: 2016 46 10 : 1222 ~ 1229
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: 2016-08-23; : 2016-08-26; : 2016-09-30

12), , Super Hirn((1A). Super Brain) . 2014~2016 , , №. , , . 2014 27 ? , , 2016 , 22 ( ) . , " ". , , [1]. , , , . . , , , . , . , ? , , " " , ? : . (1) , " " , " " " " ; (2) , " " " , (,

1

: , , , . . : , 2016, 46: 1222–1229
Chen L J, He K, Wei K L, et al. Psychology, cognitive science and brain science behind *Super Brain*. Sci Sin Vitae, 2016, 46: 1222–1229, doi: 10.1360/N052016-00272

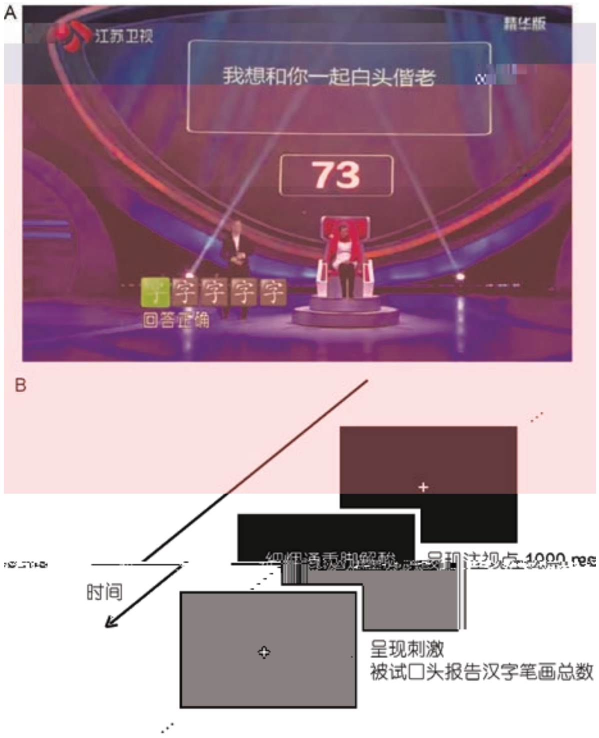
(autism spectrum disorder, ASD)

(numerosity estimation)[2~4].

(1B).

(functional Magnetic Resonance Imaging, fMRI)

(left hippocampus)



1 (A) (B)

(autism spectrum disorder, ASD) (obsessive compulsory disorder, OCD)

(autism-spectrum quotient, AQ) (obsessive-compulsive inventory-revised, OCI-R)

[4], , ч

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. , ч ˥ ˂

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ί Ђ . , (savant syndrome) , ί " " Ѣ Ŧ .

Ґ

Ѧ Ŧ [5,6].

(ὶ) ˂ ΰ ὶ , (calendar calculating, Ѧ Ŧ Ŧ) [5,6].

ӟ Ѣ ӟ ˂ ΰ [6,7], Ѣ " " .

, ˂ ΰ Ѣ ˥ ,

˂ ΰ Ð [5], Heaton Wallace [7] Ѧ Ŧ

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Heaton Wallace[7]

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(Asperger syndrome) ί

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(ﻁ 2A).

24 , ,

Ŧ 1/24 s, 42 ms. (

) 42 ms " "

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ӟ , ˥ ˂

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ч ӟ (perceptual learning).

ӟ ĩ , Karni Sagi[8] (texture discrimination task, TDT) Ѣ ч ,

┬

. TDT ,

β ˂ "T" "L",

ч ┬ ,

┬ 3 45° ┬

(Ѧ ┬), ┬ № ч

ң , , β

, ┬

. , ῴ 250~300 ms

, 10 ms ┬ ,

(stimulus-to-mask-onset asynchrony, SOA) 100 ms ┬ (ﻁ 2B). ┬ , ῴ

(Ѧ "T" "L"), ˂

┬ Ѣ ,

┬ ; ┬

, ┬ (Ѧ " "

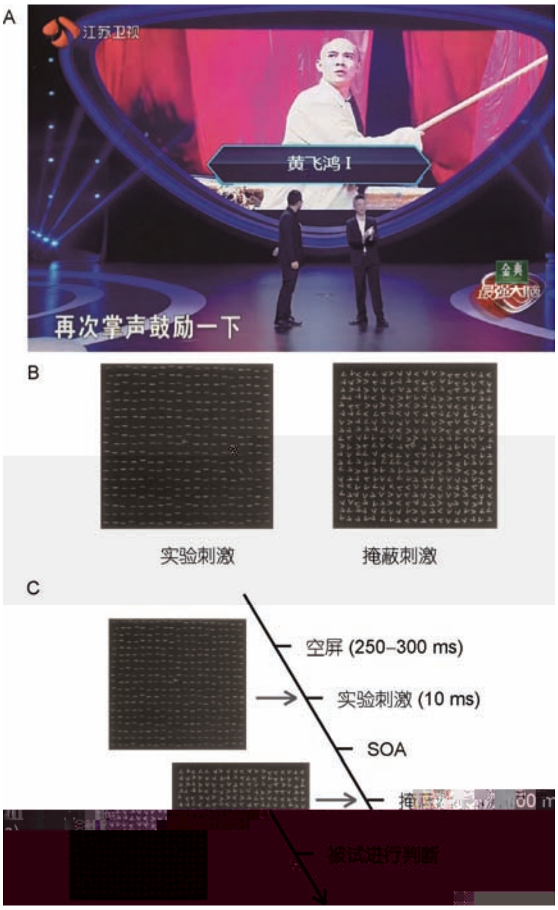
" ") (ﻁ 2C). ч ,

˥ ˂ ч SOA Ѧ ч

.

, SOA ч

100~150 ms, 5~10 (



2 “ ” (A) (B) TDT (C)( )

1000) , 50%~70%, 40~50 ms [8], 40~50 ms, , TDT . ,

10 .

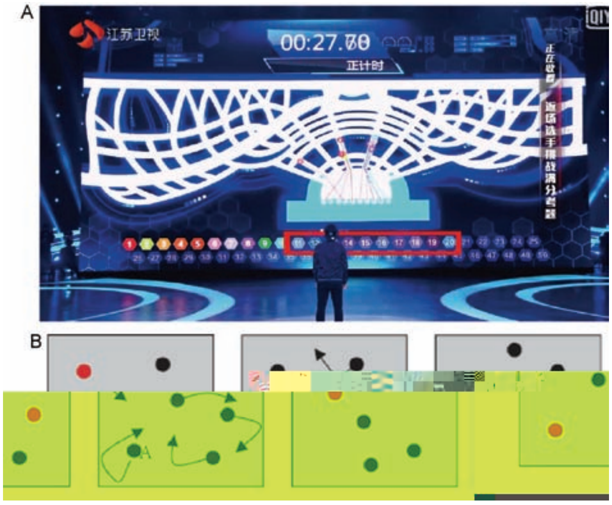
, [9~12]. , , [13] [14]. , (V1)[15] , ,

[9], [8,16]. [17,18].

, , 1 (V1) [19], [20,21]. , , (amblyopia) . , 12 , , , , . , . , [22,23], .

3

, “ ” . , 50 15 min, 50 , (3A). , (multiple-object tracking, MOT) . , . , ; , . 30 , , . 1998 , Pylyshyn Storm [24]. , . , (target item),



ط 3 ê Ì “ ”(A) ǚ ĩ [25](B)(ط)

(distractor item). ,
7~15 s.
ч (ط 3B). ,
, ч (tracking capacity). 0 :
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[25]. ,
15 min 50 , ƀ
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ƀ : ῳ 50
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ч , (visual attention)
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, ˥ ῳ ,
ƀ , ч
(multifocal attention), № [25].
№ [24] ч ,
˥ ƴ ƀ ℗ ; Ŧ

(visual index) ℗ ,
, ч ℗
(switch model) (preattentive indexes theory). ƴ н №
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2 , ˥ ħ №
[26].
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ƀ ?
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(superior parietal lobule, SPL)
(frontal eye fields, FEF) (intraparietal sulcus, IPS) (middle temporal complex, MT+)[28~31]. ἶ , SPL FEF ˥ ,
MT+ β , IPS ˥ .

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. β ƴ ῳ
Ŧ , Ŧ
ῳ (ط 4A).
№ ƀ , ƴ . Ʉ ,
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(biological motion) .
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ῳ , [
Ŧ . ,
, ῳ (ط 4B)[32].
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4 “ ” “
”(A)
(B)( )

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( )[34] [35] .
[36], .
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[38,39], .
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[40].
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⇔ , " ط " З ꙰ . ч Й .

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