



fi

\*

School of Psychological and Cognitive Sciences and Beijing Key Laboratory of Behavior and Mental Health, Peking University, Beijing 100871, China  
Center for Brain and Cognitive Sciences, Peking University, Beijing 100871, China  
Key Laboratory of Machine Perception (Ministry of Education), Peking University, Beijing 100871, China  
PKU-IDG/McGovern Institute for Brain Research, Peking University, Beijing 100871, China  
Department of Psychology, Arizona State University, Tempe, AZ 85287, United States

---

## ARTICLE INFO

Article history:

Keywords:

---

## ABSTRACT

fi

fi

©

---

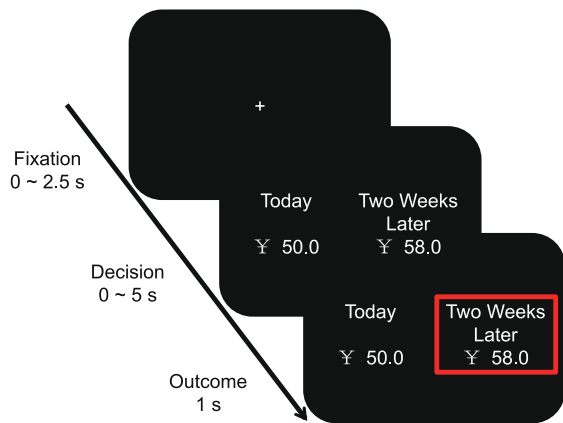
## Introduction

fi

*Intertemporal choice (ITC) task*

**Materials and methods**

*Participants*



$$SV = LL \text{ Amount} / (1 + kD)$$

$k$

$f_i$

$f_i$

$k$

$k$

$f_i$

$f_i$

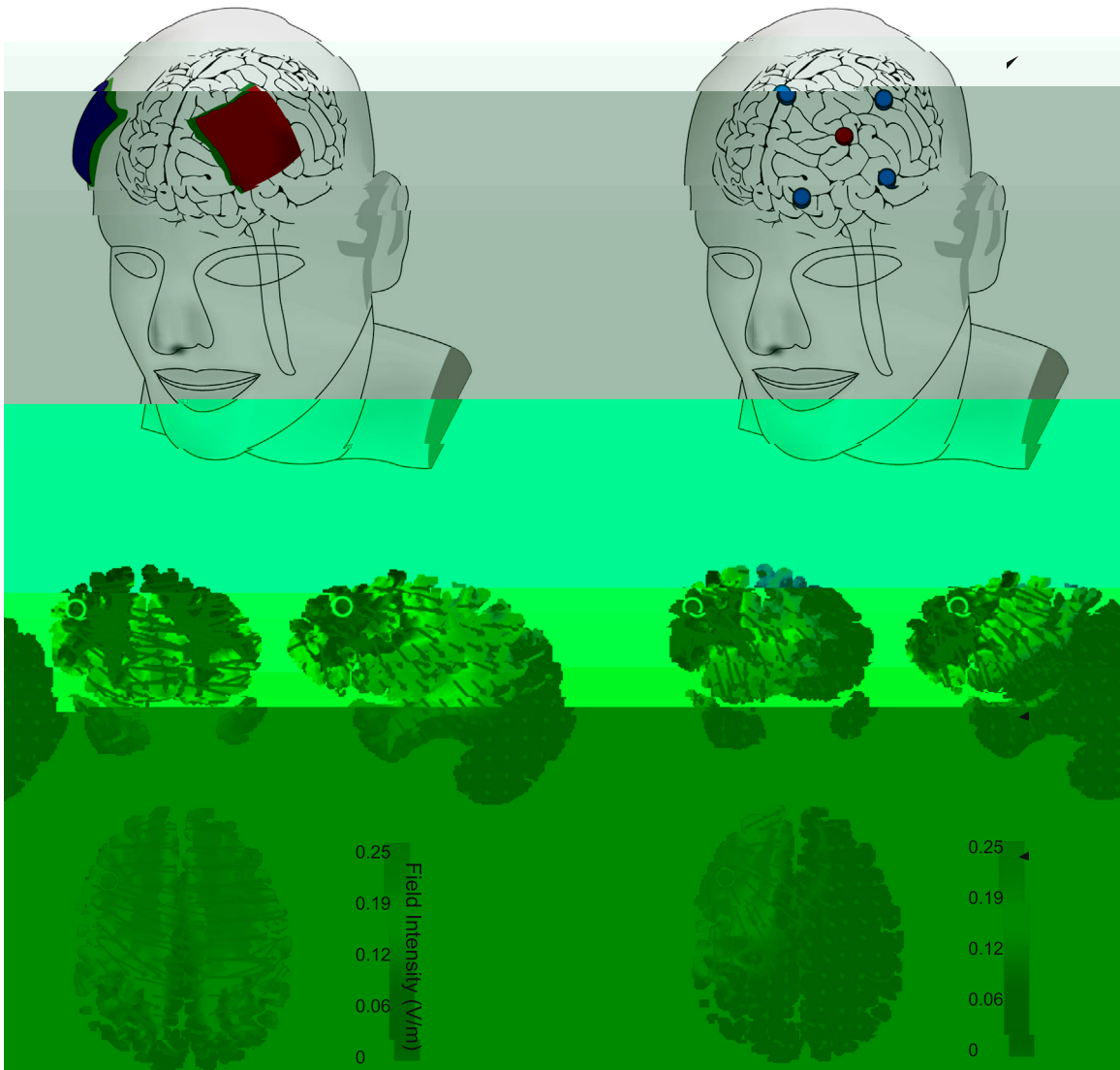
Procedure

=

$f_i$

+ -

- +



Conventional tDCS

Behavioral data analysis

$$\text{logit } P(\text{choose LL}) = \beta_1 \text{ LL amount} + \beta_0$$

$$\text{logit}(0.5) = \beta_1 \text{ indifference point} + \beta_0$$

$$\text{indifference point} = -\beta_0 / \beta_1$$

HD-tDCS

$$SV = \frac{A}{1 + kD}$$

$$SV_{ASAP} = g(D_{ASAP}) \frac{A}{1 + k_{ASAP}(D - D_{ASAP})}$$

$$g(D_{ASAP})$$

$$k \sim N(\mu, \sigma)$$

$$P(\text{choose LL}) = \frac{1}{1 + e^{-b(SV_{LL} - SV_{SS})}}$$

$$b$$

“ k fi ”

**Results**

$\Delta$

$\Delta$

=

$p <$

Immediate context

**Experiment 1.**

+ - - +  
k + - - +

$p =$   $\eta^2 =$   $F =$   $p =$   $\eta^2 =$   
 $k$   $F =$   $\eta^2 =$   $p =$

**Experiment 2A and 2B.**

+ +  
k

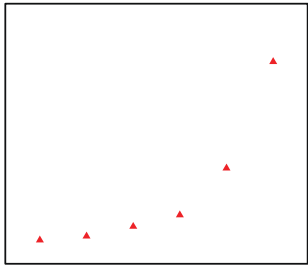
$\eta^2 =$   $p =$   $F =$   $\eta^2 =$   
 $p <$   $post-hoc$   $F =$   $\eta^2 =$   
 $F =$   $\eta^2 =$   $p =$   $t$   
+  
+  
 $\Delta =$   $t =$   $p =$   $+ =$   $t$   
 $\Delta =$   $p =$   $+ =$   
 $t =$   $p =$   $\Delta =$   $t =$

$\eta^2 =$   $p =$   $Post-hoc$   $t$   $F =$   
 $\Delta$   $k =$   $+ =$   $t$   
 $p =$   $+ =$   $\Delta$   $k =$   $=$   
 $t =$   $p =$   $\Delta$   $k =$   
 $t =$   $p =$

k

+  
+

$F =$   $\eta^2 =$   $F =$   $\eta^2 =$   $p =$   
 $p <$   $\eta^2 =$   $p =$   $\eta^2 =$   
 $t$   $F =$   $\eta^2 =$   $p =$



Delayed context

fi

$p = \dots$        $p = \dots$        $p = \dots$

**Discussion**

fi

fi

fi

$$\begin{aligned}
 \eta^2 = \frac{F}{p} = \dots & \quad \eta^2 = \frac{F}{p} = \dots & \quad \eta^2 = \frac{F}{p} = \dots & \quad \eta^2 = \frac{F}{p} = \dots \\
 \eta^2 = \frac{F}{p} = \dots & \quad \eta^2 = \frac{F}{p} = \dots & \quad \eta^2 = \frac{F}{p} = \dots & \quad \eta^2 = \frac{F}{p} = \dots \\
 \eta^2 = \frac{F}{p} = \dots & \quad \eta^2 = \frac{F}{p} = \dots & \quad \eta^2 = \frac{F}{p} = \dots & \quad \eta^2 = \frac{F}{p} = \dots
 \end{aligned}$$

k

fi

$$\begin{aligned}
 F = \dots & \quad \eta^2 = \frac{F}{p} = \dots & \quad \eta^2 = \frac{F}{p} = \dots & \quad \eta^2 = \frac{F}{p} = \dots \\
 p = \dots & \quad \eta^2 = \frac{F}{p} = \dots & \quad \eta^2 = \frac{F}{p} = \dots & \quad \eta^2 = \frac{F}{p} = \dots
 \end{aligned}$$

× ×

fi

$$\begin{aligned}
 p = \dots & \quad p = \dots & \quad p = \dots & \quad p = \dots \\
 & \quad k & \quad \times & \quad \times \\
 & \quad & \quad \text{fi} & \quad \times
 \end{aligned}$$

et al.,

fi

fi

fi

fi

fi

66.1(effect)-s446.9(2))TJ /Cs8 cs 1 scn 247(l248 TD [(Fig.)-334.1(st]TJ 0 0 0 rj 2 195710 TD [(eH.)-359.4(d)is)-371.4(usseline)--pended)nt437.9(in  
(])T /Cs8 cs 1 scn .7136 0 TD [(Fir)2-379.5(3t)-381.2(t), st13t0 TD [(.)-35072(ThG)16.7(5n)-353.7(the)

1238 9) 218 (132-5(30)4) 5.7(the)-477.8(imseline)-474.8(imai)1ty  
tint2t9 502mC t

tiPvious onwo23r-116.8(deh1]T66.1(al.)-366.2(c)oh)1-37674(t)7 iman37684(s)diviu

3 7  
diudct



**Conclusion**

...

**Acknowledgment**

...

**Appendix A. Supporting information**

...

**References**

...

...

...

...

...

...

