B a Ac Fa e C de a A e D : D e e l a O e P a a R e?

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Abstract

Previous behavioral studies have shown that initial ownership influences individuals' fairness consideration and other-regarding behavior. However, it is not entirely clear whether initial ownership influences the brain activity when a recipient evaluates the fairness of asset distribution. In this study, we randomly assigned the bargaining property (monetary reward) to either the allocator or the recipient in the ultimatum game and let participants of the study, acting as recipients, receive either disadvantageous unequal, equal, or advantageous unequal offers from allocators while the event-related potentials (ERPs) were recorded. Behavioral results showed that participants were more likely to reject disadvantageous unequal and equal offers when they initially owned the property as compared to when they did not. The two types of unequal offers evoked more negative going ERPs (the MFN) than the equal offers in an early time window and the differences were not modulated by the initial ownership. In a late time window, however, the P300 responses to division schemes were affected not only by the type of unequal offers but also by whom the property was initially assigned to. These findings suggest that while the MFN may function as a general mechanism that evaluates whether the offer is consistent or inconsistent with the equity rule, the P300 is sensitive to top-down controlled processes, into which factors related to the allocation of attentional resources, including initial ownership and personal interests, come to play.

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Introduction

I a a a ab a , a b a a a b a *mere ownership effect* [1,2]. T c cc ac a a a , ca [3]. T c a b - a c a c a a a b c b a c a - a [1].

R c a c a - a b a c c c - a [4,5,6]. O b a S a [6] a a c a a a c a a (DG; [7]) c a ca c b a a c a b acc a ca . T a (a c a a a a) a a a b a ca b c a a a . R a c "a ca - a " c a " c - a " c , a c a ' - a b a - [8]. U a a a , L a . [4] a *perception* a c a ca ' - a b a a a a (UG). T a , a b G a . [9], a DG b a a c : c ca acc c a ca ' . I acc , a ; c , b a ca a c a . L a . [4] c (a a a a) a a ca ' ab a c ' ab . R a a ca c a ca a ca ; , a - a b a b c c a c c ' a a a a c .

T c c a c c *entitlement.* E a a a : b ca I I , I a a . I ab , a ca b a a a a a a . I b , , a b a a c a c c a ca ' c - a b a . I c a c ' a c a c c ba a b a c b a , a c , a b a a a a ca a a b a .

T a c c a a
a ba a a c ' a
c a ; a a b a a ac
(. ., acc . c) a c ca
c . W a a (a c a a
a a) a ca c b
a c a a
c ' - a a (ERP) b
c . W a a a a a ca b
c c a a a a (1, 2,
3 10 C a), a (5 10 a)
a a a a (7 8 10 a). B a a ,
acc a c a . T
a c a a a c
c a . I a , a c b a
a b c a b a ca ,
c a a a a a . T
a c a a a
.

E c ca , c MFN a P300, ERP
c a a a a a a
b . T a a a (MFN) bac -
a a (FRN) a a b
a c a a a c c
[10,11,12,13]. T FRN a a c a b
200 a 350 a c a c , a
c a bac a c a a ab
c , c a c c a , a
bac . La a a
c c ca b a b c a ac ,
c a a a b a a a
c a [14,15,16,17,18,19,20] a a
b c [21,22]. T
FRN a c c a a a /
a c ac c (. ., c c F7TD418.12 8( )-393.b .8(ac]TJ2(71.1)-288-1.1 c)5(acc a.9(365.9(

a acc c a , a a
a c a a 20 a a ba c
a . F a a (2 a), a
EEG a c a , c a c a . T
c a a c a
b a - a a a a a
a c c EEG a c a a a a
a ca a .
A a c a - a a a a

ba -c c b b ac ac a a a ac a c a ba . A a c EEG a c a ±80 μV c c a a . T EEG a a a ba - a 0.016 30 H .

W c 10 c a c , FC3, FC1, FC , FC2, FC4, C3, C1, C , C2 a C4 MFN a 10 c - c , CP3, CP1, CP , CP2, CP4, P3, P1, P , P2 a P4, P300 c MFN a P300 c b c . Ba a c ERP a , a a 280 380 MFN a a a a 400 600 P300 a (a [28] a a). A a a c a a c - c a a . A a a a c (ANOVA) c c - a c - a ac : a (.) a (a a a a . a . a a a a). T G -G c c a a c a a a a . T B c c a c a .

Results

A EEG a c a , a c a a a c b a EEG , a c a a c a ac EEG c , a c a a , a a c a acc a . T a c a c a a a a , a - a c a (8 a) a a .

Manipulation Checks of Initial Ownership

T - a ca a c a a 10 a b , a c a ’ a a , a c a c a ’ c a . A 2 (ca 10 a b : c ’ a a . ,) ×

(a ± SE, 5.24±0.28) a a ca ’ (2.90±0.25), $p<0.001$. O a , a c a c b a ca ’ (5.14±0.29) a (3.14±0.32), $p<0.01$, 10 a b a ca ’ .

T a a a a c a c a ’ - a acc a c a 10 a . T a acc a c a a ca a a a c a (4.86±0.33) a b a a a ca (2.86±0.33), $p<0.001$. M , a c a - ca a a a 6.48±0.25 a (10 a) a a a c a , c a ca a a b a a a ca (4.67±0.26), $p<0.001$. T ca a c a a a ca c a acc a .

Behavioral Results

T acc a c a c a F . 2. A 2 (a : .) × 3 (: a a a a . a . a a a a) a a ANOVA a a ca a c , $F(2, 40) = 108.31$, $p<0.001$, ca a acc a c a a a a a (0.24±0.05) a a a (0.91±0.03)

ac (c a) a a -
a .
T a MFN c , a
a a a a a a ,

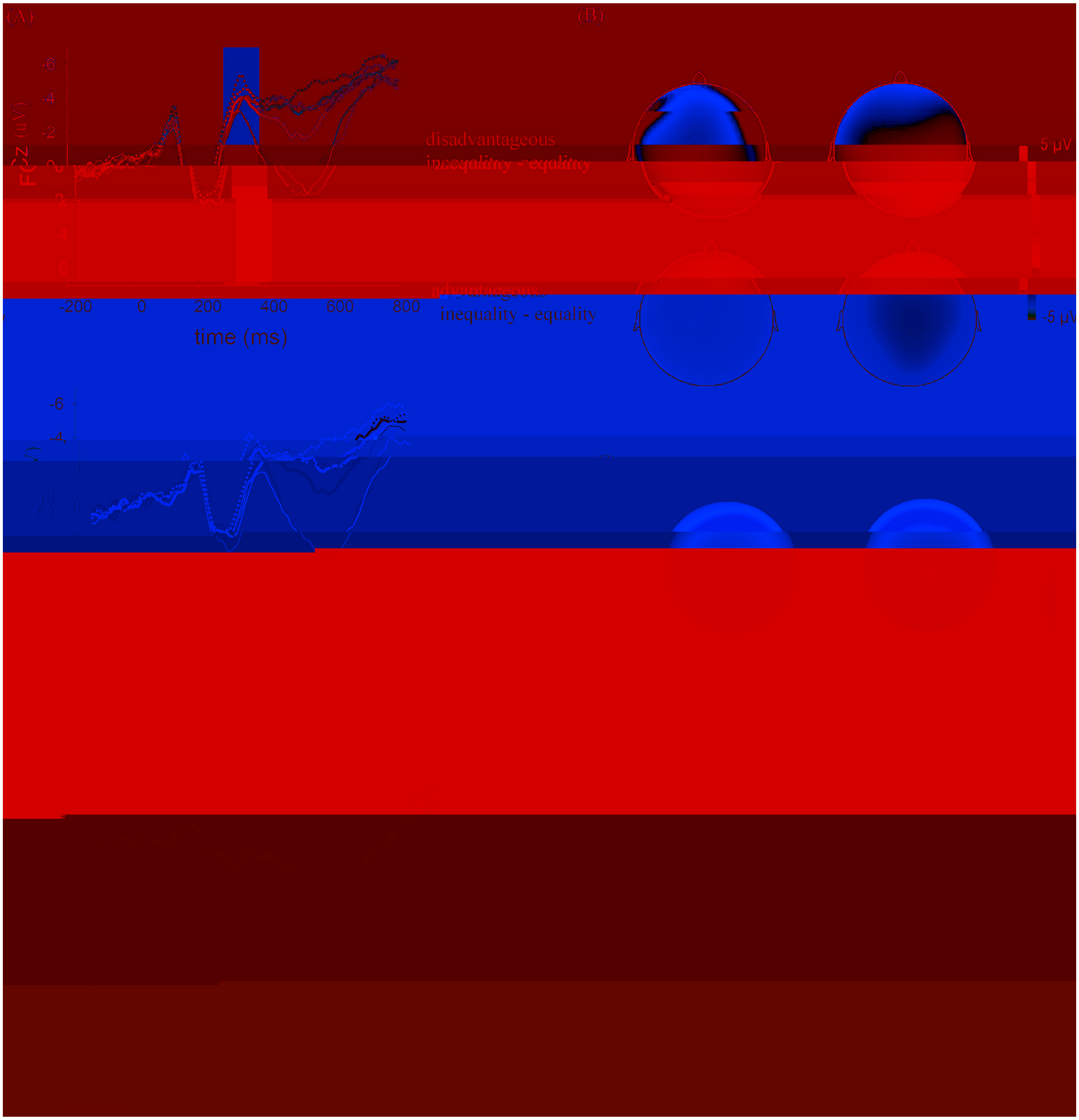

Figure 3. ERP responses and topographic maps. (**A**) ERP responses time-locked to the onset of different offers at the midline FCz, Cz and Pz. The shaded 280–380 ms time window was for the calculation of the mean amplitudes of the MFN. The shaded 400–600 ms time window was for the calculation of the mean amplitudes of the P300. (**B**) Topographic maps for the MFN effects in the 280–380 ms time window. (**C**) Topographic maps for the P300 effects in the 400–600 ms time window.

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c [18,19,60,61], a P300 c a a c a , c b
(a c). a - MFN a a a
N a a ba a " " c a " " c . A
a c a a a c a a a b a ca a MFN
, c b c acc a c a a (−2.21 μV) a a (−1.92 μV), c b
" " c a " " c . O c ac a ca ca c . I
a c a - a b a c a a
a c a . C MFN c a a c a , , c

b c , a , c a a - , MFN . F a a c a ac a b a ac c a a a ac .

I c a MFN, a P300 a a b b a a , a a ac . P c a a a ca a P300 a c a a a ca [62,63] a / - a a /a c a a [13,64]. Acc [57,58], a a ac a a a a b a a a ac . T P300 a a a a a a c a (c a b) a ac a a /a c ca c a a a , c c a a c a .

I a , a a a a a c P300 a a a a a . A b a c a , b a a a a c a c . F a a a a , a c a b a c a a c acc c ; a a a a , a c a a c a a ca a ca , a a b 94% acc a c a .

O a , b a a , b ca a c P300, ba a a b a ca c P300 a a b c / . A b c a a a a P300 a a c a b a , c c P300 a a c [18,37,38,39,40]. I , a a b a ca " " c b c , c , a a a " a ", c a a c c a . C , a a b a ca " " c b c a a " " a ba a a a a

c a / c c a (a [65]).

A a a a a P300 b a a a a b ac , c ab c a ac b a a c a a c b a ca a c DG [27]. W a a - c a c a P300. O c ca a , a a c b ab a c c a /a c ca c . A c ca - a a / . E c ca a P300 a , a a c a a c c a c c a a a c c .

I a , b a a ba a a ca c a c a , a a c a , ac a c , c a a a a a a a a . T a a - MFN a a a a (280 380) a a c a b a . I a a (400 600), , P300 c a c b b a b a a a . T a MFN a c a a a c a a a a c c , P300 a , - c c , c ac a a ca a a c , c a - a a , c a .

Acknowledgments

W a P . A b c I , M . S P -A , M . S Ma a a a c a a c .

Author Contributions

C c a : YW JH ML XZ. P : YW JH. A a a a: YW JH. W a : YW JH EVD ML XZ.

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