schröder & Scholl, 2009)

**Motivator I**

**Geschäftsführer**

Motivator

Datum des Tages  
**12.2.0**

**STOP**

**Abteilungsleiter der Teilbereiche der Firma** .... zu einer Besprechung rufen!

Einkauf	Produktion	Verkauf
Aussagen: <b>0</b>	Aussagen: <b>0</b>	Aussagen: <b>0</b>
<input type="checkbox"/> neue sofort melden!	<input type="checkbox"/> neue sofort melden!	<input type="checkbox"/> neue sofort melden!

**Magic Monster GmbH & Co**

**Informationen über die Firmenentwicklung**

Gesamtvermögen	Gesamtarbeitszufriedenheit	Diagramm unten wählen
1811T	527	Globale Firmendaten ▶
		Einkaufsdaten ▶
Stand: 1631T	Stand: 256	Produktionsdaten ▶
		Verkaufsdaten ▶

**Diagramm unten wählen**

- Globale Firmendaten ▶
- Einkaufsdaten ▶
- Produktionsdaten ▶
- Verkaufsdaten ▶

**möglicher Verkaufspreis**

- gezielter Verkaufspreis
- verkaufte Produktionseinheiten
- Gesamt-Herstellungskosten
- Arbeitszufriedenheit in der Abteilung





# Evidence – Nonverbal Communication

(Schröder, Netzel, Schermuly, & Scholl, 2013)

- Dyadic interactions videotaped, subdivided into discrete events, and coded for interpersonal affect.
- Comparison: INTERACT predictions of sequences vs. observed transitions between affective expressions.



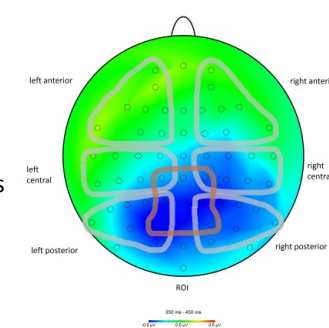
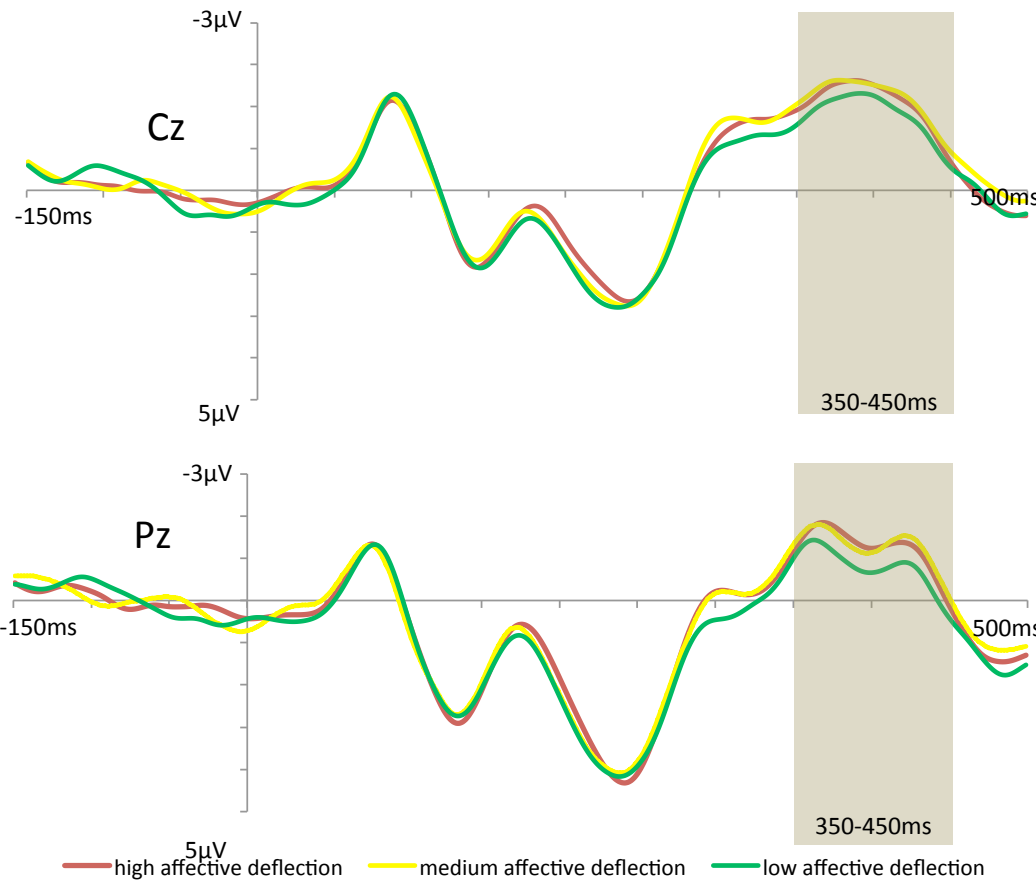
## Behavioral Markers:

- E: smile, laugh, small physical distance
- P: posture, relaxation
- A: variation in speech, gestural activity



# Evidence – N400 Component of EEG

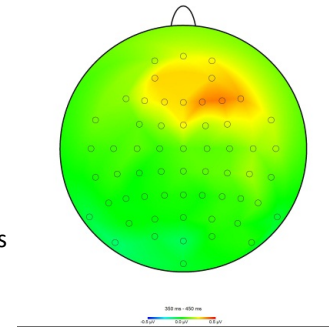
(Schauenburg, Ambrasat, von Scheve, Schröder, & Conrad, in preparation)



Cluster,  
region x  
deflection:  
 $p = .009^*$

ROI, deflection:  
 $p = .004^*$

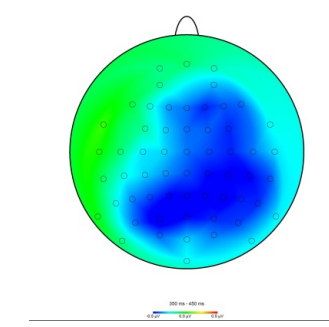
High vs. low deflection



Cluster  
region x  
deflection:  
 $p = .249$

ROI, deflection:  
 $p = .699$

High vs. medium deflection



Cluster,  
region x  
deflection:  
 $p = .023^*$

ROI, deflection:  
 $p = .020^*$

Medium vs. low deflection

## Results (N=26)

Cluster ANOVA: region (3) x hemisphere (2) x deflection (3):

Interaction *region x deflection*,  $F(4, 100) = 3,307$ ,  $p = .032^*$ ,  $\eta^2 = .117$

Region of Interest ANOVA: deflection (3):

Main effect *deflection*,  $F(2, 50) = 4,565$ ,  $p = .021^*$ ,  $\eta^2 = .154$

All *p-values* are Greenhouse-Geisser corrected



# Limitations of Affect Control Theory

- Many social situations are ambiguous, interpretations are probabilistic.
  - The consensus paradox: People agree on meanings, but there are subtle differences.
  - Identities and their meanings change.
  - People can have multiple identities.
  - People have external goals, which sometimes compete with the affect control mechanism.
- => BayesACT (next week)