Research Report

Effects of spatial distribution of attention during inhibition of return (IOR) on flanker interference in hearing and congenitally deaf people

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A R T I C L E I N F O

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A B S T R A C T

T . . . d d ac. b a a .d b . a . d b (IOR) a d d . a . . c c a d a. bȷ c a c a d a bȷ c . C (E 1) a d a a c 52

.T a a d b a . . . a .a a d IOR. S bȷ c a d .a c /d d c a . . . c .a a d .c ab - . a a . D a bȷ c ca a a a

1. Introduction

R c b a a a d b a a d a
c c a d a bʃ c d c a
d c a a a a c d d a a
c a d a , c a a
a d a a d a d a a
a -d a d (. ., R bac a ., 1999; S a
a ., 1998). F a , Ba a d c a (2000, 2001)
d a d a bʃ c b a d c a
a c a c a , a bʃ c d
a C d , a a
c a ac a d d a bʃ c a a
bʃ c (Ba a ., 2001), a d c c c
b d a a / d a a
c (MT/MST) a d a a c a
d a a a bʃ c d a b
c a a (Ba a ., 2000). B a a
c a ad a a c c a d a a d
b a c a
a d a , P c a d Ba (2002) d a d a
bʃ c d a 7d a

. . a d . a IOR c a c a d.

I E 1, . a . a d - . a d c c (E a d Sc , 1979; M a a ., 2001; a V a ., 2001) b (. ., . d, , b), (. ., red, green) a d . (yellow, blue) . a . . A a a d a a . d - (. ., d,) d c c c a b - . . a d . (“ - c . . ” c d , RI), a a a d a . a (. ., red, green) . d c. c c . . a - (“ - c . . - ”. c d , SI). T . a a a c c d c . a a d a (“c. ” c d . , CO). T , a . CO c d , RI c d c d d c c c a b . . a d - . . , a SI c d c d . a c c a a . . - . T . c a b RI a d SI c. d . d . a c c a . . S a a a a . d E 2 c . (A a d B) d d (4 a d 5) d a . .

W d a a a . . . c . c d c . d c . a , a d c a a . a . c . b . a . R ac a ca b b c c a c . , b a . dbac a c a . c (. ., E . a d Sc , 1979). N , b ab a . a . ca a , a a , b . . ac b a c a d a a a a . . . a - . . . a d ac d a d b a a ab a . a c . a a d d a . W a a . a d a ca a a . c . . b a c a . . a d c . a . a bʃ c . I . a a a c d d a bʃ c a c a d a bʃ c , a bʃ c d a a b a a a c a d a bʃ c . a c d a ca a a c . a a d.

2. Experiment 1

2.1. R

I c . c d ca d d a d RT . a 1500 . a 200 (0.75% a . a . a bʃ c a d 1.21% d a bʃ c) a d ca d d. M a RT a d . . a . . ca c a d. ac bʃ c a d a c d. . Tab 1 . . a . a RT a d . . a a c d E . 1 a d E 2. .

RT . a d c a ac bʃ c d a 2 (bʃ c .) 2 (c a d .) ANOVA. R . d a a . . c . c a d a ca , $F(1,36)=9.95$, $p<0.005$, d ca a , ac . bʃ c , RT a a a c d . ca (644) a a c d . ca (662). T a c . bʃ c a . ca , $F(1,36)=9.20$, $p<0.005$, a . a d c RT . a a . a c a d a bʃ c . (624 .) a a . bʃ c (683 ; F . 1A). T ac . . b c . a d a d bʃ c a . ca , $F<1$, d ca a IOR c a ac .

Table 1 – Mean reaction times (ms) and error rates (%) as a function of cue validity and flanker congruency in Experiments 1 and 2

			C d			U c d			D c	
			RI	SI	CO	RI	SI	CO	C d	U c d
E .	1A	RT	776	729	744	769	760	741	694	672
H a		SD	88	83	74	79	79	80	59	54
(25% .		E .	4.7	2.0	4.3	4.4	2.7	3.6	0.9	0.7
d c .)										
E .	1B	RT	757	730	722	752	729	729	631	617
D a		SD	77	58	83	73	61	77	70	67
(25% .		E .	4.1	2.3	3.9	3.7	2.7	2.5	0.8	0.6
d c .)										
E .	2A	RT	744	701	720	724	726	729	680	665
H a		SD	101	89	98	98	94	95	82	88
(25% .		E .	1.9	1.7	1.9	2.7	2.7	2.9	1.4	1.9
d c .)										
E .	2B	RT	774	751	747	780	747	739	626	613
D a		SD	104	99	97	111	90	98	70	62
(25% .		E .	2.0	1.7	0.2	2.0	1.5	1.5	2.0	1.1
d c .)										
E .	2C	RT	682	666	666	685	661	666	521	500
H a		SD	68	66	64	66	64	64	73	75
(57% .		E .	1.1	1.7	1.4	1.4	1.4	1	0.3	0.3
d c)										

RT c a c d c a a ac
b d a 2 (bj c) 2 (c a d) 3
(a c c) ANOVA. R d a a
c a c c a ca ,

, c a (b 59) a d c . a
a a a . . bj c a d . c a d .
T a a
. a d a bj c . a a d acc a
a . a . bj c . a d c (L a d S , 1991) a d
d c . a (N a d La , 1987a,b) -
d .

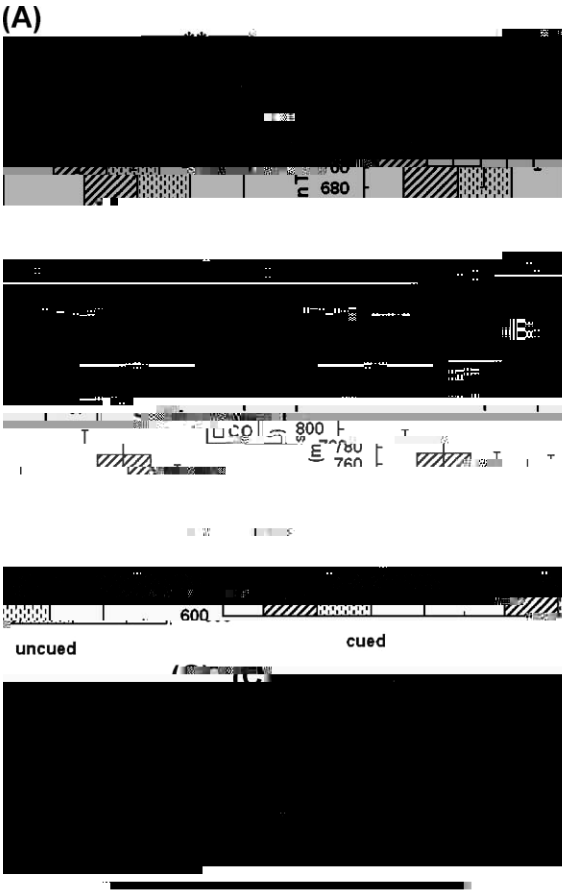

Fig. 3 – (A) Plots of mean RTs with standard errors as a function of cue validity and flanker congruency in the central letter/digit discrimination task of Experiment 2A (hearing group, 25% detection trials). (B) Plots of mean RTs with standard errors as a function of cue validity and flanker congruency in the central letter/digit discrimination task of Experiment 2B (deaf group, 25% detection trials). (C) Plots of mean RTs with standard errors as a function of cue validity and congruency in the central letter/digit discrimination task of Experiment 2C (hearing group, 57% detection trials) (*$p < 0.05$; **$p < 0.01$).

t(18) = 2.38, p < 0.05, b a . . c a a bʃ c . . d d faster SI . . a . CO , c ca d SI ac a . . c E - 1A. A . c d ca , ca c b d a bʃ c . .

F . . d a , a c a c . c a . ca , F(2,32) = 16.36, p < 0.001. N a c ac ac d . ca c . F. c c . . c a d ca d . c b RI a d SI c d a b . c d ca , t(16) = 4.07, p < 0.005, a d c d ca , t(16) = 3.26, p < 0.01, - a . a c a b ca . H. , . . . - . c a ca , ... d . c b RT SI a d CO (p > 0.1; F . 3B).

A a . . . a . . c . a d c a a d d . . a a ca c .

3.1.2. Experiment 2C

I c a F . 3 a a . . a c c c . a . c d a . d c d ca . a bʃ c a . a a d a bʃ c E 2B, a . bʃ c a ca d a a . c . . . b . ca . . a . . . . . a d . c a . S a . . ca a a c d b a- . A 2 (c . a d) 3 (. a c c) ANOVA a d a ca . a c . a c . c , F(2,40) = 21.40, p < 0.001. N a . c c a d ac . . b c a d a d a c - c a ca , b . F < 1. F. c c . . c d ca d c b RI a d SI c d a b . c d ca , t(20) = 3.39, p < 0.005, a d c d ca , t(20) = 4.72, p < 0.001. N d c d b SI a d CO c d , b t(20) < 1. . .

A ca IOR c (21) . a b a d a d . c a E 2C, t(20) = 8.34, p < 0.001. T c a c a ab . a E 2A (15). A 2 (E 2A . E 2C) 2 (c a d) ANOVA d . c da a . . d a a c c . a d . a ca , F(1,38) = 22.18, p < 0.001, b ac b . - a d c a d a . , F(1,38) < 1. M . , a . c . a ca , F(1,38) = 42.3, p < 0.001, d ca . a . a RT . a a . ca a E 2C (510) a E 2A (672).

3.2. D

R . a d . c a ca d E . 1 b . a d a bʃ c . a . a a bʃ c . a d c . a a c- . . c a d a d a a a d d a bʃ c b d . c . a ab . IOR c . F, c a /d d c a a . , d a bʃ c . a c ad . a . a . a . . a c . c a c d c a . a E 1B, . . c a c d a d c d ca . H a bʃ c a . d a a . . c c c a c . d ca . . . a , . . c RI . a d ac a . SI . A c d ca , . . , a . . bʃ c d d . a c c c /d d c - a . a . W a bʃ c . . c d . a a a a . d E 2C b ca a . c a a d . c . a . , b a d d a . bʃ c . c a d c a a . a d d a a RT a a .

T ca . c c a c d ca a d ab . c . a c c a c d ca E . 2A a . a a a c d ca c d a a . c a d ca . d c a a . a c d ca

(La a d T a , 1994

b a a bʃ c a a a ,
ac a c a a (

c a (“ - c ” c -
d , SI) ad d c , b a d
a . I a a d a
d c a d a d d ,
c d d c a b a d
(“ - c ” c d , RI). P -
a a d c a a add d -
, c a d a a d a bab a
c d (b d) c d (- b d)
a ca a d bj c a d d c a
c a b .

5.1.1. Subjects

T - (10 a , a a : 21 2 a) a
bj c d E 1A. S c a ,
ca d a bj c (8 a ; a a : 20 1.5 a)
a c a d E 1B a d ad a b a a a
>90 dB. A bj c ad ca
d d , a d c a d a d
a c a . T a a d d a d ad
a c c d- - a c a
c b d . A bj c a d a c a-
a . T d a a d b

d . T a a - a d
c c a ca d b a bj c a
A

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