Dishabituation processes in height fear and dental fear: an indirect test of the non-associative model of fear acquisition

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Accepted 26 April 1999

Abstract

The fear dishabituation hypothesis described in the non-associative model of fear acquisition was tested in a longitudinal birth cohort study. Results were consistent with height fear and phobia dishabituation. That is, ‘re-emergence’ of a fear of heights occurred between age 11 and 18 years among individuals who reported higher levels of non-specific stress at age 15. Interestingly, there was no evidence for dental fear dishabituation — a finding consistent with the non-associative model of fear acquisition. Strengths and weaknesses of the study were considered and the results discussed in relation to laboratory-based findings on (dis)habituation.

1. Introduction

The non-associative model of fear acquisition maintains that certain cues (e.g. heights, separation) signaled a threat to human survival in pre-technical times. These cues are said to be pre-potent and can manifest at a young age in the absence of aversive conditioning experience (Rachman, 1978; Gray, 1982; Marks & Nesse, 1994; Menzies & Clarke, 1995a). It
has been hypothesised that over time most individuals will grow out of these developmental fears via habituation processes providing they have sufficient safe exposure to the relevant stimuli. However, this does not occur in all cases. Specifically, poor habituators and those who do not have the opportunity for safe exposure are expected to retain their fear which, if persistent, may result in specific phobias in adulthood (Clarke & Jackson, 1983). Additionally, it was hypothesised that non-specific stress may lead to the return of previously habituated fear (Menzies & Clarke, 1995a; also see Jacobs & Nadel, 1985). These three mechanisms have been proposed to explain why not all adults report specific phobias. However, no data exist to support the two habituation hypotheses proposed by Clarke and Jackson (Merckelbach & de Jong, 1997) and only anecdotal evidence is available to support the fear dishabituation hypothesis proposed by Menzies and Clarke (1995a) (e.g. Harris & Menzies, 1996; also see Rachman, 1990).

Thus, the present study sought to provide empirical evidence for fear dishabituation following non-specific stress among members of a long-running prospective study. The longitudinal sampling frame allowed us to select those individuals who reported an onset of height fear or phobia between age 11 and 18 years. That is, at age 11 they did not report height fear but did so seven years later at age 18. In this context fear dishabituation was assumed to occur between 11 and 18 years because of findings and theory suggesting the majority of our cohort were likely to have been afraid of heights in infancy following self produced locomotion (e.g. Gibson & Walk, 1960; Marks, 1987; Menzies & Clarke, 1993a; Nesse & Abelson, 1995). The non-specific stress experienced by the height fear group was compared to a group of individuals who did not report height fear at either age (the control group). Further, the non-associative model only predicts fear dishabituation following non-specific stress for evolutionary-relevant fears such as height. Thus, no relation between an evolutionary-neutral fear such as dental fear and non-specific stress was expected. To test this hypothesis we conducted the same analyses among study members who reported dental fear and phobia at age 18 only and compared their experience of non-specific stress to those without dental fear.

2. Method

2.1. Participants

The sample consisted of members of the Dunedin Multidisciplinary Health and Development Study, a longitudinal investigation of children born in Dunedin between 1 April 1972 and 31 March 1973 (see Silva & Stanton, 1996 for details). The sample has been assessed on a wide variety of psychological and medical measures at two year intervals from age 3 \(n = 1037\) to age 15 \(n = 976\), and subsequently at 18 \(n = 1008\), 21 \(n = 992\), and most recently at age 26. Of particular relevance to the present study are the data from assessments conducted at ages 11, 15, and 18.
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