Explaining Individual Differences in Advantageous Inequity Aversion by Social-Affective Trait Dimensions and Family Environment

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Abstract

[illegible] $(N = 67)$ [illegible] $(N = 2,250)$ [illegible]

Keywords

[illegible]

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$Ms = Mo = \vert$, $Ms = Mo = \mathbf{l}$.

C   *a*   *a*   *de*   *c*   *ce*   *e*   *d*   *ed DG.*

(&   , $\mathbf{l}$ &   ,
$\vert$ 00)
(., $\vert$ 0$\mathbf{l}$., $\vert$ 0$\mathbf{l}$).

$$U = Ms - q \cdot \mathbf{a} \cdot (Mo - Ms) - p \cdot \mathbf{b} \cdot (Ms - Mo),$$

Ms Mo ,   ,
         , $\cdot p$ q

($p = \mathbf{l}$ Ms $Mo, p = 0$)
               ($q = \mathbf{l}$ Mo $Ms, q = 0$
).   , p q
    (., $\vert$ 0$\mathbf{l}$). $\mathbf{a}$ $\mathbf{b}$
                    ,
     .
             ($\mathbf{D}U = U$ $- U$)

$$P(\quad) =$$

Table 2. Associations Between Social-Affective Trait Dimensions and Inequity Aversion Parameters.

Variables	B (SE) and CI for Advantageous IA	B (SE) and CI for Disadvantageous IA	B (SE) and CI for Inverse Temperature
Factor 1: Emotion perception and regulation	−.28 (.07)*** [−0.42, −0.13]	−0.23 (.10)* [−0.42, −0.04]	.03 (.01)* [0.01, 0.05]
Factor 2: Compassionate social emotions	−.52 (.07)*** [−0.66, −0.38]	−0.16 (.10) [−0.35, 0.30]	.06 (.01)*** [0.03, 0.08]
Factor 3: Expanded self and belief in justice	−.02 (.07) [−0.17, 0.12]	−0.12 (.10) [−0.32, 0.07]	.01 (.01) [−0.01, 0.04]
Sex (male > female)			

Results

motivation is more to terminate one's own distress than to benefit the recipient (Batson, 2011; Batson et al., 1981). In contrast, empathic concern loaded negatively on Factor 2, which is associated with advantageous IA. Previous research has demonstrated that empathic concern, unlike personal distress, is other-regarding and has an approach tendency (Davis et al., 1999; FeldmanHall et al., 2015; Zaki, 2014).

It is interesting to compare the effect of the trait dimension represented by Factor 2 and episodic social emotions (e.g., guilt) on IA. For example, Gao et al. (2018) has demonstrated that when episodic guilt state was induced experimentally, individuals exhibited higher advantageous IA *and* lower disadvantageous IA. This is conceivable because retrospective guilt should not only discourage individuals from engaging in future transgression but also motivate individuals to make amend for existing transgression and damage (De Hooge, 2019; Kamau et al., 2013; H. Yu et al., 2014). In contrast, many of our social-affective trait measures are anticipatory in nature (Cohen et al., 2012). Our result lends support to a cognitive account of the prosocial function of social affective traits (i.e., compassionate social emotions), namely, individuals who anticipate more future social emotions (e.g., guilt, shame) find

the prospect of unjustly getting better off than others more aversive (see also Gong et al., 2019). Future studies are necessary to ascertain the neurobiological links between behavioral tendency (e.g., advantageous IA), episodic social emotions (e.g., guilt), and social-affective traits (e.g., guilt proneness).

Our finding that a positive family environment is associated with social affective traits pertaining to compassionate social emotions provides evidence for the developmental observations that family environment and parental warmth play a key role in the proper development of prosocial emotions such as empathy and guilt (Ferguson & Stegge, 1995; Hinde, 2002; Tangney & Dearing, 2003; Zahn-Waxler & Kochanska, 1990). The novel contribution of our findings is that we revealed possible routes from family environment to prosocial behavioral preference via social-affective traits. However, it should be noted that these results are correlational and should

between positive family environment and compassionate social emotions.

To conclude, by combining computational modeling and a dimensional approach to personality measures, this well-powered study offers a cognitive account of how compassionate social emotions as a social-affective trait promotes prosocial behaviors—individuals high on this dimension are more careful not to be unfairly better off than others (i.e., advantageous IA). Moreover, we highlight the association between a positive family environment and the development of the trait of compassionate social emotions and provide evidence for an intermediate role of affective trait in the relationship between family environment and advantageous IA. Together, the results of this study suggest that the trans-diagnostic approach is not only useful in discovering dimensional markers of behavioral anomaly in psychiatry but is also applicable to ascertaining the specificity of social-affective trait dimension in predicting prosociality.

Decla a ion of Conflic ing In e es s

The author(s) declared no potential conflicts of interest with respect to

, . (2016) . : . . . .
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, . ., & , . (2012). *H t , t, t : A t 850 t t* . . . . . .

, . ., , S . ., , . ., & , . (2008). / . . . . . : . . . . *J A D D* , *31*(4), 433 450.

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