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Abstract

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1. Introduction

2. Methods

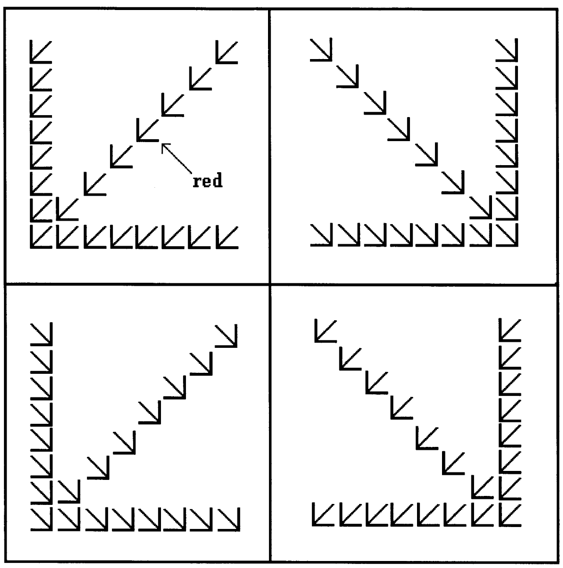
2.1. Subjects

2.2. Stimuli

C ... 60 ... F . 1. E ... 8 × 8 ... 4.1 × 4.8 ... 0.38 × 0.48 ... 0.02 ... E ... 0.68 ... (CIE ... 0.237/0.285) ... 0.66 ... (CIE ... 0.228/0.219) ...

2.3. Procedure

... 0.2 × 0.2 ... 400 ... 600 ... 1000 ...



F . 1. I ... H ...

. I
. A 40 800 10
,
400
400 -
.
.

2.4. ERP recording and analysis

EEG I 10/20 F 1, F 2, F3, F4, F7, F8, 3, 4, C3, C4, 5, 6, 3, 4, 1, 2, F , C , , 10 10/20 . FC1/2 C F3/4, C 1/2 C3/4. A 1 1 3 5, 2 ; (I 3)

1
E

	w w ( )	M w w ( )	M
1	80 140	90 130	5, 6, 3, 4, 1, 2, 1, 2, I 3, I 4
1	130 210	150 200	5, 6, 3, 4, 1, 2, 1, 2, I 3, I 4
2	160 220	170 210	F3, F4, FC1, FC2, C3, C4
F / 2	220 360	240 340	F3, F4, FC1, FC2, C3, C4
/ 2			5, 6, 3, 4, 1, 2, 1, 2, I 3, I 4
H	200 350	250 320	
-	200 350	230 300	
3			C3, C4, 3, 4, 5, 6, 1, 2
Homogeneous stimuli			
G	300 700	310 430	
L	300 700	380 500	
Pop-out stimuli			
G	300 700	310 430	
L	300 700	370 490	

2
( ) (%)

	G		L	
	C	I	C	I
Homogeneous stimuli (n = 14)				
	377	379	425	459
E	6.5	6.3	8.9	16.8
Pop-out stimuli (n = 20)				
	375	384	440	465
E	1.2	1.8	1.5	2.6

3. Results

3.1. Behavioral performance

2. $F(1,32) = 123.7$, $P < 0.0005$. I

$F(1,32) = 140.9$, $P <$ 0.0005,

$F(1,32) = 32.0$, $P < 0.0005$.

$F < 1$. H , G × C ×

$F(1,32) = 3.93$, $P < 0.05$,

- .

, ,

$F(1,13) = 70.4$, $P < 0.0005$

$F(1,13) = 1.25$, $P > 0.2$. F - , ,

$F(1,19) = 5.73$, $P < 0.0005$,

($F(1,19) = 3.72$, $P < 0.002$, .

E (6.5%) (3.5%)

$F(1,32) = 141.0$, $P < 0.0005$,

$F(1,32) = 35.2$, $P < 0.0005$.

- $F(1,32) = 126.7$, $P < 0.0005$. G ×

C $F(1,32) = 12.3$, $P < 0.002$, -

× G $F(1,32) = 13.6$, $P < 0.001$,

-

G × C ×

$F(1,32) = 8.96$, $P < 0.005$. A A

, ,

$F(1,13) = 20.4$, $P < 0.0005$. F - , ,

$F < 1$.

3.2. Electrophysiological data

E , ,

, , .

E F 2 3. F

, E 1 80 140

1 130 200 2 200

350 A / E 2

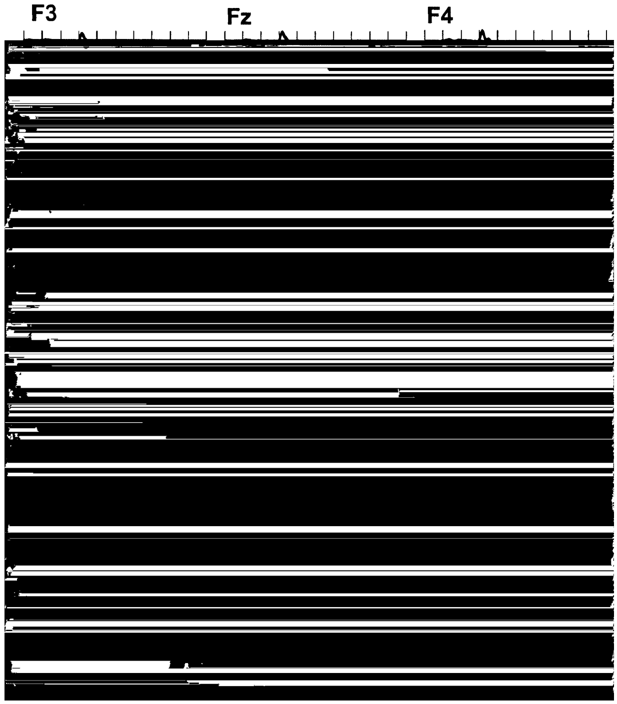
160 260 2 220 360. A 3

300 700 .

3.2.1. P1 and N1

G , ,

5 6: $F(1,32) = 15.40$, $P < 0.0005$; 1 2: $F(1,32) = 15.28$, $P <$



F . 2. G E . GC, ; GI, , LC, , LI, .

0.0005; I 3 I 4: $F(1,32) = 19.25$, $P < 0.0005$; 3 4 ($F(1,32) = 10.56$, $P < 0.003$. 1 w [1]. C y, $P > 0.05$. A A w y 1

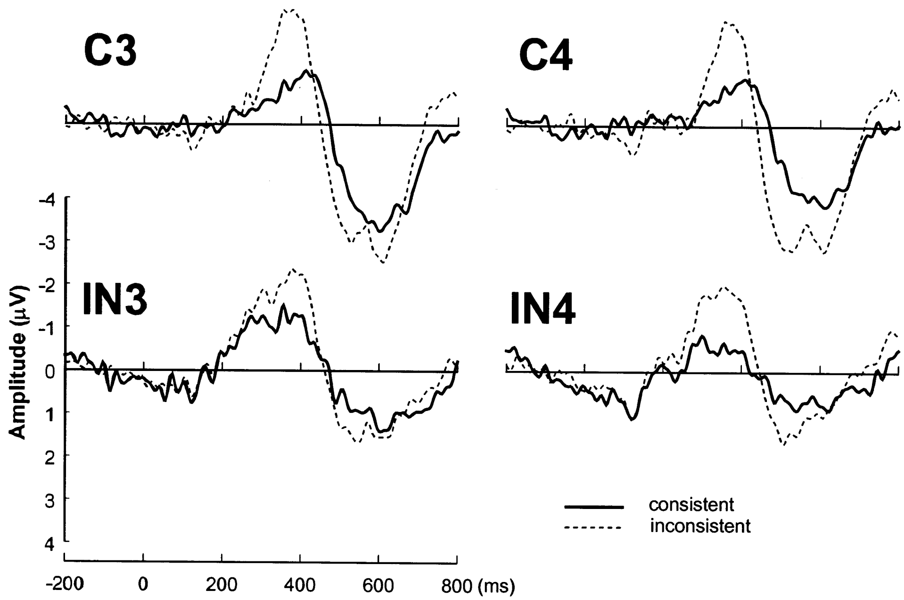
3.2.2. Frontal/central N2

/ 2 w F3 F4: $F(1,32) = 18.16$, $P < 0.001$; FC1 FC2: $F(1,32) = 32.13$, $P < 0.001$; C3 C4: $F(1,32) = 36.68$, $P < 0.001$. I , w × G y (F3 F4: $F(1,32) = 8.13$, $P < 0.007$; FC1 FC2: $F(1,32) = 8.66$, $P < 0.006$; C3 C4: $F(1,32) = 8.77$, $P < 0.006$, / 2 w - . y w /

[1] y 1 y / w ($P < 0.03$) - ($P > 0.1$), w H w , w y w , 1 w w w

2 w
$P > 0.1$, w
- F3 F4: $F(1,19) = 27.92$, $P < 0.001$; FC1 FC2: $F(1,19) = 43.76$, $P < 0.001$; C3 C4: $F(1,19) = 41.12$, $P < 0.001$. y w
(2
)
G y × C y F3 F4: $F(1,32) = 8.43$, $P < 0.007$; FC1 FC2: $F(1,32) = 10.75$, $P < 0.003$; C3 C4: $F(1,32) = 9.96$, $P < 0.004$. y w
2 F3 F4: $F(1,32) = 8.15$, $P < 0.007$; FC1 FC2: $F(1,32) = 4.58$, $P < 0.04$; C3 C4: $F(1,32) = 7.69$, $P < 0.009$.
w
G y × C y FC1 FC2: $F(1,32) = 4.19$, $P < 0.05$; C3 C4: $F(1,32) = 4.70$, $P < 0.05$. 2 w
- ,
× G y F3 F4: $F(1,32) = 6.06$, $P < 0.02$. -
× G y × C y w F3 F4
$F(1,32) = 7.24$, $P < 0.01$, w
- .

F . 3. G E - . GC,
; GI, , LC, , LI, .



F . 4. D w ý E E
w w ý.

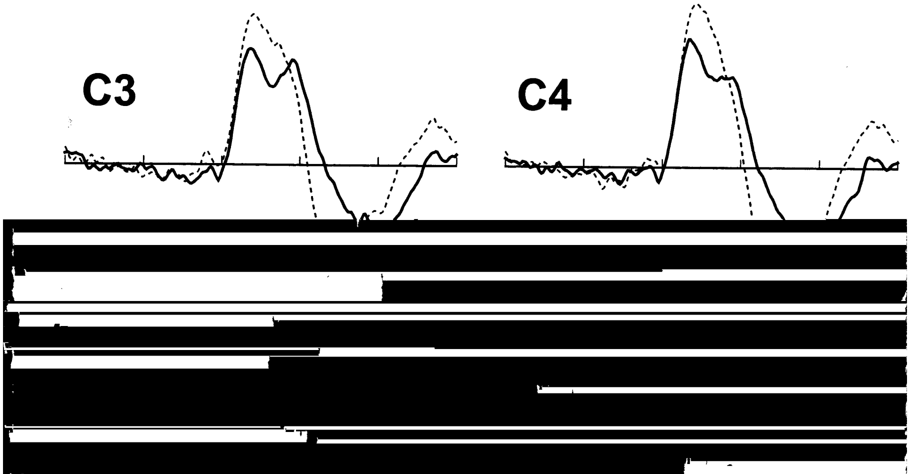
3.2.3. Temporal/occipital N2

/ 2 w 5 6: $F(1,32) = 17.05$, $P < 0.001$; 1 2: $F(1,32) = 7.43$, $P < 0.01$; I 3 I 4: $F(1,32) = 5.08$, $P < 0.03$. / 2 w 5 6: $F(1,32) = 12.63$, $P < 0.002$; 1 2: $F(1,32) = 4.64$, $P < 0.04$. ý w / 2 5 6: $F(1,32) = 26.63$, $P < 0.001$; 1 2: $F(1,32) = 28.45$, $P < 0.001$; 1 2: $F(1,32) = 31.46$, $P < 0.001$; I 3 I 4: $F(1,32) = 48.89$, $P < 0.001$. - w G ý × C ý 5 6: $F(1,32) = 4.94$, $P < 0.03$; 1 2: $F(1,32) = 5.07$, $P < 0.03$. I ý, w × G ý I 3 I 4 $F(1,32) = 4.39$, $P < 0.04$; , / 2 w - w . / 2 w - 5 6: $F(1,32) = 11.64$, $P < 0.002$; I 3 I 4: $F(1,32) = 6.42$, $P < 0.02$. / 2 / 2 ý - , w w ý E

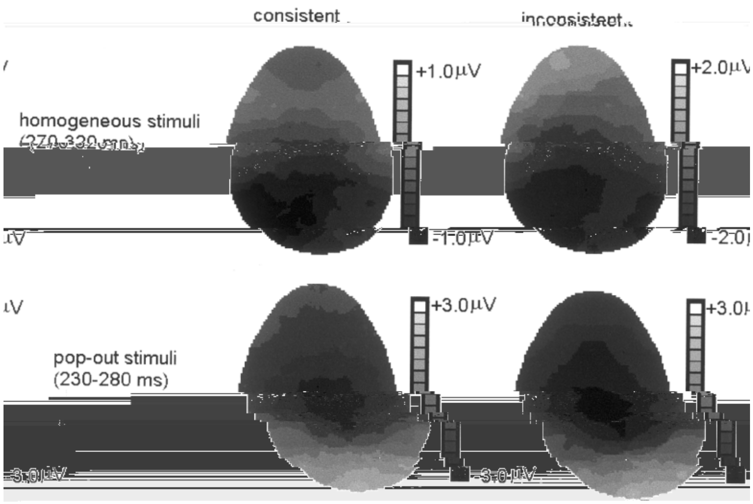
E (F 4 5). F . 6
y 2 w w. ,
, w 2 w w
/ (y ,
). F - , w ,
w 2 w w w /
.

3.2.4. P2 and P3

2 w
F3 F4: $F(1,32) = 8.02$, $P < 0.008$; FC1 FC2: $F(1,32) = 4.57$, $P < 0.04$. A A 3 w
3. 3 w
w
G y × C y. 3 w
w w y y w w
. G y × C y w -
, 3 w
w
w .



F . 5. D w y E E
- w
w w y.



F . 6. [illegible]

4. Discussion

[illegible]

3

[illegible]

	G	C	G × C
P3 amplitudes			
C3 C4	0.002	[illegible]	0.003
3 4	0.001	[illegible]	0.003
5 6	0.001	[illegible]	0.017
1 2	0.001	[illegible]	0.002
P3 latencies			
C3 C4	0.001	0.001	0.001
3 4	0.001	0.002	0.001
5 6	0.001	0.001	0.001
1 2	0.001	0.001	0.001

G, G [illegible]; C, C [illegible]; G × C, G [illegible] × C [illegible].

E ... F ... (B ... ., 1990; H ... ., 1990; L ... , 1993, 1996 ... H ... , 1997). I ... (... , 1987; I ... , 1999). I ... G ... 2 ... 2 ... (...) ... 2 ... 1 ... 1 ... 2 ...

I ... 2 ...

Acknowledgements

F ... C ... I ... M ... H ... (MH-41544), I ... D ... (-32893), A ... A. ... M ...

[2] (H ... H , 2001) ...

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M[illegible]C[illegible]y, G., D[illegible], E., 1981. A [illegible]: [illegible] 300 [illegible]y [illegible]. [illegible] 211, 77 80.