

## **Physical aggression is associated with more effective postdecisional processing of social threat**

### **Supplemental Material**

#### **Supplemental Results**

##### **Covariate Analyses**

To test whether Conduct Disorder (CD) symptoms contributed to physically aggressive individuals' task performance, analyses were re-run with the addition of CD symptoms (assessed via interview using DSM-5 criteria for CD) as a covariate. When controlling for CD symptoms, all physical aggression-related effects remained significant.

To test whether symptoms of Antisocial Personality Disorder (APD) contributed to physically aggressive individuals' task performance, analyses were re-run with the addition of APD symptoms (assessed via interview using DSM-5 criteria for APD) as a covariate. When controlling for APD symptoms, all physical aggression-related effects remained significant.

To test whether psychopathic traits contributed to physically aggressive individuals' task performance, analyses were re-run with the addition of Psychopathy Checklist-Revised (Hare, 2003) total score as a covariate. When controlling for psychopathic traits, all physical aggression-related effects remained significant.

To test whether substance use disorders (SUDs) contributed to physically aggressive individuals' task performance, analyses were re-run with the addition of the total number of lifetime SUD diagnoses (assessed using the Structured Clinical Interview for DSM-5; First, Williams, Karg, & Spitzer, 2015) as a covariate. When controlling for SUD diagnoses, all physical aggression-related effects remained significant.

To test whether anxiety contributed to physically aggressive individuals' task performance, analyses were re-run with the addition of Welsh Anxiety Inventory (WAI; Welsh, 1956) total score

as a covariate. When controlling for anxiety, all physical aggression-related effects remained significant.

To test whether negative emotionality contributed to physically aggressive individuals' task performance, analyses were re-run with the addition of the Negative Emotional Temperament score from the Multidimensional Personality Questionnaire-Brief (MPQ-BF; Patrick, Curtin, & Tellegen, 2002) as a covariate. When controlling for negative emotionality, one physical aggression-related effect was reduced to non-significance. Specifically, the dominant emotion  $\times$  IJT  $\times$  emotion decision  $\times$  physical aggression interaction in the analysis of confidence was no longer significant,  $F(1,71)=1.81, p=.183, \eta_p^2=0.03, 90\% \text{ CI } [0.00, 0.11]$ .

To test whether exposure to violence contributed to physically aggressive individuals' task performance, analyses were re-run with the addition of the Exposure to Violence Scale (ETV; Selner-O'Hagan, Kindlon, Buka, Raudenbush, & Earls, 1998) total score as a covariate. When controlling for exposure to violence, all physical aggression-related effects remained significant.

To test whether childhood trauma contributed to physically aggressive individuals' task performance, analyses were re-run with the addition of the Childhood Trauma Questionnaire-Short Form (CTQ-SF; Bernstein et al., 2003) total score as a covariate. When controlling for childhood trauma, all physical aggression-related effects remained significant.

### **Associations between violent institutional infractions and task performance**

It can be useful to examine whether the effects of self-reported physical aggression extend to non-self-reported indicators of physical aggression. The number of violent institutional infractions an individual has been cited for while incarcerated represents an alternative way of measuring physical aggression. We re-ran analyses, replacing AQ Physical Aggression as the independent variable with violent institutional infractions (recorded directly from institutional documents). We

log-transformed the violent institutional infraction variable due to its right skewness and added the number of years the individual had been incarcerated as a covariate to each model, to control for the amount of time the individual had spent in the institution. Analyses revealed no significant associations between violent institutional infractions and task performance.

### **Supplemental Discussion**

Based on the supplemental results, the physical aggression-related effects reported in the main results appear to be quite robust, with no discernable impact of CD symptoms, APD symptoms, psychopathic traits, SUDs, anxiety, exposure to violence, or childhood trauma. Negative emotionality was the only variable that impacted an association between physical aggression and task performance. Negative emotionality may, in part, account for physically aggressive individuals' tendency to lose confidence over time after they misidentify mostly angry faces as happy. This finding is consistent with research indicating that individuals who are prone to experiencing various negative emotions show enhanced processing of anger- and threat-related information (Parrott, Zeichner, & Evces, 2005; Reed & Derryberry, 1995). It is possible that negative emotionality represents an underlying predisposition toward more effective postdecisional processing of social threat. These findings highlight the importance of further research into the role of negative emotionality in postdecisional processing of emotional information.

We did not detect any associations between violent institutional infractions and task performance, representing a divergence from the significant effects observed for self-reported physical aggression. Several factors may account for the measurement-based divergence. First, whereas the self-report measure of physical aggression indexes individuals' endorsement of how characteristic certain physically aggressive behaviors are of them, violent institutional infractions represent the total number of violent acts individuals committed (and were charged with) over the

course of their incarceration. There are several ways in which self-reported physical aggression may not align with violent institutional infractions. As one example, individuals who were highly aggressive when younger, were incarcerated for a long period, and then experienced a marked decline in physical aggression may have accumulated many institutional infractions throughout their sentence but self-report lower physical aggression because these behaviors are no longer seen as “characteristic” of them. Second, the self-report measure captures individuals’ perceptions of themselves, while violent institutional infractions capture an observer’s report and are influenced by a distinct set of environmental factors such as the level of monitoring on a particular unit (Steiner & Wooldredge, 2008). Finally, the self-report measure is not a count of aggressive behaviors, but rather reflects the characteristicness of certain physically aggressive behaviors in particular contexts (e.g., following provocation); however, violent institutional infractions do not account for such contextual considerations. Taken together, self-reported physical aggression and violent institutional infractions represent two different perspectives on an individual’s level of physical aggression. Thus, it is not particularly surprising that we did not detect associations between violent institutional infractions and task performance. However, future research should aim to distill valuable information from both types of measures (e.g., using latent variable approaches).

## References

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Table S1

*Information on Relevant Variables in Final Sample*

Variable	<i>M</i>	<i>SD</i>	Range	% of Sample Meeting Criteria for Disorder	Correlation with AQ Physical Aggression	Physical Aggression Effects Reduced to Non-significance after Controlling for the Variable
Conduct Disorder symptoms	4.60	3.50	0-13	64.00%	.301*	None
Antisocial Personality Disorder symptoms	3.75	1.63	0-7	53.30%	.387*	None
PCL-R total	24.76	6.09	8-36	20.00%	.313*	None
Substance use disorder diagnoses	1.95	1.33	0-5	90.41%	.316*	None
WAI total	12.38	8.50	1-38	N/A	.146	None
MPQ-BF NEM	47.55	16.91	17-90	N/A	.498*	Dominant emotion × IJT × emotion decision × physical aggression interaction in analysis of confidence
ETV total	8.92	3.04	1-13	N/A	.413*	None
CTQ-SF total	48.14	17.89	25-103	N/A	-.039	None

*Note.* AQ=Buss Perry Aggression Questionnaire, PCL-R=Psychopathy Checklist-Revised, WAI=Welsh Anxiety Inventory, MPQ-BF NEM=Negative Emotional Temperament score on the Multidimensional Personality Questionnaire-Brief, ETV=Exposure to Violence scale, CTQ=Childhood Trauma Questionnaire-Short Form. \* $p < .05$