



(D & , 2011; C & , 2011; & , 2006; & , 2009; & , 2009; [ , 2017; & , 2011).

(A , C , & , 2012; C & , 2016; D & D , 2004; & , 2009; & [ , 2007) & [ , 2016).

& , 2012; , C & , 2014; & , 2012; , C & , 2013).

A

( , , ) (C & , 2016; [ , & [ , 2015, 2017; [ , & , 2014; & , 2016; & , 2012). (2016)

( ) ( , )

(A , 2012; C & , 2016; & [ , 2007).

( & , 2009).

( & -B , 2012; & C , 2006).

( , A , & , 2012) ( & -B , 2016; , 2011).

[ & [ , 2017).

D

[

1,

2 3,

1,

**Experiment 1**

1

(1.6 1.6).

3

2.

**Method**

**Participants**

(11 ; : 19–26 ; : 22.4 ; )

A

& B (2007),

0.25 (80%,

2 3). A

28,

25

(C & (2016;

& (2009)

(., 28)

2 3.

**Stimuli and apparatus**

(B (1997; (2007) A AB

(A, A) C 100 1,024 768 70

C AB (28.5 / 2

32.2 / 2, 78.4 / 2) ( : 1.4 1.4 ; : 1.6 1.6 ; : 1.4 1.4).

**Procedure**

(2015, 2017)

A

1,

500 B (0.4 0.4)

500

C

A 1-

150

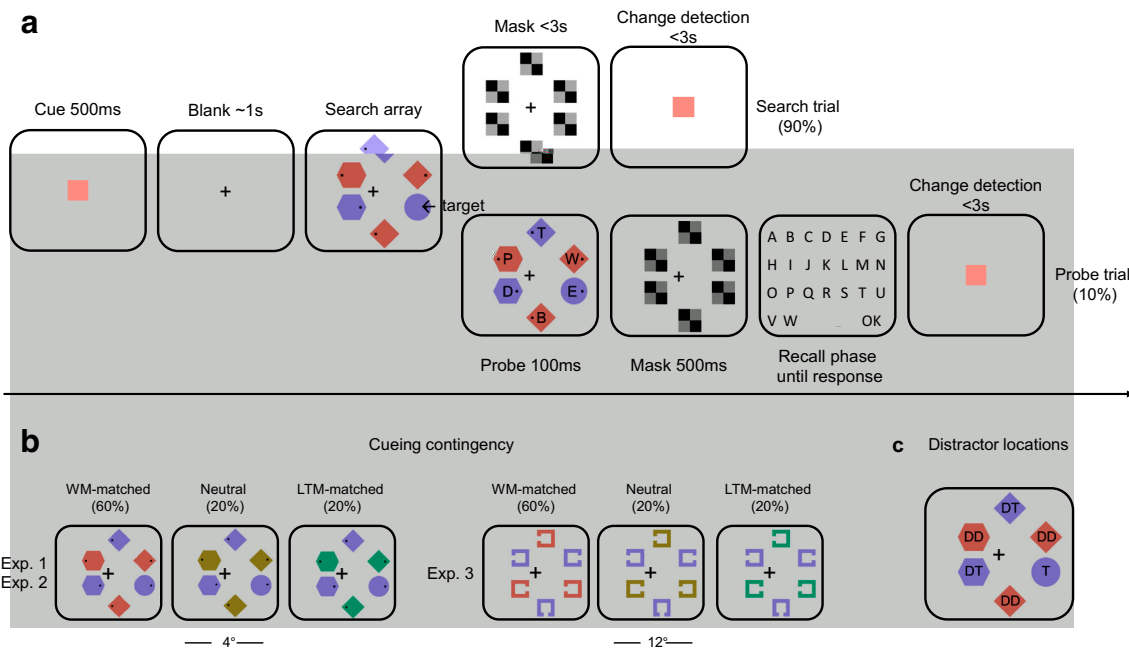


Fig. 1

(a) A 1. 2. 150 2. 3. 1. 2. (b) 1. 2. 3. (c) DT, DD

Data analysis

(p < .001) 18.06% 200 2.5 4.33% 5.90% A G B G

Results

Search trials

A 2, = A A (F (2, 48) = 10.572, p < .001, η² = 0.306). (p = .008) (F (4, 96) = 192.805, p < .001, η² = 0.889), (F (2, 48) = 10.415, p < .001, η² = 0.303), (F (8, 192) = 4.023, p = .016, η² = 0.144). (ps < .05).

Condition

C

(F (2, 48) = 7.587, p = .001,  $\eta^2 = .240$ ). C

(p < .001) [ (p = .049)

(p = .869).

( , 2012).  
A

( : F (2, 48) = 1.649, p = .203;

: F (2, 48) = 2.116, p = .132,

1).

Probe trials

1.98

(F (2, 48) = 1.549, p = .223, 2).

( . 1):

( . D ),

DD).

[ ( , D , DD)

( - . [ - A A.

(F (2, 48) = 190.802, p < .001,  $\eta^2 =$

.888)

(F (2, 48) = 0.569, p =

.570). C.

(F

(4, 96) = 4.103, p = .011,  $\eta^2 = .146$ ).

(F (2, 48) = .04, p = .963),

D (F (2, 48) = 7.85, p < .001,  $\eta^2 = .258$ ).

(F

(2, 48) = 9.63, p < .001,  $\eta^2 = .300$ ). A

D ,

(p = .010)

[ (p = .009) . A

DD,

(p < .001)

(p = .043)

(F (2, 48) = 0.264, p =

.715, F (2, 48) = 1.687, p = .196,

).

Discussion

G (2015),

DD

Table 1

Condition	N	ACC		C		ACC		C	
		Mean	SE	Mean	SE	Mean	SE	Mean	SE
1	↗	666 (83)	0.83 (0.09)	626 (105)	0.98 (0.02)	1074 (217)	0.96 (0.04)		
		687 (85)	0.85 (0.08)	648 (110)	0.97 (0.02)	1122 (230)	0.97 (0.05)		
2	↘	660 (87)	0.84 (0.09)	641 (102)	0.97 (0.02)	1083 (222)	0.96 (0.08)		
		690 (115)	0.77 (0.06)	541 (77)	0.94 (0.04)	935 (217)	0.79 (0.11)		
3	↖	708 (127)	0.76 (0.06)	575 (85)	0.91 (0.06)	977 (224)	0.65 (0.18)		
		703 (120)	0.77 (0.05)	588 (107)	0.90 (0.07)	973 (251)	0.68 (0.17)		
3	↗	813 (153)	0.74 (0.05)	532 (90)	0.95 (0.04)				
		822 (170)	0.74 (0.06)	543 (93)	0.91 (0.07)				
3	↘	828 (165)	0.73 (0.06)	570(115)	0.92 (0.08)				

D. ... ( ... ) ...

Stimuli and apparatus

Experiment 2

2 ...

Procedure

1 ... 2 ...

Method

Participants

(10 ; : 18–28 ; : 22.3 ; ) . A

Table 2

Condition	N	D		D	
		(D)	SE	(DD)	SE
1	↗	0.67 (0.15)	0.25 (0.09)	0.28 (0.11)	
		0.68 (0.19)	0.32 (0.12)	0.22 (0.11)	
2	↘	0.67 (0.19)	0.24 (0.11)	0.26 (0.11)	
		0.47 (0.16)	0.20 (0.11)	0.20(0.11)	
3	↖	0.46 (0.18)	0.21 (0.12)	0.20 (0.11)	
		0.50 (0.21)	0.24 (0.15)	0.18 (0.12)	

500 ... (F (5, 120) = 7.716, p < .001, η² = .243).

-B, C, & ( & [ , 2007; ,

100 200  
137  
(39%)  
1.

**Data analysis**

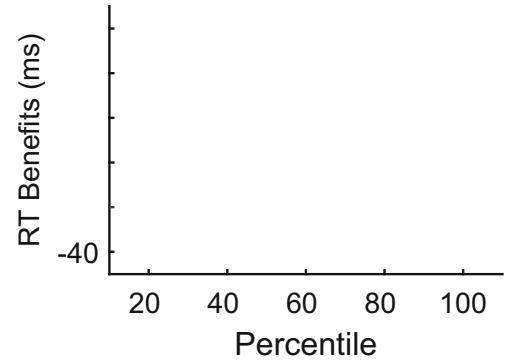
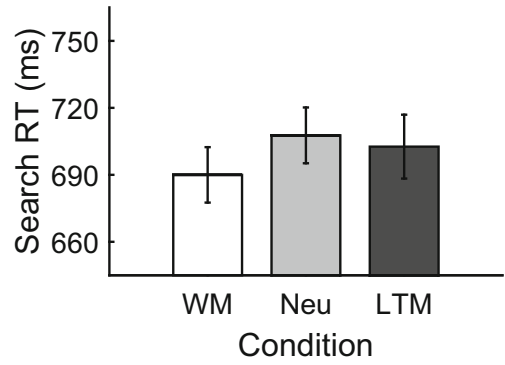
1, 28.4%  
, 4.81% 4.72%

**Results**

**Search trials**

(F (2, 54) = 1.845, p = .168,  $\eta^2 = .03$ ). (F (2, 54) = 0.936, p = .398). A 1, (.3). (F (4, 108) = 149.413, p < .001,  $\eta^2 = 0.847$ ), (F (2, 54) = 1.876, p = .163), (F (8, 216) = 6.707, p = .001,  $\eta^2 = 0.199$ ), (F (2, 54) = 5.04, p = .010,  $\eta^2 = 0.157$ ) (F (2, 54) = 6.15, p = .004,  $\eta^2 = 0.186$ ) (p = .016). (p = .006) (p = .027)

C 1, (F (2, 54) = 18.836, p < .001,  $\eta^2 = 0.411$ ). (ps < .001). (F (2, 54) = 14.192, p < .001,  $\eta^2 = 0.345$ ) (ps < .001).



**Probe trials**

1.49 (F (2, 54) = 0.332, p = .719). A A ( .3 . A

( $F(2, 54) = 91.432, p < .001, \eta^2 = .772$ ),  
 ( $F(2, 54) = 1.989, p = .147$ )  
 ( $F(4, 108) = 1.627, p = .188$ ).  
 D DD  
 ( $p < .001$ ). A  
 ( $F(2, 54) = 0.936, p = 0.378$ ),  
 ( $F(2, 54) = 11.197, p < .001, \eta^2 = 0.293$ ).  
 ( $p < .001$ ) ( $p = .002$ )

**Discussion**

2016; & B, 2016; & , 2016).  
 A  
 A  
 ( & , 2017).

2

G (10%)

**Experiment 3**

3,  
 (12 12  
 4 4 1 2) ( , & , 2009;  
 , 2005; & , 2007).  
 (D & D , 1995).

**Method**

**Participants**

( ; : 18–27  
 ; : 21.3 ; ) A

**Stimuli and apparatus**

2,  
 (0.6 0.6 )

**Procedure**

A , 1- ,  
 (0.12 0.12 ) . D  
 6  
 8 ( ) 0  
 ( ) ,  
 2,

500

2.



280 C

1000 (1,000 , )  
 100  
 3.

**Data analysis**

1, 30.30%  
 , 2.20% 4.06%

**Results**

D  
 (F (2, 54) = 0.681, p = .462,  $\eta^2 = .04$ ) (F (2, 54) = 1.403, p = .255). A  
 (F (4, 108) = 220.957, p < .001,  $\eta^2 = .891$ ), (F (8, 216) = 2.919, p = .051,  $\eta^2 = 0.098$ ), (F (2, 54) = 0.680, p = .463).  
 (p = .040) .A  
 (F (2, 54) = 8.797, p < .001,  $\eta^2 = 0.246$ ) (F (2, 54) = 13.835, p < .001,  $\eta^2 = 0.339$ ). C  
 (p = .001) (p = .033)  
 . C  
 ( ps <= .001).

**Discussion**

2  
 .A  
 2

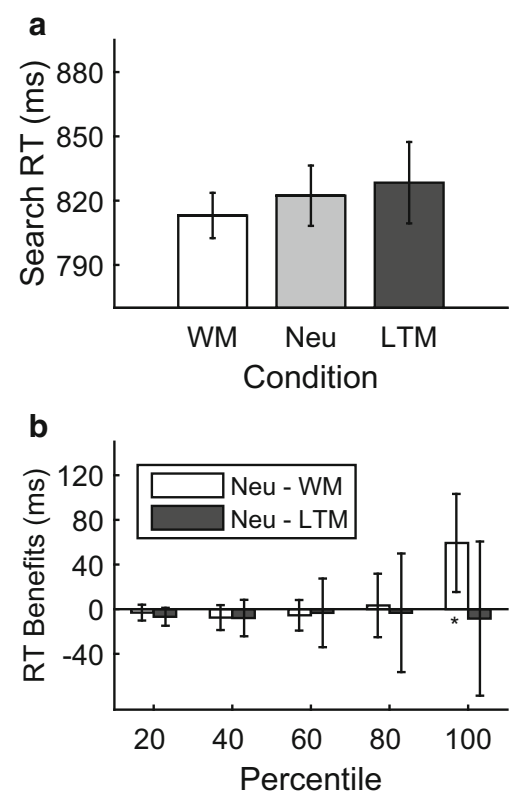


Fig. 4 (b) 3. (a)  
 95%  
 (\* p<.05, \*\* p<.01, \*\*\* p<.001)

**General discussion**

(B , 1992; D' &  
 , 2015).  
 1  
 2 3,  
 .A  
 2

A (A, B, & C, 2011; A, B, & C, 2015; A, B, & C, 1992).  
 (A, B, & C, 2006; A, B, & C, 2005; A, B, & C, 2010).  
 (D & E, 2011; A, B, & C, 2012; A, B, & C, 2009; A, B, & C, 2007).  
 1,  
 (C & D, 2016; G, 2015),  
 1,  
 C (2016)  
 (A, 2009) (A & B, 2008).  
 1,  
 (C & D, 2016; A & B, 2016),  
 2 3,  
 (2009).  
 (B & C, 2007; B, 2012).  
 1,  
 2 3,  
 (D & E, 2011; A, B, & C, 2012; A, B, & C, 2009; A, B, & C, 2007).  
 1,  
 (C & D, 2016; G, 2015),  
 1,  
 C (2016)  
 (A, 2009) (A & B, 2008).  
 1,  
 (C & D, 2016; A & B, 2016),  
 2 3,  
 (2009).  
 (A & B, 1968; B & C, 1974) (A & B, 2017),  
 150 1,  
 150–300 (A & B, 2012; A, 2010).  
 (C & D, 2017; A & B, 2016).

(...)

1. 2 3,

(2014).

E

Acknowledgements

C (31470974, 31230029)

&D C (2017, B1002503).

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