



Cross-modal attention modulates tactile subitizing but not tactile numerosity estimation

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Abstract

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Keywords Attention - Working Memory - Touch

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Experiment 1

Method

Participants

Apparatus and materials

Design and procedure

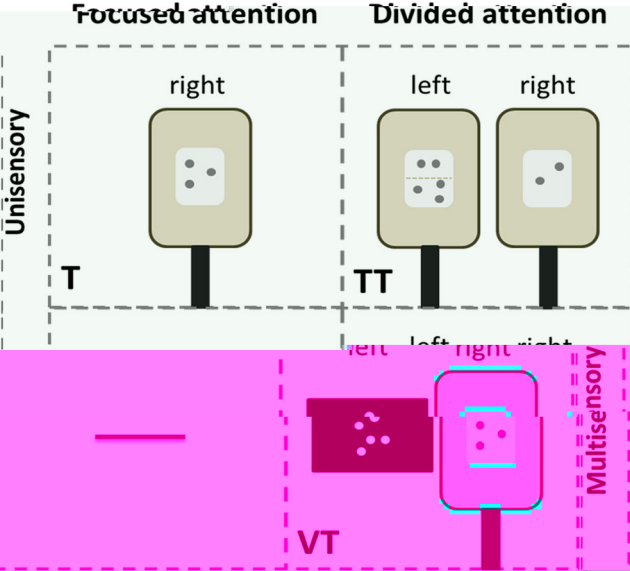
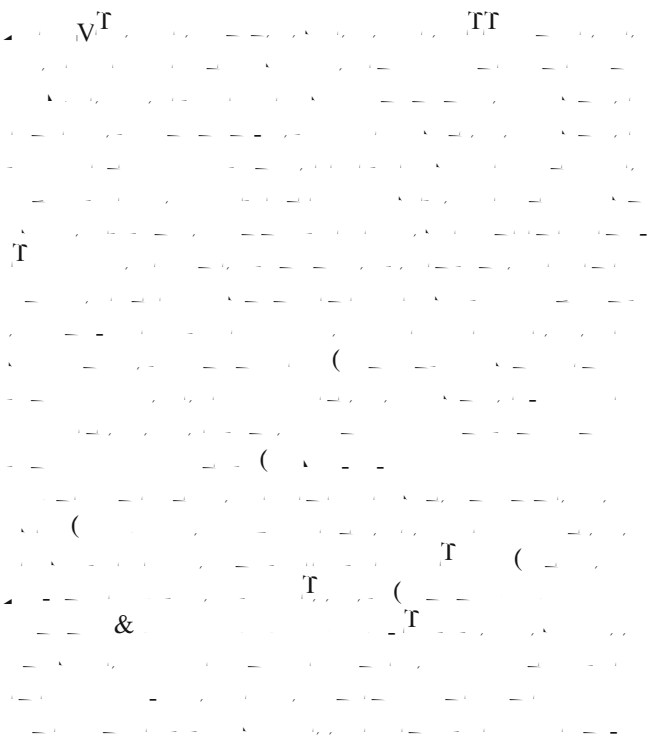


Fig. 1



Results

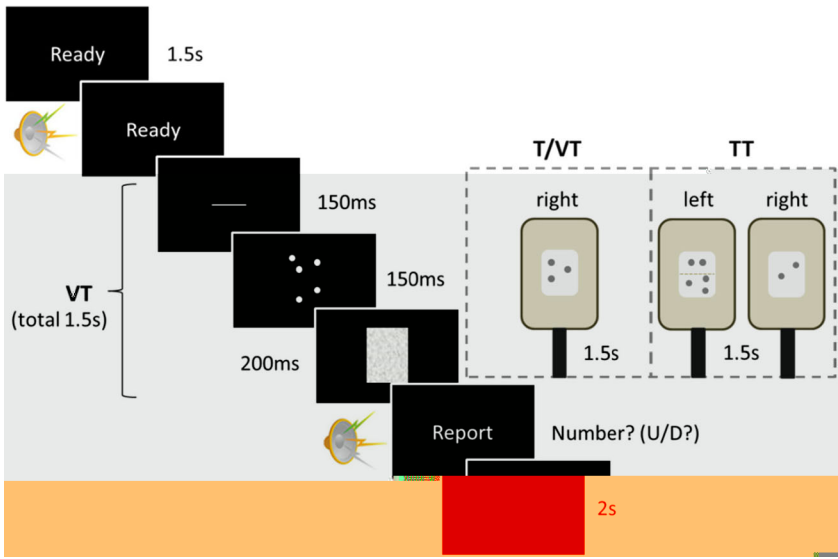


Fig. 2

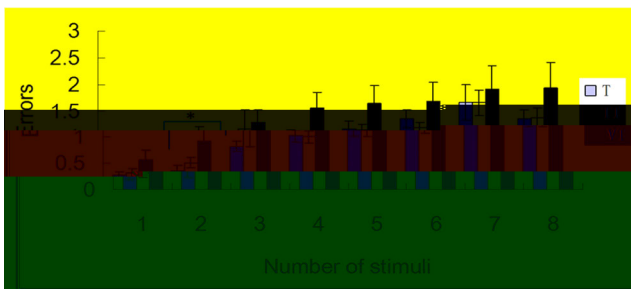


Fig. 5

Method

Participants

Design

Results

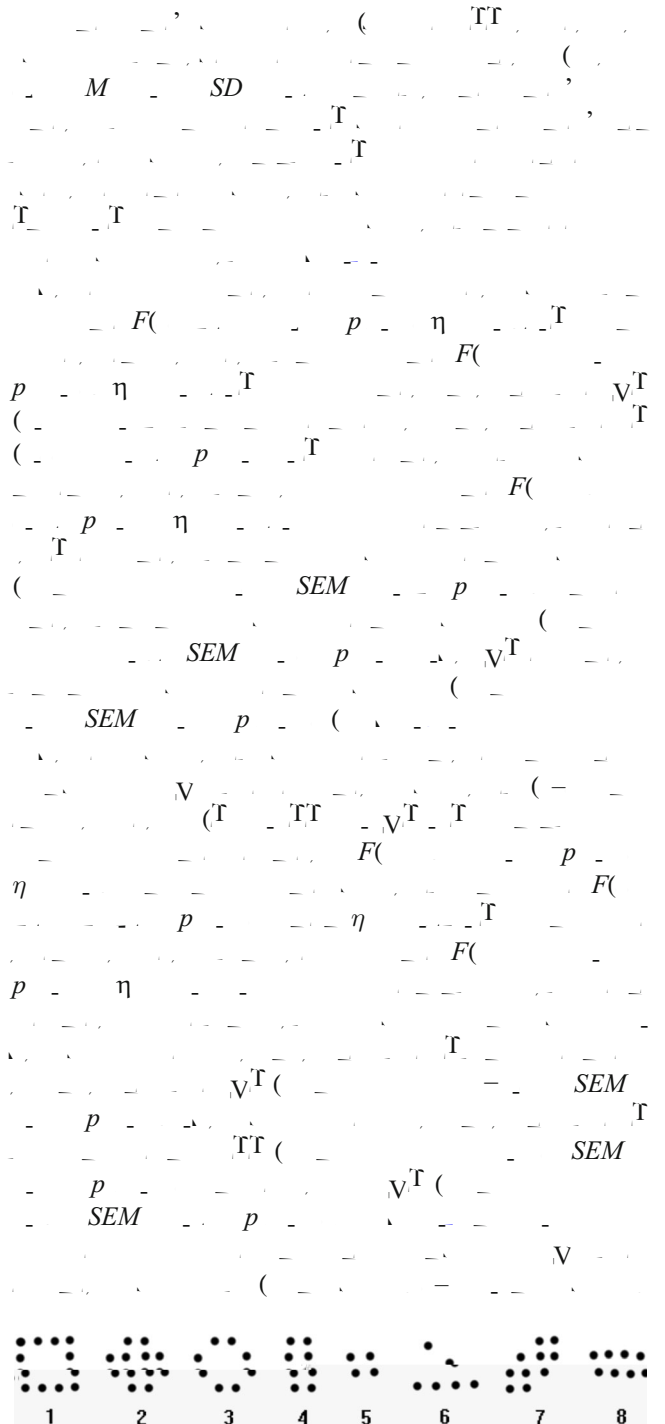


Fig. 6

Table 2

<i>N</i>	Γ	$\Gamma\Gamma$	$V\Gamma$
1	(. .)	(. .)	(. .)
2	(. .)	(. .)	(. .)
3	(. .)	(. .)	(. .)
4	(. .)	(. .)	(. .)
5	(. .)	(. .)	(. .)
6	(. .)	(. .)	(. .)
7	(. .)	(. .)	(. .)
8	(. .)	(. .)	(. .)
9	(. .)	(. .)	(. .)
10	(. .)	(. .)	(. .)
11	(. .)	(. .)	(. .)
12	(. .)	(. .)	(. .)

Note. *N*

Γ	$\Gamma\Gamma$	$V\Gamma$	Γ
$F(\Gamma, \Gamma\Gamma)$	p	η	$F(\Gamma, \Gamma)$
$F(\Gamma, V\Gamma)$	p	η	$F(\Gamma, \Gamma)$
$F(\Gamma\Gamma, \Gamma)$	p	η	$F(\Gamma\Gamma, \Gamma\Gamma)$
$F(\Gamma\Gamma, V\Gamma)$	p	η	$F(\Gamma\Gamma, \Gamma\Gamma)$
$F(V\Gamma, \Gamma)$	p	η	$F(V\Gamma, V\Gamma)$
$F(V\Gamma, \Gamma\Gamma)$	p	η	$F(V\Gamma, V\Gamma)$
$F(\Gamma, \Gamma)$	p	η	$F(\Gamma, \Gamma)$
$F(\Gamma\Gamma, \Gamma\Gamma)$	p	η	$F(\Gamma\Gamma, \Gamma\Gamma)$
$F(V\Gamma, V\Gamma)$	p	η	$F(V\Gamma, V\Gamma)$

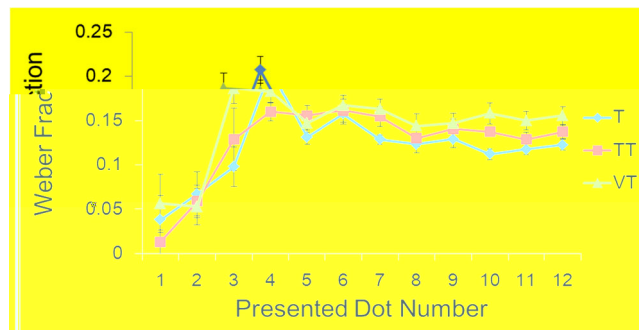


Fig. 7

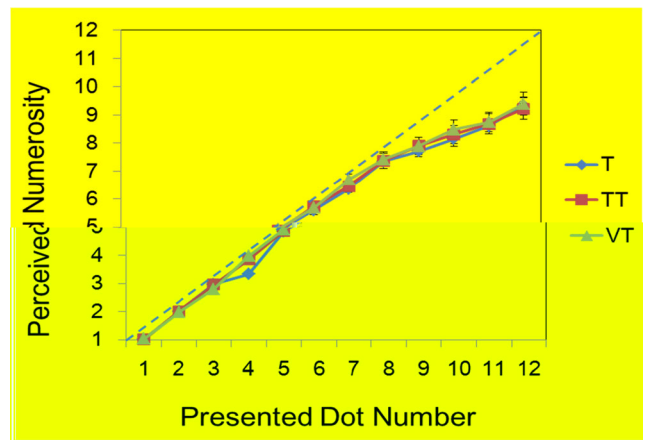


Fig. 8

Γ	$\Gamma\Gamma$	$V\Gamma$	Γ
$t(\Gamma, \Gamma\Gamma)$	p	η	$t(\Gamma, \Gamma)$
$t(\Gamma, V\Gamma)$	p	η	$t(\Gamma, \Gamma)$
$t(\Gamma\Gamma, \Gamma)$	p	η	$t(\Gamma\Gamma, \Gamma\Gamma)$
$t(\Gamma\Gamma, V\Gamma)$	p	η	$t(\Gamma\Gamma, \Gamma\Gamma)$
$t(V\Gamma, \Gamma)$	p	η	$t(V\Gamma, V\Gamma)$
$t(V\Gamma, \Gamma\Gamma)$	p	η	$t(V\Gamma, V\Gamma)$
$t(\Gamma, \Gamma)$	p	η	$t(\Gamma, \Gamma)$
$t(\Gamma\Gamma, \Gamma\Gamma)$	p	η	$t(\Gamma\Gamma, \Gamma\Gamma)$
$t(V\Gamma, V\Gamma)$	p	η	$t(V\Gamma, V\Gamma)$

Discussion

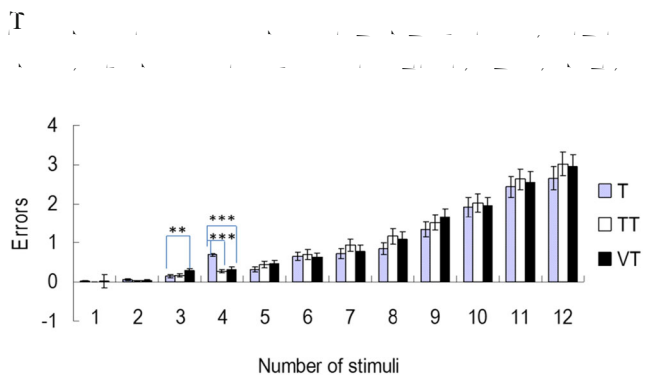


Fig. 9

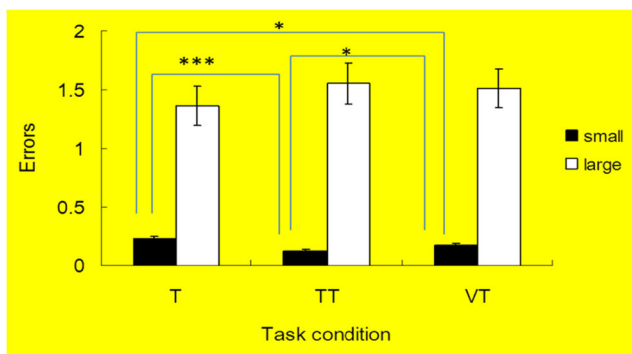


Fig. 10

p *p* *p*

subitizing

numerosity estimation

V^T TT T

V^T TT T

T

T $($ $)$

$\&$ T $($ $)$ $\&$

$($ $)$ $\&$ $($ $)$ $\&$

$\&$ $($ $)$ $\&$ $($ $)$

$\&$ $($ $)$ $\&$ $($ $)$

TT $($ $)$

T $($ $)$ $\&$

TT

$($ V^T $)$

V $($ $)$

T

T

$\&$ $\&$ $($ $)$

T $\&$

$(TT - V^T$ $)$

$'$ $($ $)$

Table 3

	$V^T - T$	$V^T - TT$	$TT - T$	$TT - TT$	$V^T - TT$	$V^T - TT$
<i>r</i>	--	--	--	--	--	--
<i>r</i>	--	--	--	--	--	--

Note. *r* ... *p*

Acknowledgements

The authors would like to thank the following individuals for their assistance in the data collection: [illegible names]

Appendix

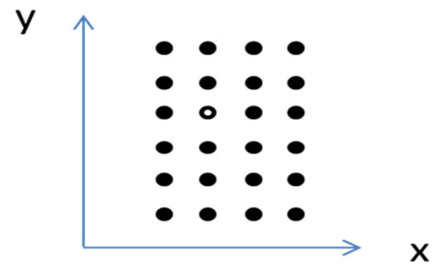


Fig. 11 [illegible text]

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... & ... (... *Journal of General Psychology*, 142(...)

... & ... (... *Perception & Psychophysics*, 65(...)

... (... *Journal of Experimental Psychology: Human Perception and Performance*, 21(...)

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... & ... (... *Perception & Psychophysics*, 65(...)

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... & ... (... *Communications of the ACM*, 46(...)

... & ... (... *Spatial Vision*, 10(...)

... (... *Trends in Cognitive Science*, 14(...)

... & ... (... *Cognition*, 121(...)

... & ... (... *Nature Reviews Neuroscience*, 3(...)

... & ... (... *Journal of the Acoustical Society of America*, 82(...)

... & ... (... *Brain and Cognition*, 82(...)

... & ... (... *Experimental Brain Research*, 234(...)

... & ... (... *Nature*, 415(...)

... & ... (... *Perception & Psychophysics*, 63(...)

... & ... (... *Journal of Experimental Psychology: General*, 130(...)

... & ... (... *Journal of Neuroscience*, 34(...)

... & ... (... *Perception & Psychophysics*, 65(...)

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