Personality and Individual Differences 119 (2017) 181–184

Contents lists available at ScienceDirect

Personality and Individual Differences

journal homepage: www.elsevier.com/locate/paid

Short Communication

Sex difference in awareness of threat: A meta-analysis of sex differences in attentional orienting in the dot probe task

Anne Campbell [a], Steven Muncer [b,*]

[a] Psychology Department, University of Durham, Durham, United Kingdom
[b] Clinical Psychology, School of Health and Social Care, Teesside University, Middlesbrough TS1 3BA, United Kingdom

A R T I C L E I N F O

Article history:
Received 1 June 2017
Received in revised form 11 July 2017
Accepted 14 July 2017
Available online 23 July 2017

Keywords:
Fear
Sex differences
Attention
Dot-probe

A B S T R A C T

It has been argued that females are more important to infant survival than males and that his may lead to their increased fear. One way of increasing female survival chances would be to increase their sensitivity to threat. The dot-probe task has been used to investigate attentional bias. In this meta-analysis we combine the results of dot-probe experiments and explicitly examine sex differences in attentional orienting bias. Overall there is little evidence to support the existence of sex differences and these results are considered in terms of evolutionary impact.

© 2017 Elsevier Ltd. All rights reserved.

It has been proposed that greater fear in women has been sexually selected based on their critical role in ensuring infants' survival (Campbell, 1999, 2013). This is in counterpoint to the argument that men are more willing to engage in risky behaviour as it improves male reproductive success (Daly & Wilson, 1988). Sear and Mace (2008) demonstrated the importance of a mother to the chances of infant survival in a review of 28 societies lacking access to contraception and western medical care. Whereas in every case the survival of the mother increased the child's chance of survival, they found that in 68% of cases the survival of the father had no impact. As the survival of the mother is so important, women who had better ability to detect and respond to danger, and also to avoid risk themselves would be more likely to survive and produce more surviving children. Therefore, fear may have evolutionary advantages for women.

The evidence for sex differences in fear are shown in: spontaneous involvement in risky activities (Byrnes, Miller, & Schafer, 1999), self-reported fear (Brebner, 2003), decision making under risk (Nelson, 2015), and fear conditioning (Sheynin et al., 2014). There are a number of mechanisms that could produce this sex difference in fear. For example, it is possible that women are sensitive to the presence of threatening stimuli than men or it could be that the strength of reaction in the fear system (amygdala, hypothalamus, ventromedial and orbitofrontal cortices) is higher in women, or it could be that women have a greater subjective awareness of fear. For the first proposition, the sensitivity of the fear system could be enhanced by reducing its firing threshold for attention to threat and this has been examined experimentally by using tasks which capitalize on the 'pop out' effect of feared over neutral stimuli. In the present meta-analysis we start to investigate the possibility that there are sex differences in awareness of threat by looking at studies that measure attentional bias to threat.

For good evolutionary reasons, fear-inducing stimuli preferentially capture attention (Bar-Haim, Lamy, Pergamin, Bakermans-Kranenburg, & van IJzendoorn, 2007; Yiend, 2010). Several measures of attentional bias have been developed (see Van Bockstaele et al., 2014) and one of the most widely used is the dot probe task. Two stimuli (one of which is threatening) appear simultaneously at different locations on a monitor (e.g. right and left). After a short exposure time both stimuli disappear, a probe appears at one of the two locations and participants are asked to indicate as quickly as possible its spatial location. A bias toward threat is inferred when the reaction time on congruent trials (the probe appears at the same location as the threatening stimulus) is faster than incongruent trails (the probe appears at the location of the neutral stimulus). Typically, the bias index is computed by subtracting congruent trails from incongruent trials such that a positive value indicates bias toward threat (attentional vigilance) and a negative value a bias away from threat (attentional avoidance). It has been suggested that individuals may show avoidance of mild threats but vigilance to more dangerous threats (Mogg & Bradley, 1998). In a meta-analysis (Bar-Haim et al., 2007), stimuli used in laboratory studies did not produce a bias in non-clinical and low-vulnerability samples ($d = -0.01$) but a moderate vigilance bias was found in anxious samples ($d = 0.45$). Sex differences were not examined but given that women are more prone to anxiety than men, the dot probe technique might be expected to reveal greater

* Corresponding author at: Clinical Psychology, University of Teesside, Middlesbrough, TS1 3BA, United Kingdom.
E-mail address: S.Muncer@tees.ac.uk (S. Muncer).

http://dx.doi.org/10.1016/j.paid.2017.07.014
0191-8869/© 2017 Elsevier Ltd. All rights reserved.

Table 1
Meta-analysis of sex differences in dot probe task.

Study	Stimulus	Condition reported	Male N	Male mean (SD)	Female N	Female mean (SD)	Total N	g
Facial stimuli								
Tian and Smith (2011)	Unpleasant faces	After moderate exercise	17	−2.00 (8.00)	17	−12.00 (8.00)	34	1.22
Schofield, Johnson, Inhoff, and Coles (2012)	Angry faces		16	−8.09 (49.84)	23	−2.17 (45.80)	39	−0.12
Schofield et al. (2012)	Fearful faces		16	10.58 (45.69)	23	0.07 (62.27)	39	0.18
Carlson and Mujica-Parodi (2015)	Fearful faces	Supraliminal presentation	25	10.58 (9,73)	30	13.78 (14.45)	55	−0.25
Carlson and Mujica-Parodi (2015)	Fearful faces	Subliminal (masked) presentation	25	10.77 (10.45)	30	6.61 (16.56)	55	0.29
Carlson, Mujica-Parodi, Harmon-Jones, and Hajcak (2012)	Fearful faces (masked)		29	4.39 (19.40)	21	4.48 (15.99)	50	0.00
Carlson, Cha, and Mujica-Parodi (2013)	Fearful faces (masked)		6	9.72 (10.63)	9	10.71 (14.97)	15	−0.07
Threat stimuli								
Bardeen and Orcutt (2011)	General threat pictures.	150 ms stimulus onset asynchrony	41	*	56	*	97	−0.02
Bardeen and Orcutt (2011)	General threat pictures	500 ms stimulus onset asynchrony	41	*	56	*	97	0.22
Vogt, De Houwer, Crombez, and Van Damme (2013)	Threatening pictures	Experiment 1	3	−7.09 (87.63)	6	8.56 (39.88)	9	−0.24
Dittmar, Krehl, and Lautenbacher (2011)	Social threat words		13	0.01 (0.03)	14	0.00 (0.03)	27	0.32
Illness/pain stimuli								
Jasper and Whitthoft (2011)	Health-threat pictures.	175 ms exposure duration	23	−2.43 (21.29)	60	1.33 (21.64)	83	−0.17
Jasper and Whitthoft (2011)	Health-threat pictures	500 ms exposure duration	23	−3.12 (15.20)	60	−4.15 (22.81)	83	0.05
Yang, Jackson, and Chen (2013)	Health catastrophe words	High Fear of pain group.	3	50.09 (53.86)	10	−6.06 (45.35)	13	1.11
Van Ryckeghem, Crombez, Van Hulle, and Van Damme (2012)	Pain words		11	−5.32 (23.24)	42	2.26 (17.80)	53	−0.39
Dittmar et al. (2011)	Pain related words		13	−0.01 (0.02)	14	0.01 (0.03)	27	−0.75
McDermott et al. (2013)	Headache related pictures		72	−3.56 (21.59)	152	−1.69 (42.82)	224	−0.05
Spider stimuli								
Van Bockstaele et al. (2011a)	Spider pictures		11	8.50 (42.01)	42	−8.33 (47.47)	53	0.36
Van Bockstaele et al. (2011b)	Spider pictures	Pre-training data from controls	13	−9.57 (17.58)	52	−7.24 (28.05)	65	−0.09
Participant stress manipulated								
Vogt et al. (2013)	Cue signalling threat (aversive noise)	Experiment 3	5	5.95 (21.26)	22	20.83 (34.60)	27	−0.44
Lee, Sakaki, Cheng, Velasco, and Mather (2014)	Faces (salient) vs. places (non-salient)	High arousal (tone predicts shock)	14	20.34 (19.23)	38	13.95 (16.32)	52	0.37
Lee et al. (2014)	Faces vs. places	Low arousal (tone predicts no shock)	14	12.50 (20.26)	38	4.99 (20.32)	52	0.36
All studies							1260	0.05

* The g value was estimated from reported correlations.

Download English Version:

https://daneshyari.com/en/article/5035697

Download Persian Version:

https://daneshyari.com/article/5035697

Daneshyari.com