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1** 2

Pessiglione et al. 2007 Xue Zhou & Li 2015 Seitz Kim & Watanabe 2009

Pessoa & Englemann 2010

Anderson 2013 2016 Chelazzi et al. 2013

Pavlov 1927 Rescorla & Wagner 1972

Mackintosh 1975 —

reward-drivQ

2.1 vs.

Anderson 2011

1

80%

20%

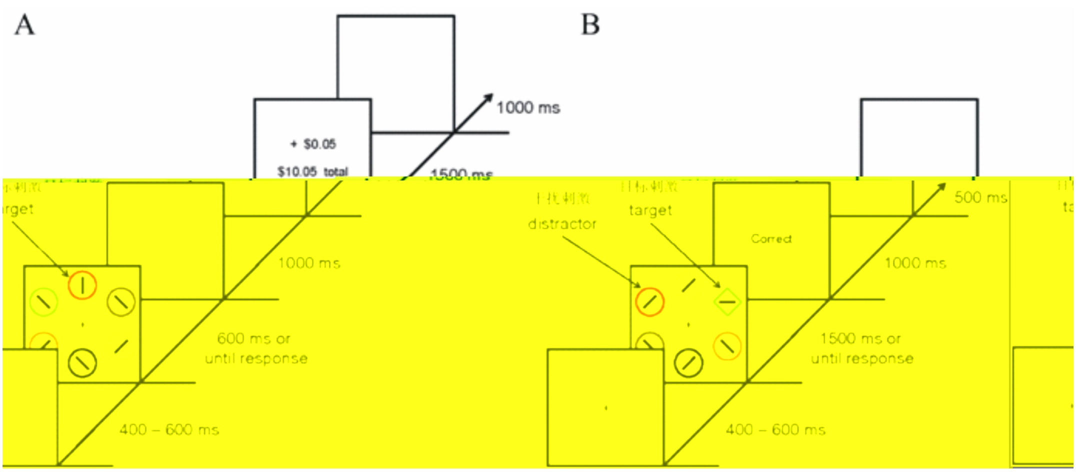
feature singleton search

Le Pelley 2015 Failing & Theeuwes 2015 Laurent et al. 2012 Anderson 2016 Anderson et al 2011 Hickey et al. 2015

Anderson & Yantis 2013

Gong & Li 2014 Lee & Shomstein 2014 Hickey et al. 2015

Chelazzi et al. 2014



A B Anderson Laurent & Yantis 2011

Della Libera & Chelazzi 2009 Hickey et al. 2010 Anderson et al. 2011

attentional blink

Raymond & O 'Brien 2009

O 'Brien & Raymond 2012

Gazzaley & Nobre 2012

Bunzeck et al. 2009

Gong 2014 Anderson 2011

change detection paradigm

/

Thomas 2016

Infanti et al. 2015

Murayama & Kitagami 2014

N2pc Kiss et al. 2009 Qi et al. 2013

P1 Hickey et al. 2010

Bisley & Goldberg 2010 Peck et al. 2009

fMRI Hickey & Peelen 2015 Gong et al. 2017

Schultz 2002

Anderson et al. 2017

Anderson et al. 2016

Frank Loughry & O 'Reilly 2001 Botvinick & Cohen 2014 Hickey & Peelen 2015

van Schouwenburg Aarts & Cools 2010 Serences 2010

2.2 =

Hickey &
van Zoest 2012

N2pc

Pd Qi et
al. 2013

Sawaki & Luck 2010 Geng 2014 Gaspelin
& Luck 2017

Gong
2016 memory-
guided visual search
2

P2 P3
theta
Cavanagh et al. 2013

template for rejection
Woodman & Luck 2007 Cunningham
& Egeth 2016

Gong 2017 fMRI
3
V1

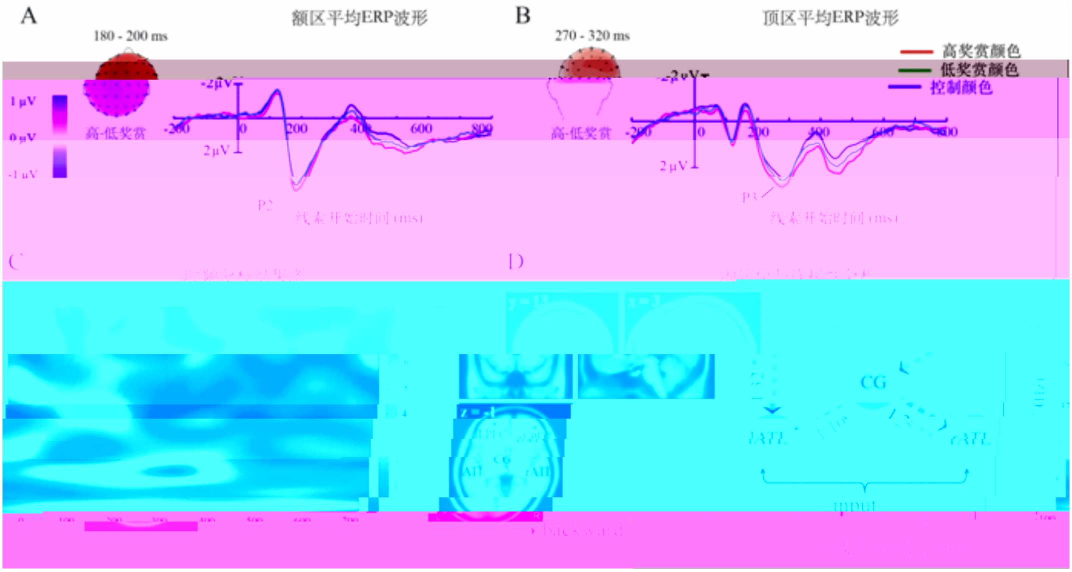
Houghton & Tipper 1994

V1

object-selective visual
cortex LOC Hick-
ey et al. 2015

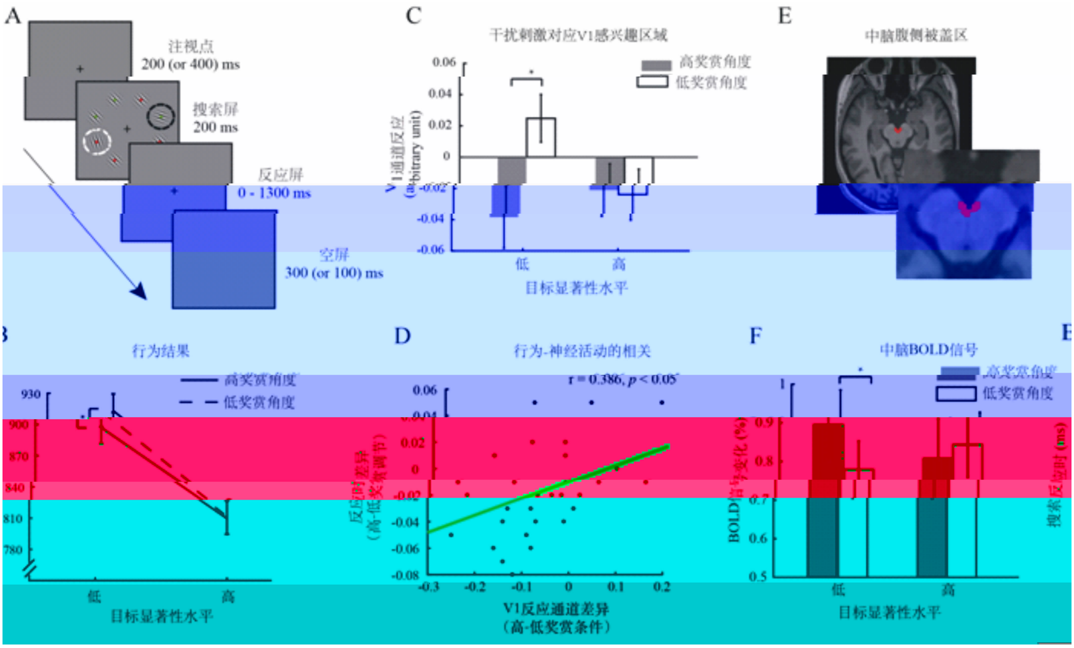
Hickey et
al. 2010 Anderon et al. 2011 Falling et
al. 2015 Le Pelley et al. 2015
Lee & Shomstein 2014

Hickey & van Zoest 2012 Qi et al.
2013
flexibility



A P2 B P3 C the-

ta D Gong Yang & Li 2016



A B C

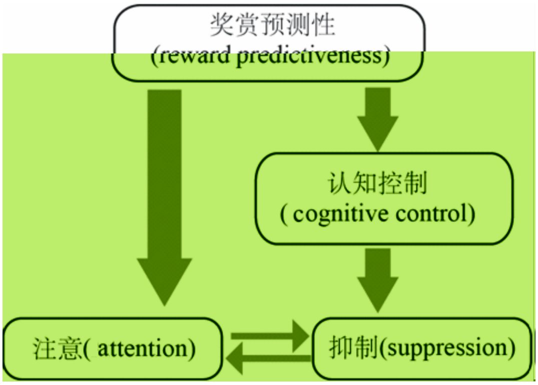
D E

F Gong Jia & Li 2017

Awh et al. 2012

cognitive control

4



3.1

Awh et al. 2012

Chelazzi

2014

“winner-take-all ”

lateral intraparietal cortex LIP

Bisley & Goldberg 2010

frontal eye field FEF Serences & Yantis

2007 Ptak 2012 superior colliculus

Krauzlis et al 2013

—

Peck et al.

2009

Lee & Shomstein 2014 Gong

et al. 2014

Anderson & Yantis 2013

Weil et al. 2010

Serences 2008 Hickey et al. 2015 Gong et

al. 2017

3.2

invested effort

—

Bijleveld et al. 2010

Bijleveld et al. 2014

Zedelius et al.

2014

Seitz

2009

Xue

2015

/

3.5

(Bunzeck & Düzel, 2006; Wittmann et al., 2007; Guitart-Masip et al., 2010)

attention deficit/hyperactivity disorder, ADHD

drug addition

depression

Li

2017

autism

—

Foley et al., 2014

3.4

selection for action

Sali

2017

force

reach and grasp

Go/No Go

response withhold

ADHD

selection for vision

pinch force task

Anderson, 2017

6

30

Abe et al., 2011

Murayama & Kitagami, 2015

Moher

2015

Abe, M., Schambra, H., Wassermann, E. M., Luckenbaugh, D., Schweighofer, N., & Cohen, L. G. (2011). Reward improves long-term retention of a motor memory through induction of offline memory gains. 7, 557–562.

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[1] [2] [3,4,5,6]

1. Department of Psychology Michigan State University Michigan 48824 U. S.
2. Department of Psychology University of Cambridge Cambridge CB2 3EB UK
3. School of Psychological and Cognitive Sciences 4. PKU-IDG/McGovern Institute for Brain Research
5. Beijing Key Laboratory of Behavior and Mental Health
6. Key Laboratory of Machine Perception Ministry of Education Peking University Beijing 100871 China

Learned reward predictiveness alters stimulus salience and modifies visual selective attention towards the reward-associated item. The investigation of the neural mechanism underlying reward-driven modulation on attentional processing promotes the understanding of human adaptive behaviors. Recent studies showed enhanced neural representation of the reward-associated stimulus in terms of its location and feature. Moreover reward can strengthen suppression over its associated distractor by decreasing attentional allocation and weakening the sensory representation in early visual cortex. These findings suggest a key role of reward signals in modulating cognitive control for behavioral optimization.

reward predictiveness visual attention and suppression cognitive control primary visual cortex