Should I stay or Should I Go?

From Threatening Emotion Perception to Avoidant Postural adjustments

C2S - URCA

Vendredi 20 Septembre

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Theoretical Background

- Emotion As Social Information / Emotion is for Social Influence (van Kleef, 2009; van Kleef et al., 2011)

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- Adaptive approach/avoidance response to positive vs negative faces? (Eliot & Covington, 2001; Bradley et al., 1990, 2001)

  Positive = Approach

  Negative = Avoidance

  ==> Mixed findings

Theoretical Background

- Emotion As Social Information / Emotion is for Social Influence (van Kleef, 2009; van Kleef et al., 2011)

Angry faces = I’m going to punch you!

Fear faces = Please stay away from me!

Sad faces = Please help me

Reacting to a threatening face

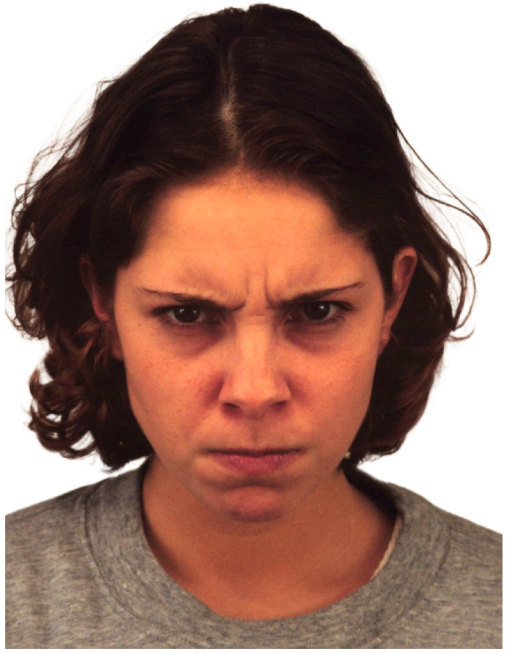
- Adaptive distance regulation = **Perception-Appraisal-Response** process (~ Ochsner & Gross, 2014)

Bucks et al., 2008

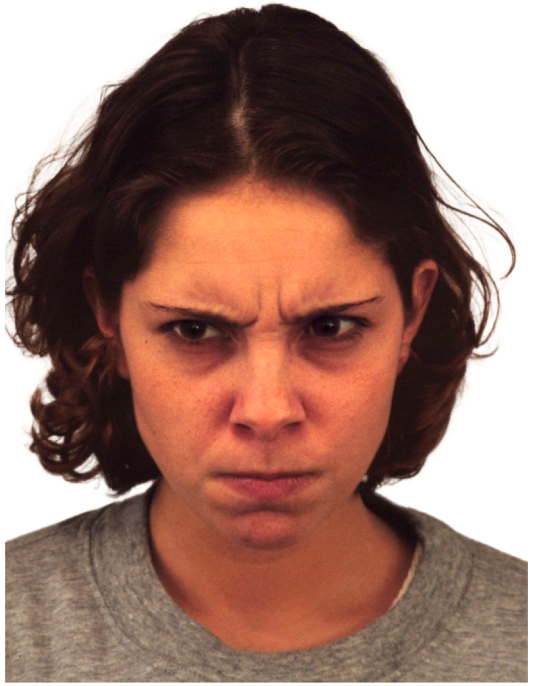
« Anger! »

Gaze direction

- Direct = **I’m going to punch you!**



- Angry
  - Deviated = I’m going to punch this broken car!

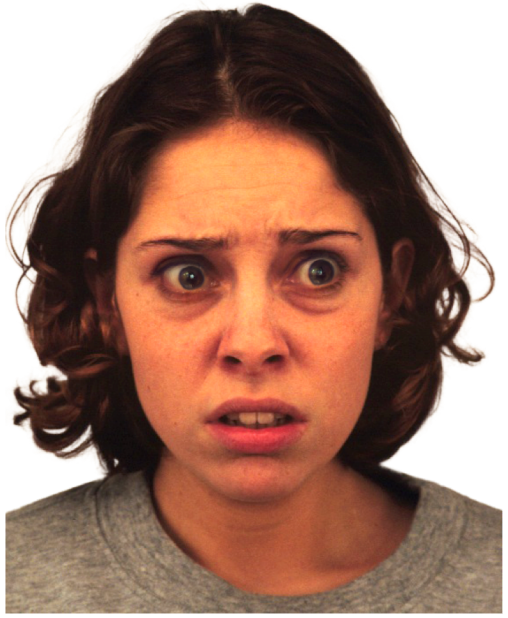


Sander et al., 2007

Gaze direction

- Direct = Please don’t get near me!

- Fear
  - Deviated = **Watch out! A snake!**



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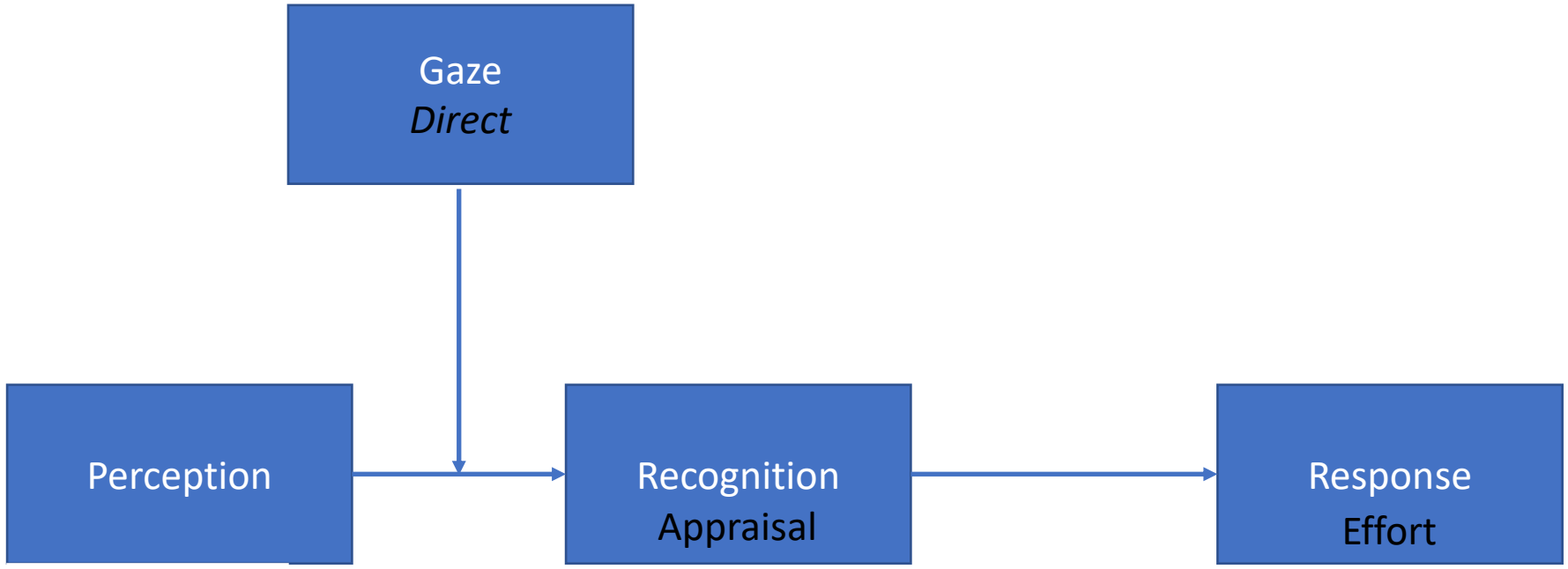
The case of Direct Anger



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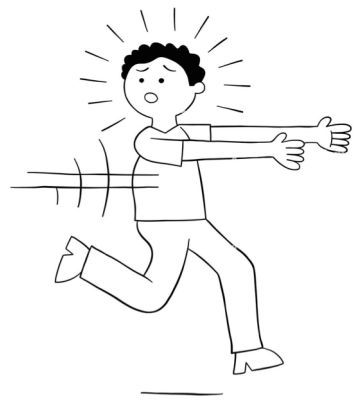

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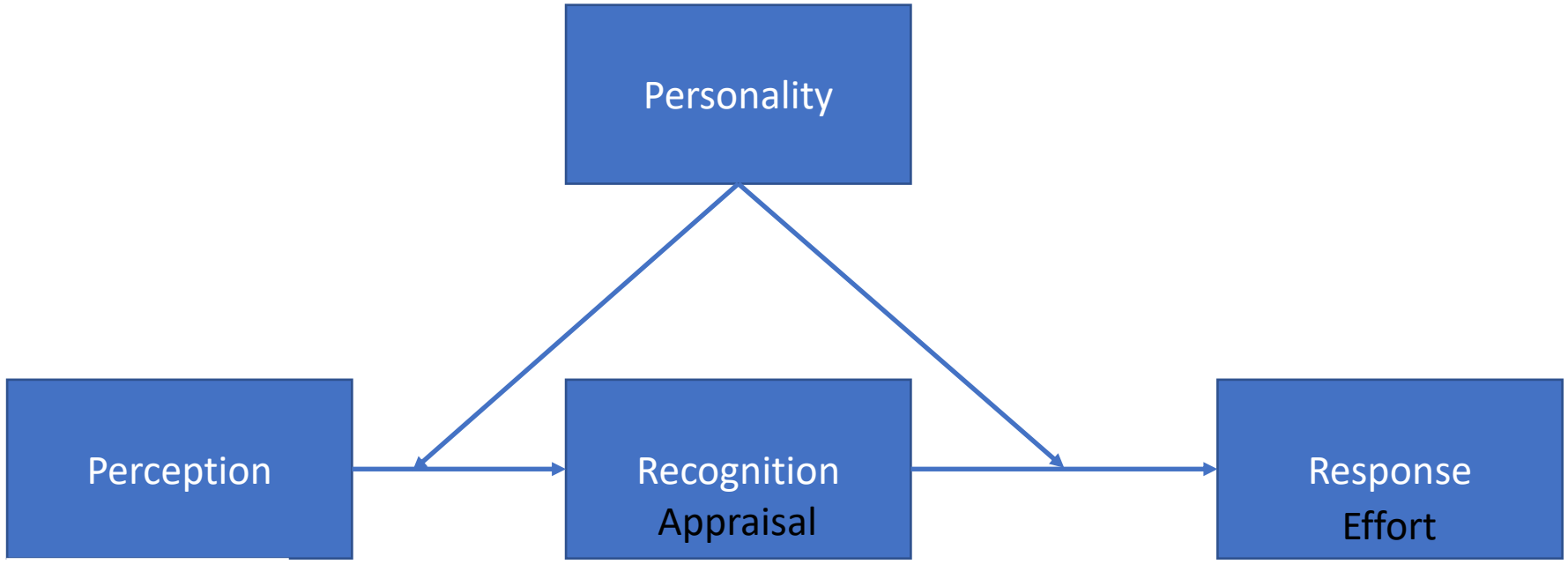

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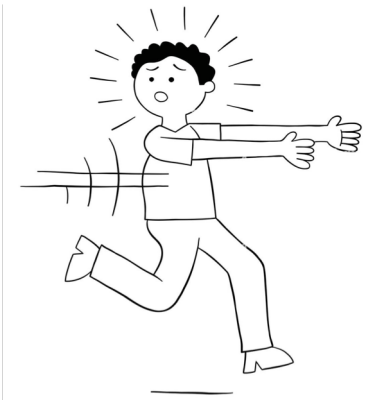
« Anger! »



Big Five

➔ *Do I care?*

« *Personality traits are probabilistic descriptions of* ***relatively stable patterns of emotion, motivation, cognition, and behavior****, in response to* ***classes of stimuli that have been present in human cultures over evolutionary time*** »
De Young (2015, p. 3)

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Big Five

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De Young (2015, p. 3)

- Traits are associated with cybernetic functions:
  - **Neuroticism** = Threat aversion
  - **Extraversion** = Reward sensitivity
  - **Agreableness** = Cooperation facilitation/social coordination
  - **Openness** = Cognitive exploration/information engagement
  - **Conscientiousness** = Abstract / long term goal pursuit

De Young (2015)

Schizotypal personality

- A mild, non-clinical, form of schizophrenia

Raine et al. (1994)

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- **3 dimensions**
  - Cognitive perceptive dimension
    Ideas of reference, Magical thinking, and unusual perceptual experiences
  - Disorganization dimension
    Odd speech and behavior
  - Interpersonal dimension
    Paranoid ideation, Social anxiety, No close friends

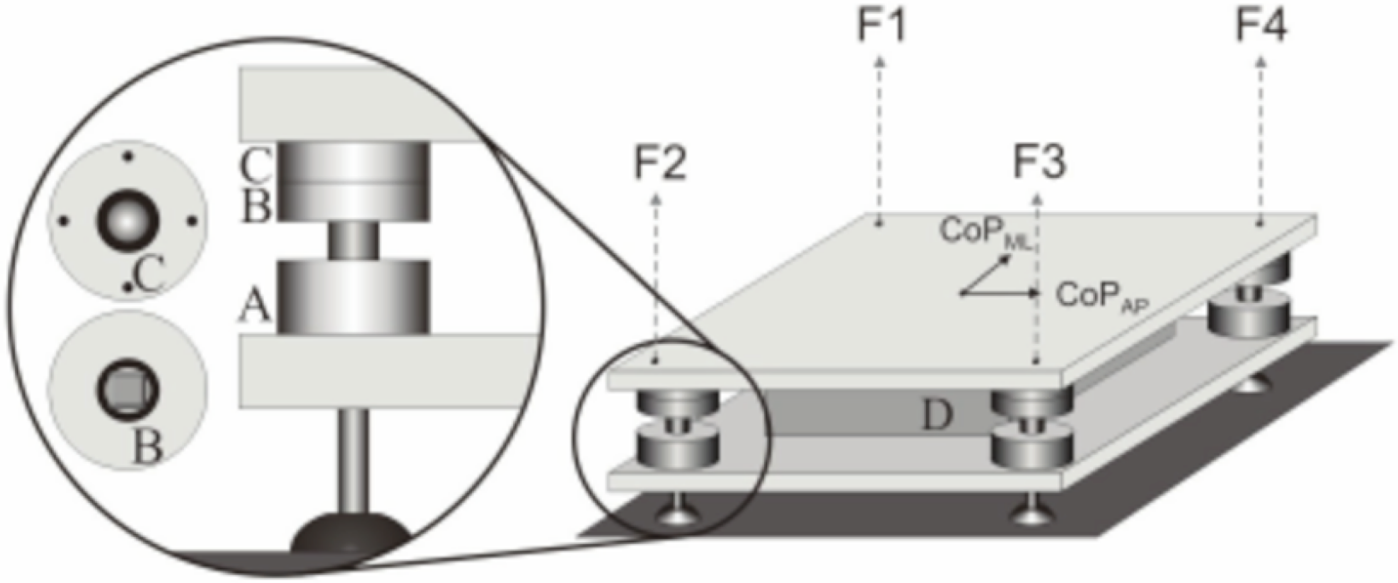
Raine et al. (1994)

To sum up

- Reacting to a threatening emotional expression requires
  - **identifying the social message behind the observed expression**
    - *that can be modulated through gaze direction*
  - **identifying its relevance for individuals**
    - *determined by personality traits, e.g., neuroticism regulating threat-sensitivity*

Body sway

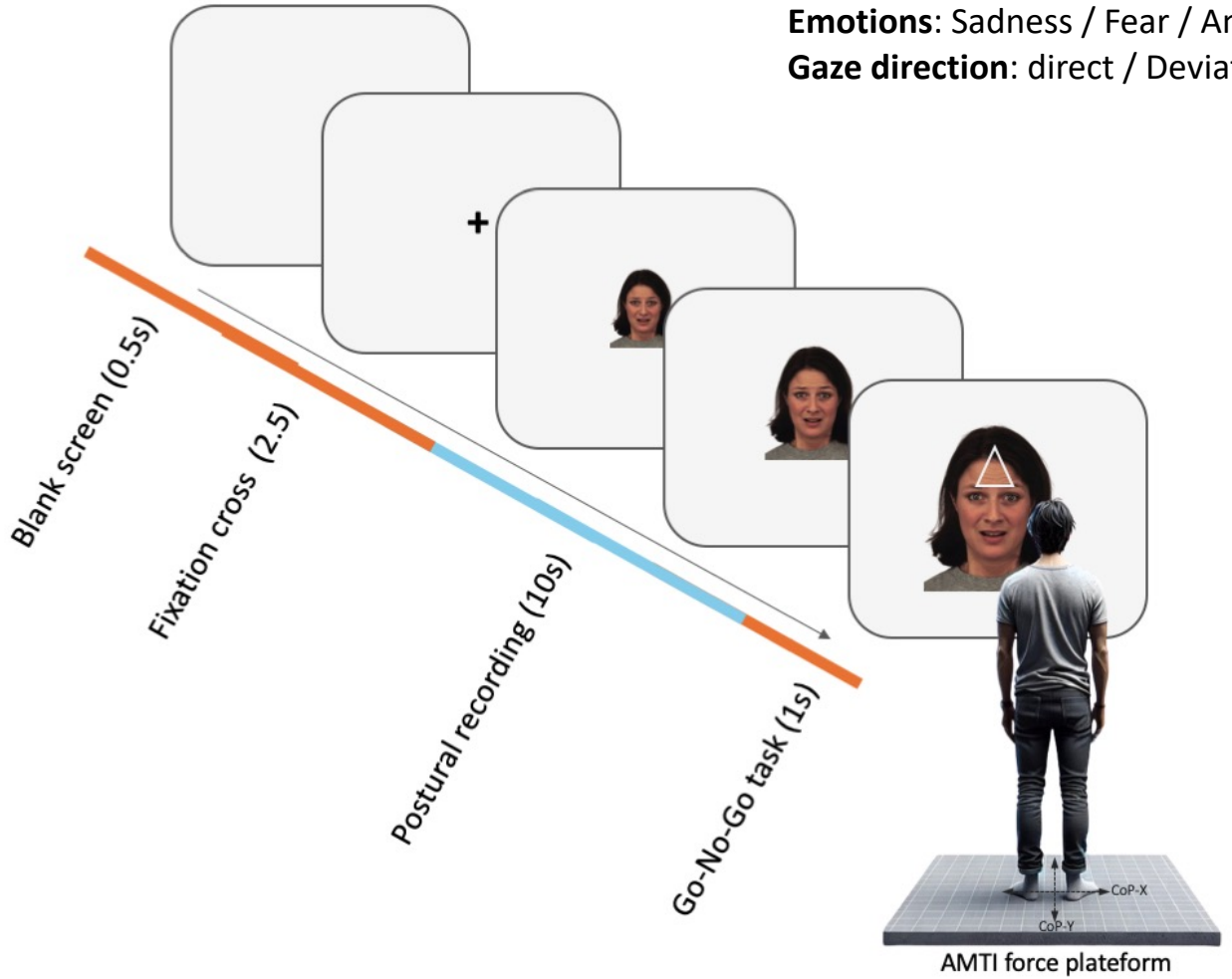
- Not Instruction based
- Natural/ecological behaviors
- Likely automatic (uncontrollable, indirect, unconscious)



Posture

40mn

Emotions: Sadness / Fear / Anger / Neutral
Gaze direction: direct / Deviated / Ambiguous



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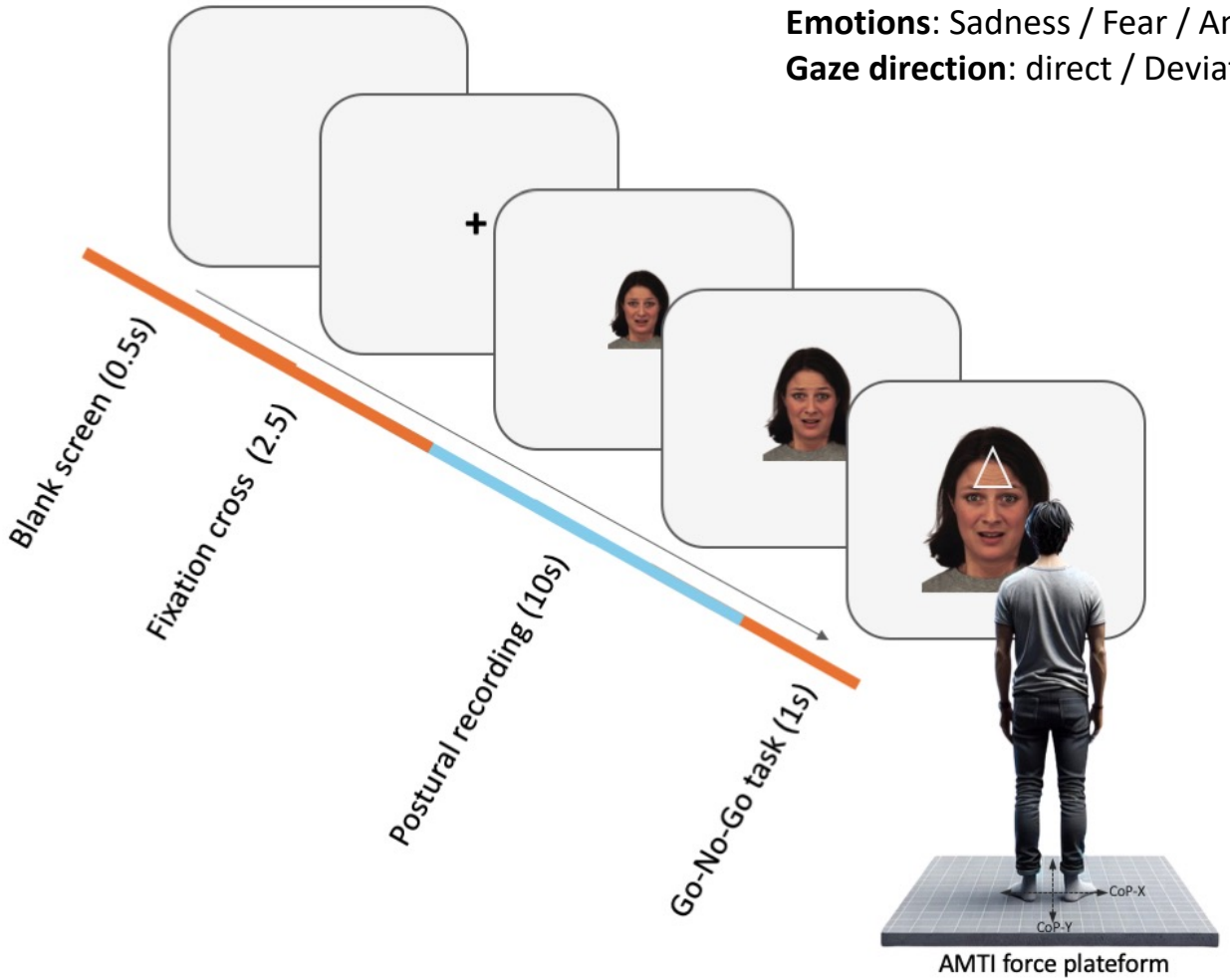

Emotions: Sadness / Fear / Anger / Neutral
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Personnalité

20mn

Questionnaires:

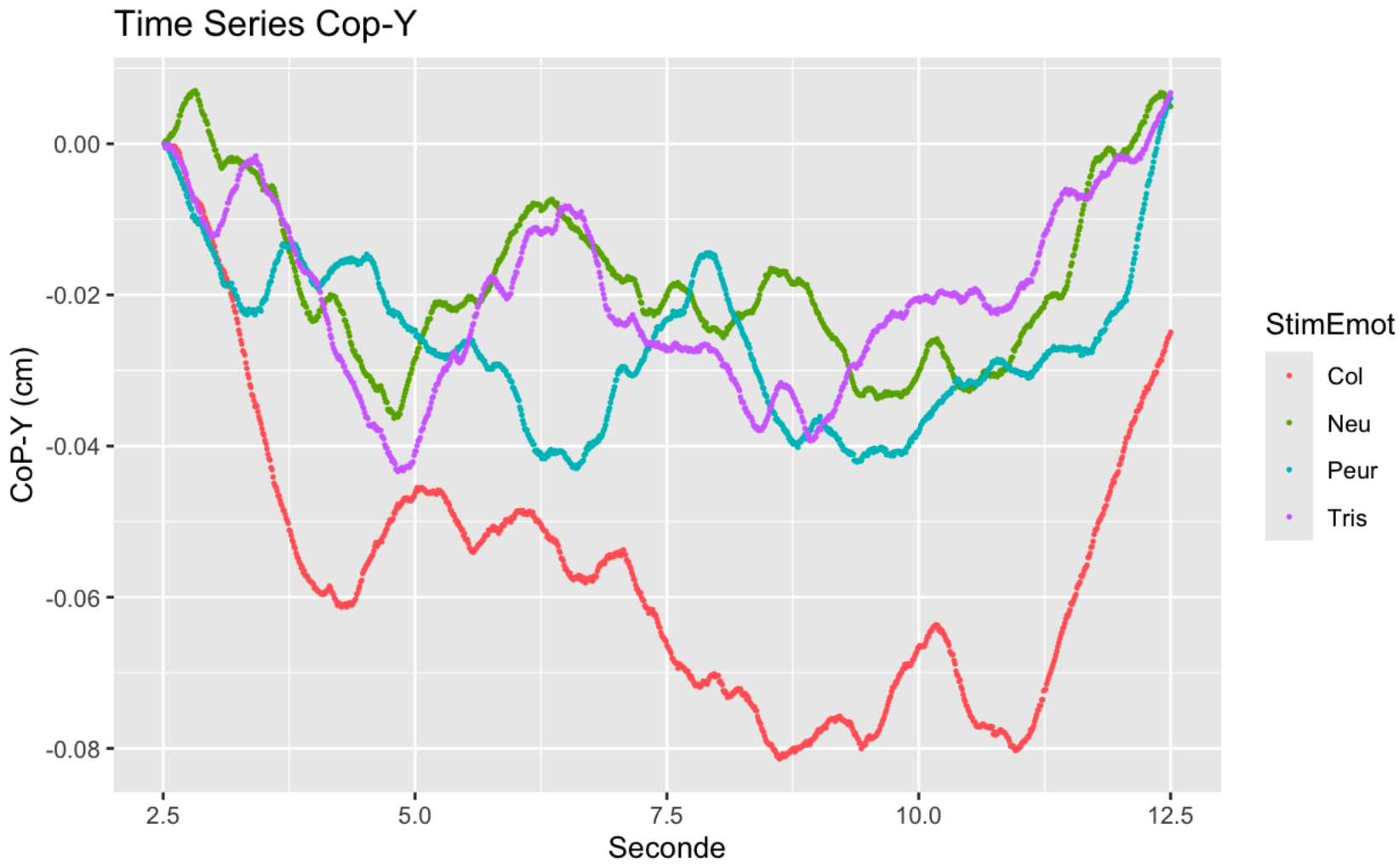
HADS (Anxiety and depression)
SPQ-Br (Schizotypal personality)
BFI-10 (Big 5)

+

Perception stimuli
- Evaluation of emotion
- Evaluation of gaze direction

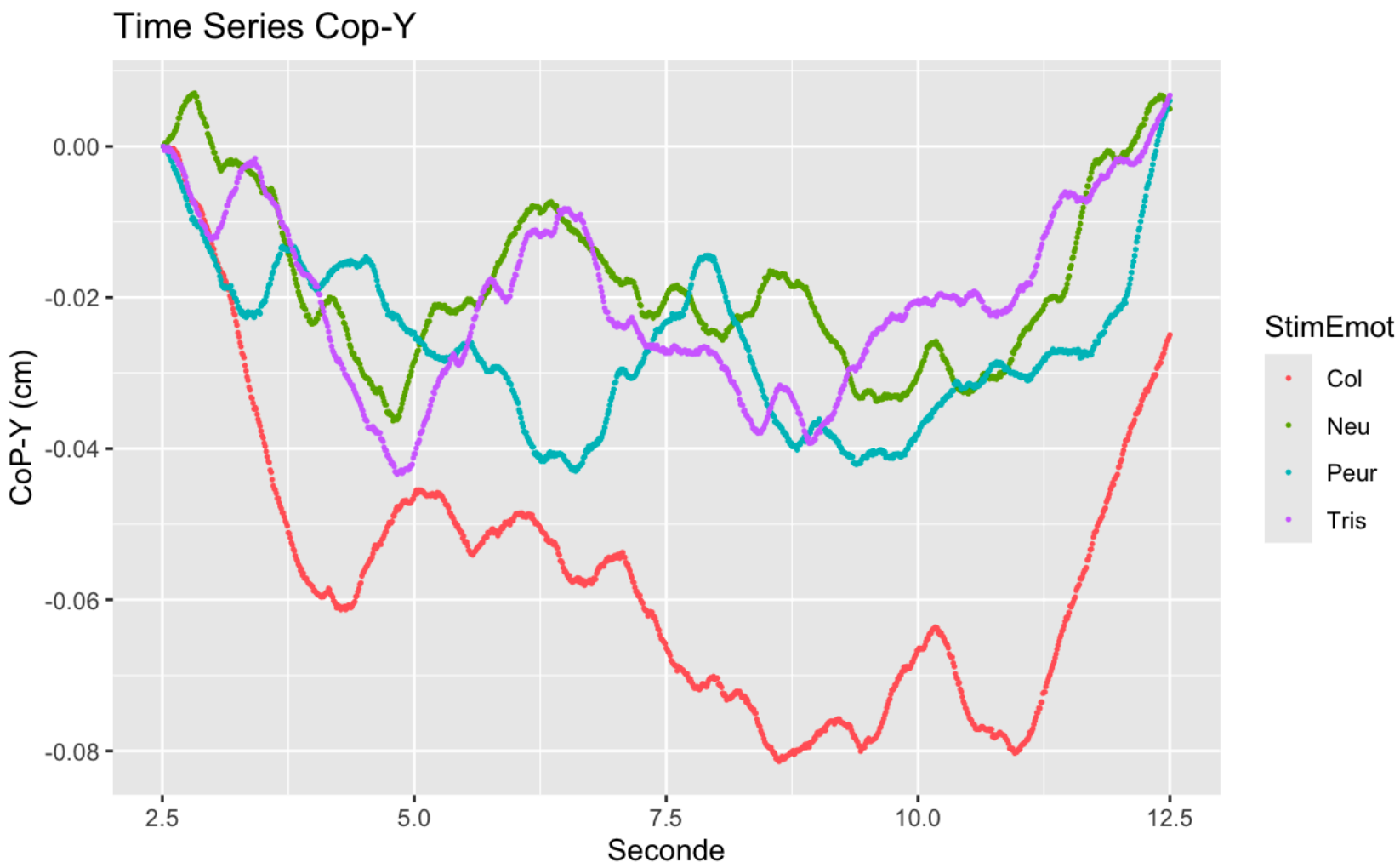
Preprocessing

- **Standardisation**: Centering on t-0
- **Outlier**: Covariance Minimum Distance on ML and AP positions (Leys et al., 2017) ==> 22 participant exclus



Analytical approach

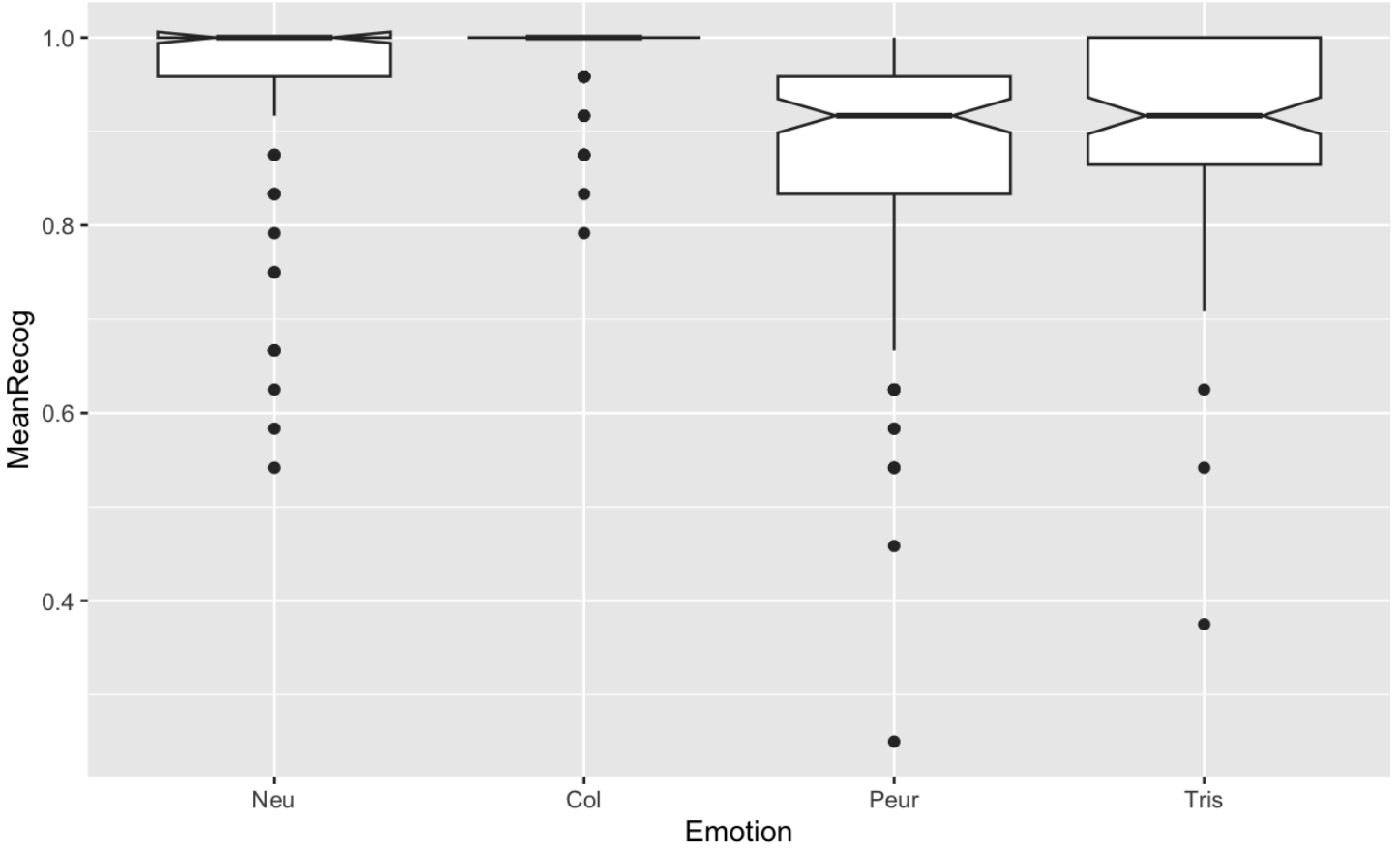
- **Longitudinal Mixed model** (cluster: participant)



Manipulation check

$M_{correct\ identification}$ = 92.6%, *SD* = 10.96%)

- Type of emotion had an effect on recognition score:
  - Fear and Sadness are less identified than neutral
- Only agreeability moderated this effect:
  - Low Agreeability scores = Worse identification of fear vs neutral



Manipulation Check

Pearson Correlations

	Emotion Recognition
Openess	-.037
Conscientiousness	.03
Extraversion	.006
Agreability	.019
Neuroticism	.013
SPQ Cognitive Perception	**-.21**
SPQ Desorganisation	**-.20**
SPQ Interpersonnel	**-.19**
SPQ General	**-.25**
Depression	-.1
Anxieté	-.002

Bold correlations indicates significicance ($p < .05$)

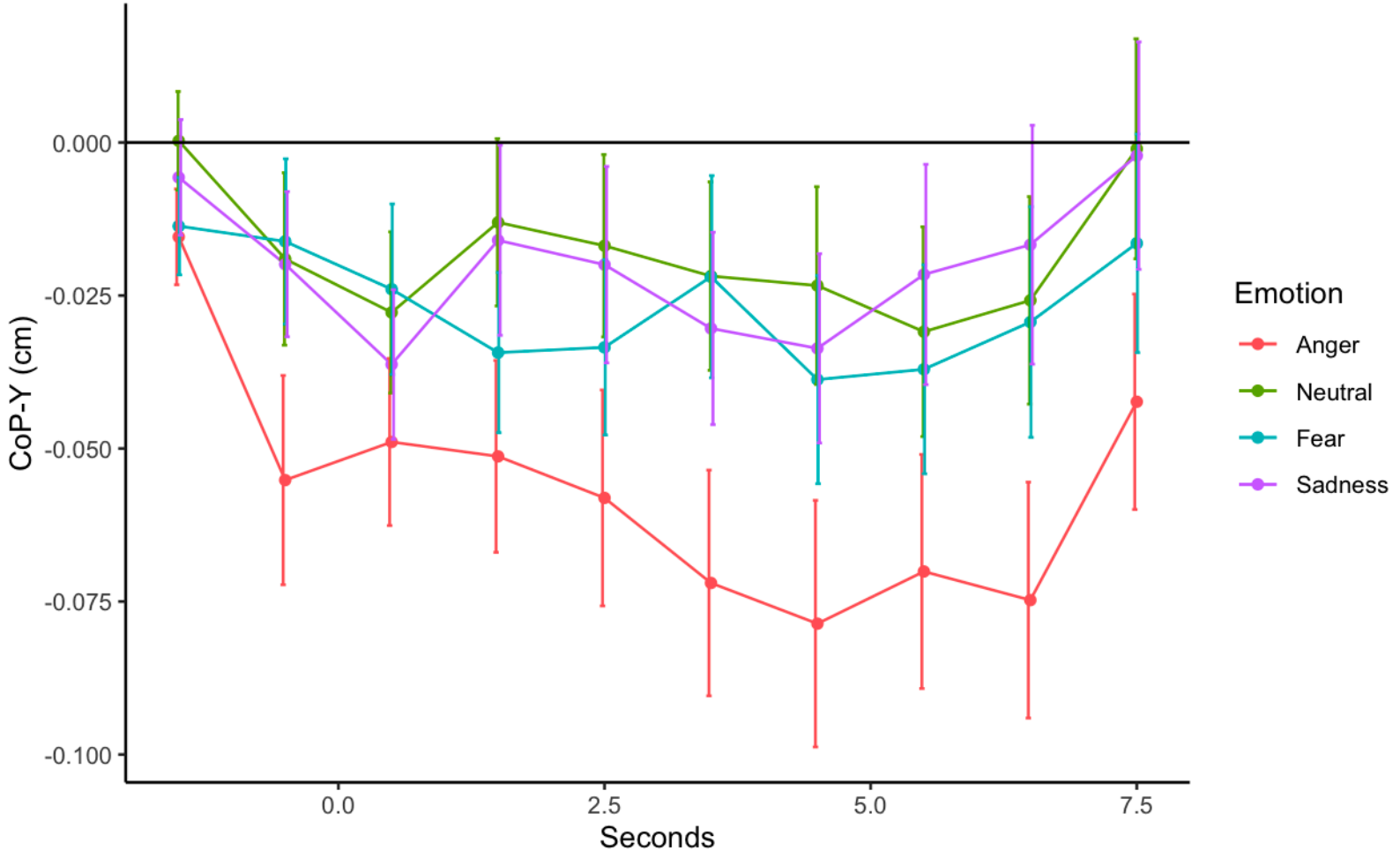
General effects – Emotions

- Main avoidance vs baseline
  - Avoidance of Angry faces

    B = -0.047, $p < .0001$, 95%CI [-0.067, -0.27]

  - Avoidance of Fear faces ($p = .0008$)

    B = -0.034, $p < .0008$, 95%CI [-0.054, -0.014]



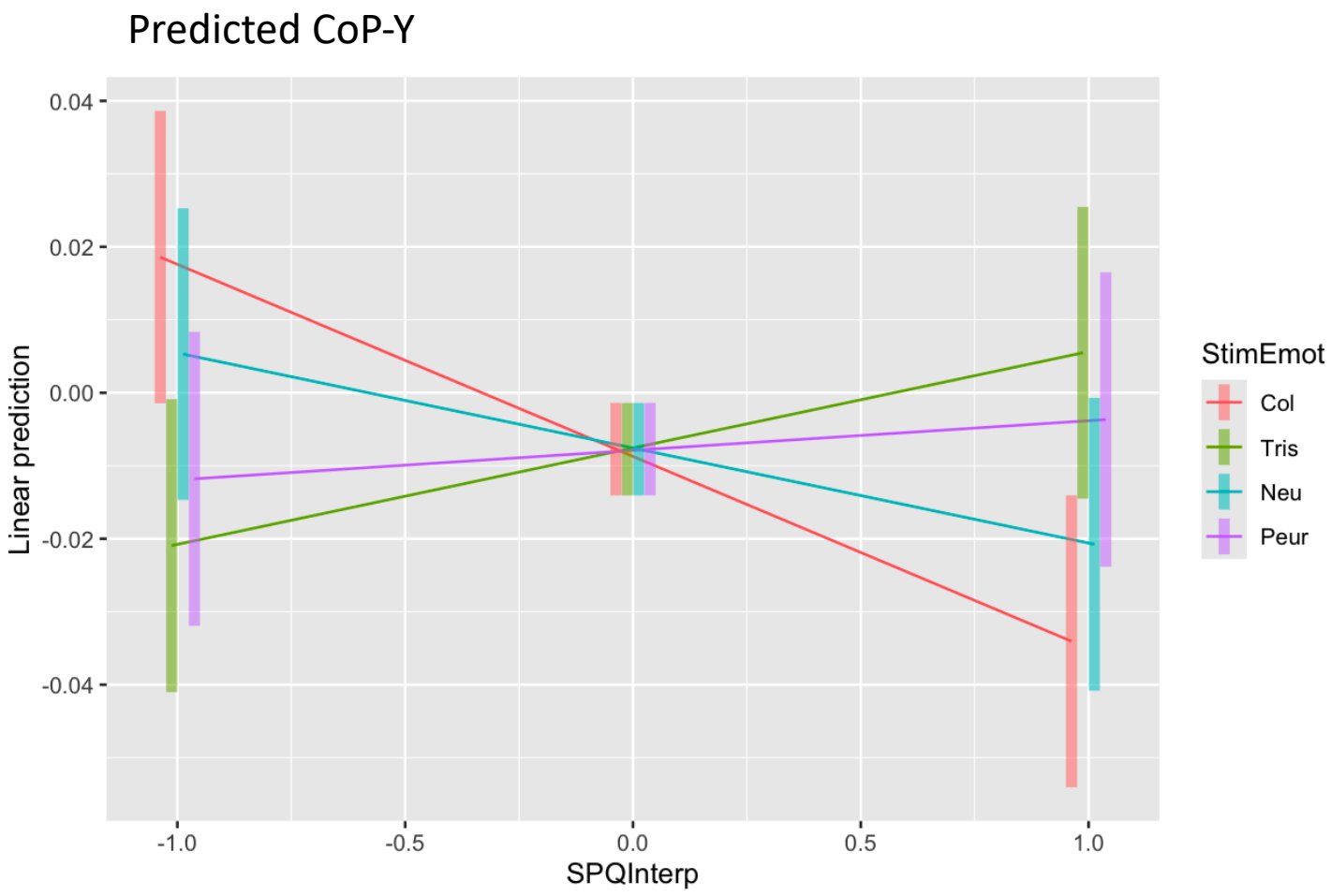
General effects – Personality moderation

- avoidance of anger was moderated by:
  - Openness to experience (reduce avoidance, p = .04)

    B = 0.020, 95%CI[0.0012, 0.039]

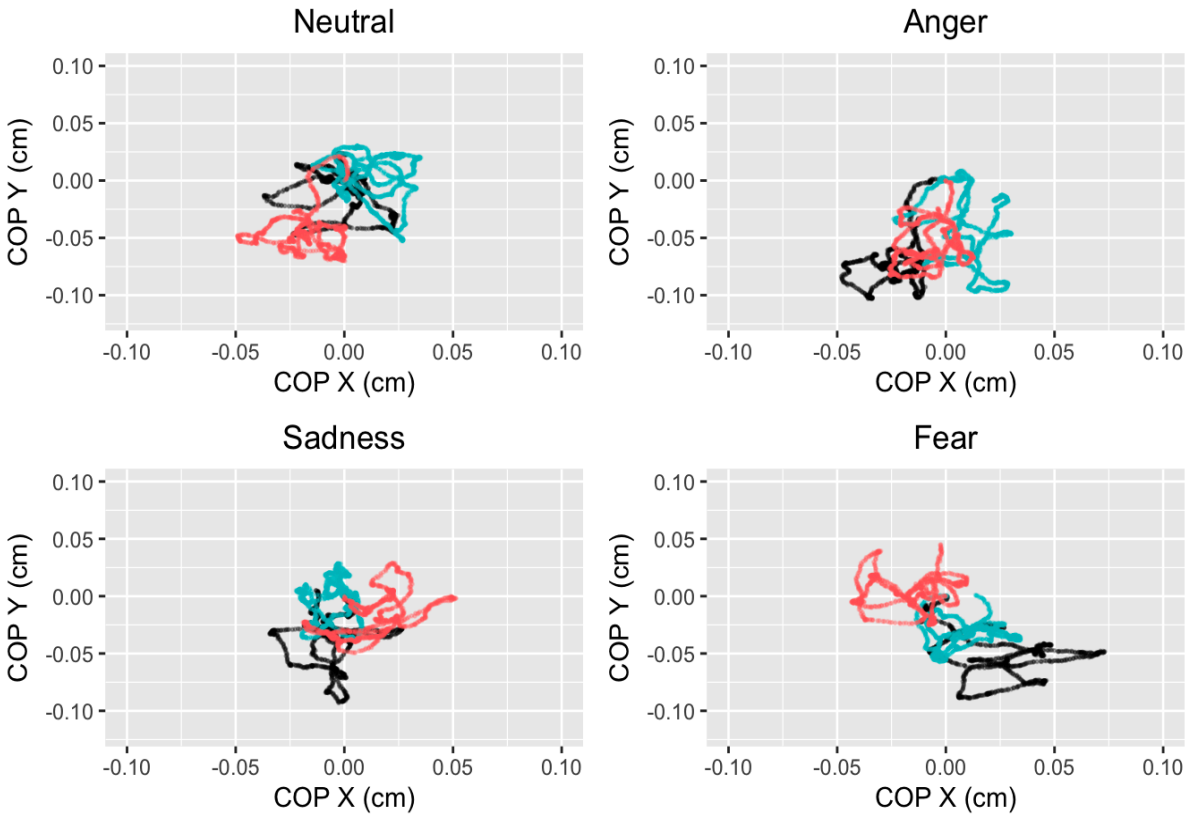
  - Interpersonal dimension of SQP (increases avoidance, p = .007)

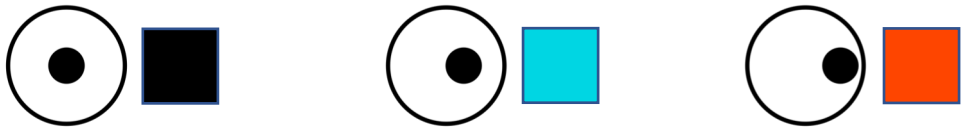
    B = -0.026, 95%CI[-0.045, -0.0073]

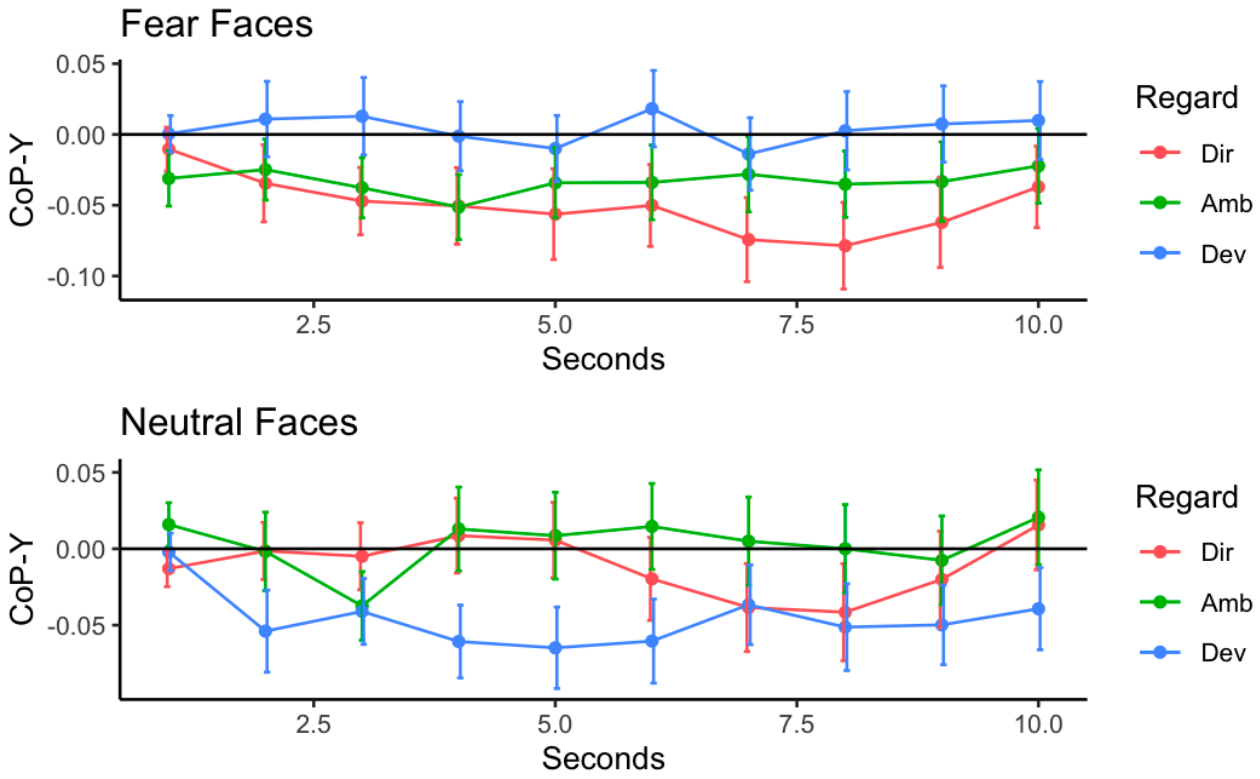


General effects – Gaze moderation

- Facial features:
  - Gazes qualified avoidance of Neutral and Fear faces (but not angry or sad faces)
    - Deviated neutral = Avoidance (p = .032) but not direct neutral (p = .88)
    - Direct Fear = avoidance (p = .0009), but not deviated fear (p = .54)

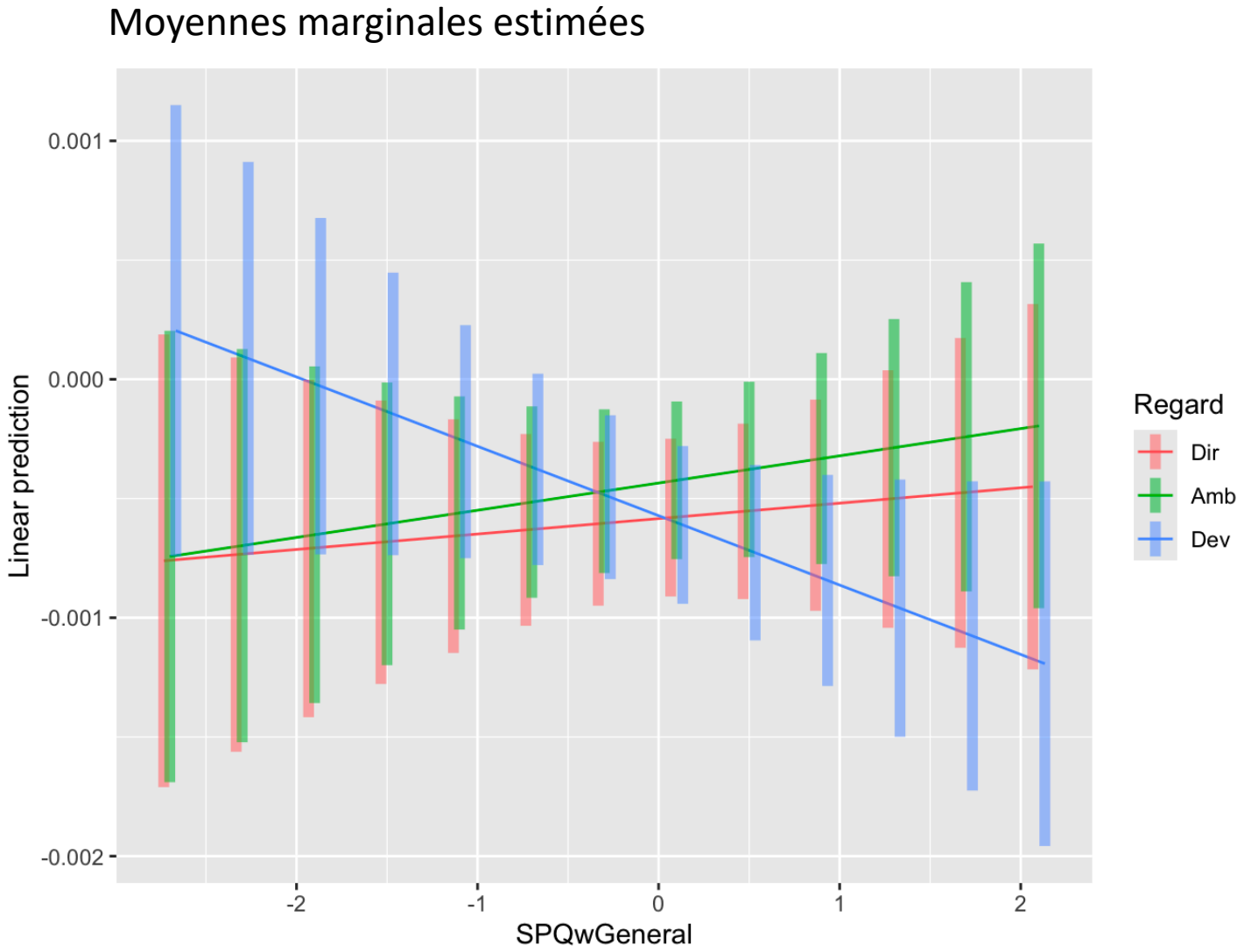






Case of Anger (Interactions)

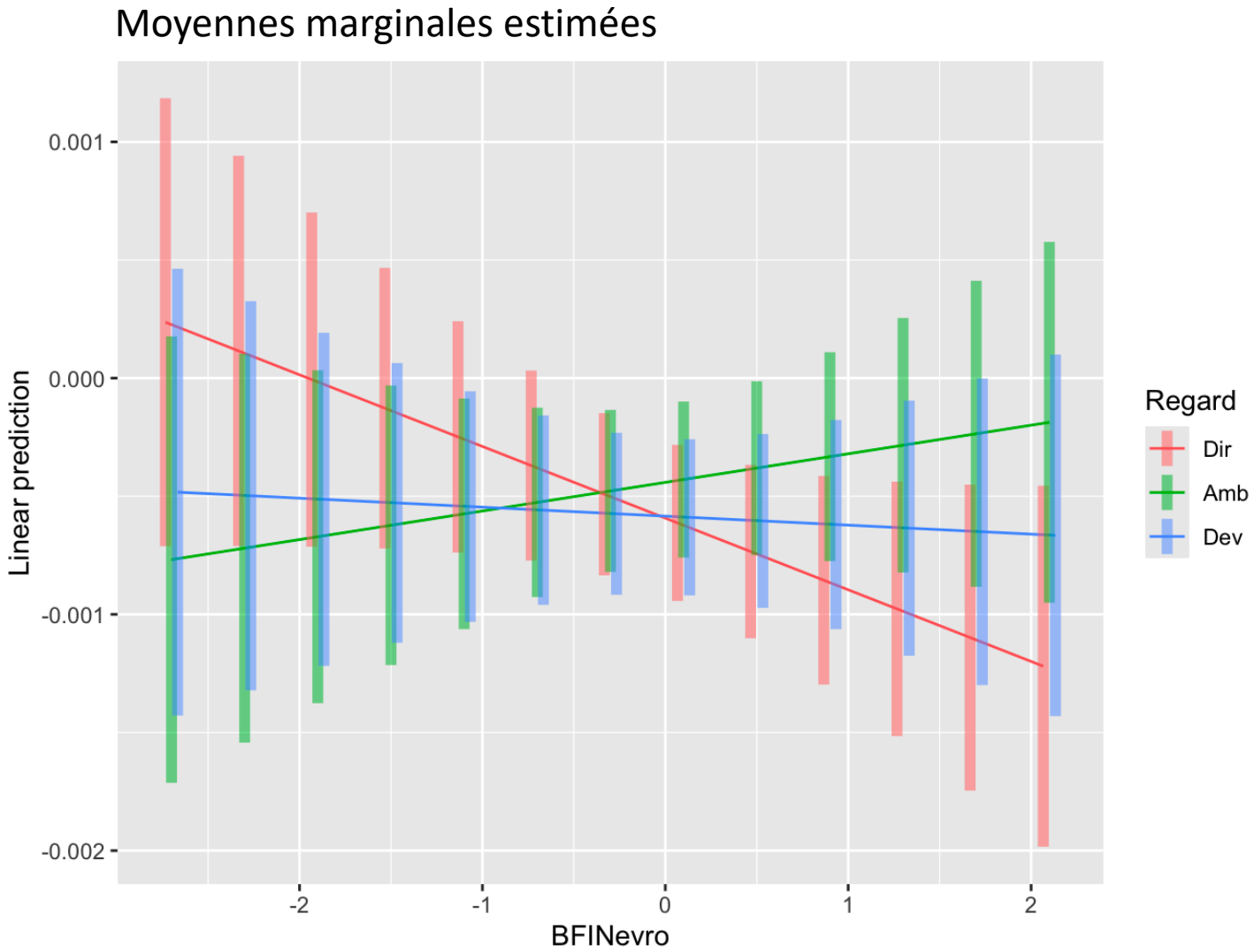
- SCZ interacted with gaze directions to predict reactions to angry faces ($p < .01$)



App pour explorer les données

Case of Anger (Interactions)

- Neuroticism interacted with gaze directions to predict reactions to angry faces (p = .049)



App pour explorer les données

Conclusion

- Emotions influence body sway with anger leading to avoidance

➔ *Postural sway can measure responses to social threats*

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➔ *Postural sway can measure responses to social threats*

- Gaze direction only influenced reaction to neutral (deviated neutral is avoided) and fear (deviated fear is approached)
  - Deviated neutral = Contempt?
  - Deviated fear = « *threat behing you* »?

➔ *Consistent with an appraisal account (vs innate response)*

App pour explorer les données

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➔ *Consistent with an appraisal account (vs innate response)*

- Zooming on angry faces:
  - Neuroticism x gaze:
    - Suggestive evidence for avoidance of direct gazes predicted by neuroticism

➔ *Hypersensitivity to threat (vs pseudo threats) for neurotic participants*

  - SPQ x gaze:
    - Suggestive evidence for avoidance of deviated anger **= why?...**

Références choisies

- Abbott, G., & Byrne, L. K. (2013). Schizotypal traits are associated with poorer identification of emotions from dynamic stimuli. *Psychiatry Research*, *207*(1), 40–44. https://doi.org/10.1016/j.psychres.2013.03.005
- Adams, R. B., & Kleck, R. E. (2005). Effects of direct and averted gaze on the perception of facially communicated emotion. *Emotion (Washington, D.C.)*, *5*(1), 3–11. https://doi.org/10.1037/1528-3542.5.1.3
- Bradley, M. M., Codispoti, M., Cuthbert, B. N., Lang, P., & Peter J. Lang. (2001). Emotion and motivation I: defensive and appetitive reactions in picture processing. *Emotion*, *1*(3), 276–298. https://doi.org/10.1037/1528-3542.1.3.276
- Brehm, J. W., & Self, E. A. (1989). The Intensity of Motivation. *Annual Review of Psychology*, *40*(1), 109–131. https://doi.org/10.1146/annurev.ps.40.020189.000545
- DeYoung, C. G. (2015). Cybernetic Big Five Theory. *Journal of Research in Personality*, *56*, 33–58. https://doi.org/10.1016/j.jrp.2014.07.004
- Eerland, A., Guadalupe, T., Franken, I. H. A., & Zwaan, R. A. (2012). Posture as index for approach-avoidance behavior. *PLOS ONE*, *7*(2). https://doi.org/10.1371/journal.pone.0031291
- Elliot, A. J., & Covington, M. V. (2001). Approach and Avoidance Motivation. *Educational Psychology Review*.
- Lebert, A., Chaby, L., Amandine Guillin, Samuel Chekroun, & Vergilino-Perez, D. (2021). Are You “Gazing” at Me? How Others’ Gaze Direction and Facial Expression Influence Gaze Perception and Postural Control. *Frontiers in Psychology*, *12*. https://doi.org/10.3389/fpsyg.2021.730953
- Ochsner, K. N., & Gross, J. J. (2014). The neural bases of emotion and emotion regulation: A valuation perspective. In *Handbook of emotion regulation, 2nd ed* (pp. 23–42). The Guilford Press.
- Sander, D., Grandjean, D., Kaiser, S., Wehrle, T., & Scherer, K. R. (2007). Interaction effects of perceived gaze direction and dynamic facial expression: Evidence for appraisal theories of emotion. *European Journal of Cognitive Psychology*, *19*(3), 470–480. https://doi.org/10.1080/09541440600757426
- Van Kleef, G. A., Van Doorn, E. A., Heerdink, M. W., & Koning, L. F. (2011). Emotion is for influence. *European Review of Social Psychology*, *22*(1), 114–163. https://doi.org/10.1080/10463283.2011.627192