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How to improve information processing efficiency? Highlighting the competence supporting feedbacks benefits versus competence thwarting feedbacks drawbacks

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INTRODUCTION

Context. Although being attentive has been widely regarded as prerequisite in cognitive performance, literature was sparse concerning supervisor's feedbacks effects on information processing.

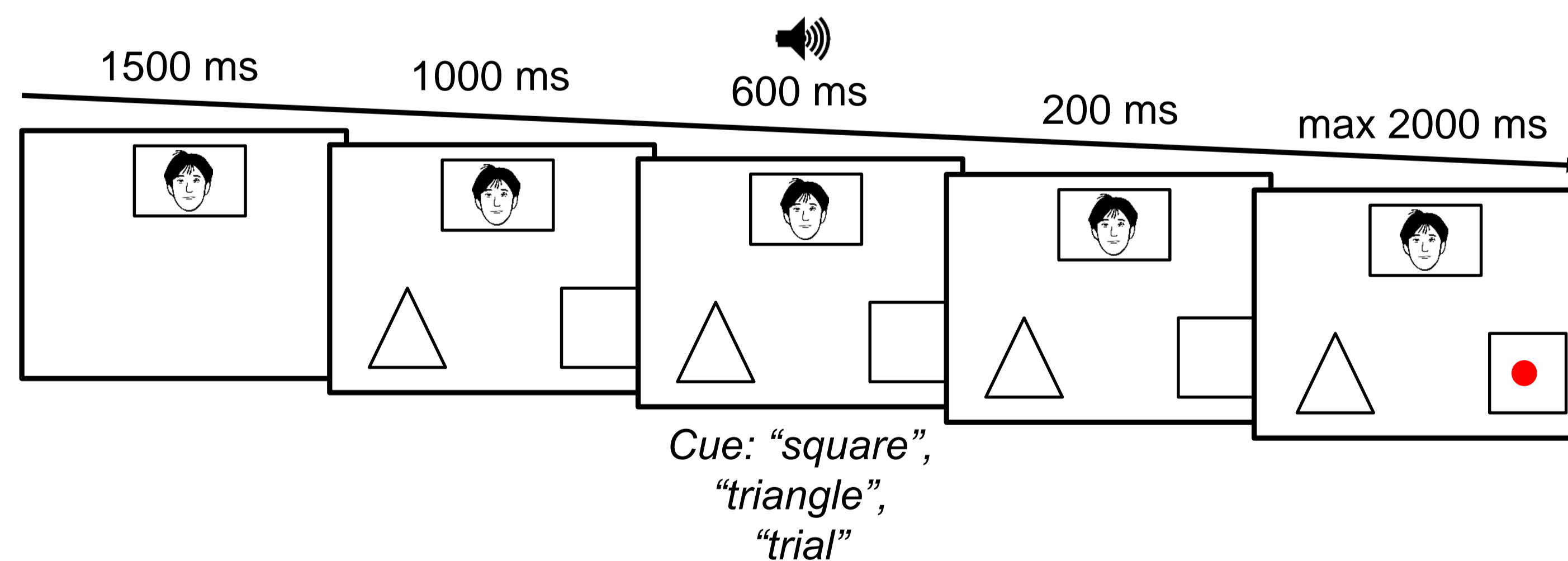
Aim. This research focused on information processing efficiency in reaction to competence-related feedbacks.

Assumptions.

- Supervisors providing competence-supporting feedbacks would foster attentional performances (Mastagli et al., 2021).
- Inversely, competence-thwarting feedbacks may be perceived as threat orienting attention toward the supervisor instead of the task at hand (Eysenck et al., 2007).

METHODS

Subjects participated to a **modified Posner cue-target paradigm (1980)** composed of 200 trials per condition (100 congruent, 50 incongruent, 50 uncued).



Cues were given by a supervisor in **video-capsule**. Each 10 trials, the **same supervisor** in video capsule gave competence-related **feedback**.

<p>Attentional task 1</p> <p>Neutral condition</p> <p>n = 74 men ($M_{age} = 18.68$, $SD_{age} = .76$)</p>	<p>Questionnaires</p> <p>Competence satisfaction (McAuley et al., 1989)</p> <p>Competence frustration (Vanhove-Meriaux et al., 2018)</p>	<p>Attentional task 2</p> <p>Competence-supporting condition</p> <p>n = 37</p> <p>or</p> <p>Attentional task 2</p> <p>Competence-thwarting condition</p> <p>n = 37</p>	<p>Questionnaires</p> <p>Competence satisfaction (McAuley et al., 1989)</p> <p>Competence frustration (Vanhove-Meriaux et al., 2018)</p>
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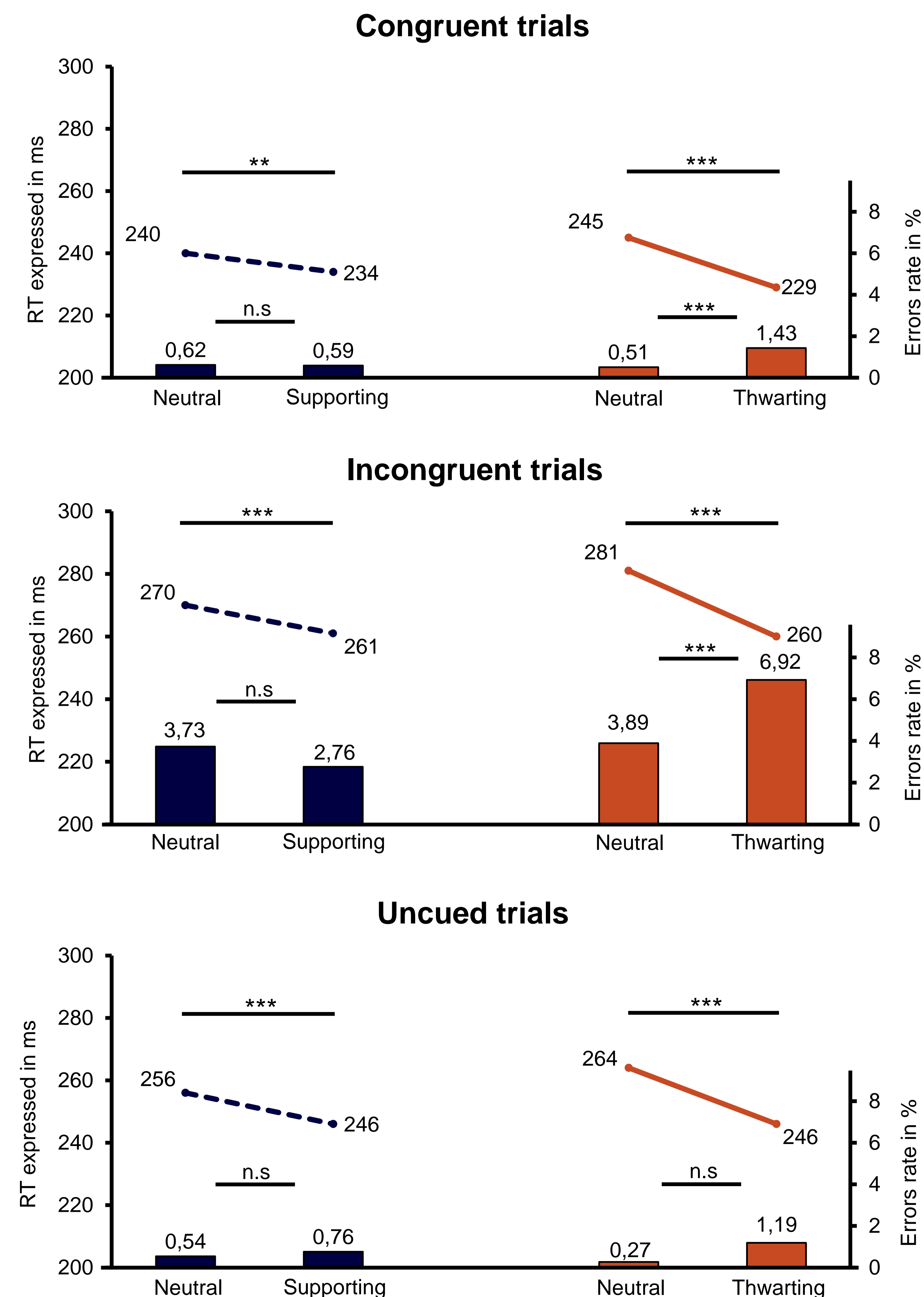
RESULTS

Preliminary analysis

Modified Posner cue-target paradigm was systematically valid (congruent RT < uncued RT < incongruent RT).

In comparison to neutral condition, supporting and thwarting video-feedback had expected effects on the competence need.

Main results



CONCLUSIONS

The supporting feedback group showed a general decrease in RT and a constant errors rate.

In contrast, the **thwarting feedback** group indicated a **strongest decrease** in RT but an **increase** in the errors rate to congruent and incongruent trials.



- In line with the Attentional Control Theory (Eysenck et al., 2007):
- **Competence-supporting** feedbacks would foster **efficiency**.
 - **Competence-thwarting** feedbacks would improve **effectiveness**.

Participants experiencing competence-thwarting feedbacks would have **abandoned a balanced strategy** to the benefit of an unbalanced strategy favoring speed over accuracy (Simen et al., 2009).

Ruminating about social comparison would have **consumed attentional resources** usually allocated to the task, favoring to neglect peripheral elements (Butera et al., 2006).

These results support the SDT **"bright"** and **"dark"** pathway activated by competence-supporting and competence-thwarting feedbacks (Ryan & Deci, 2017).

REFERENCES

Butera et al. (2006). Les méfaits de la compétition: comparaison sociale et focalisation dans l'apprentissage. *Bilans et perspectives en psychologie sociale*.

Eysenck et al. (2007). Anxiety and cognitive performance: attentional control theory. *Emotion*.

Mastagli et al. (2021). The role of an empowering motivational climate on pupils' concentration and distraction in physical education. *Journal of Teaching in Physical Education*.

McAuley et al. (1989). Psychometric properties of the Intrinsic Motivation Inventory in a competitive sport setting: a confirmatory factor analysis. *Research Quarterly for Exercise & Sport*.

Posner (1980). Orienting of attention. *Quarterly Journal of Experimental Psychology*

Ryan & Deci (2017). *Self-determination theory: basic psychological needs in motivation, development, and wellness*.

Simen et al. (2009). Reward rate optimization in two-alternative decision making: empirical tests of theoretical predictions. *Journal of Experimental Psychology. Human Perception and Performance*.

CONTACT

