



# The effect of shyness on eyewitness memory and the susceptibility to misinformation

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## Abstract

Witness shyness was investigated to determine its effect on eyewitness recall memory and susceptibility to the ‘misinformation effect’. Thirty-nine shy and 41 non-shy participants were exposed to a filmed mock crime. Recall accuracy was assessed via free recall and directed recall. Participants were subsequently asked to read a script containing misinformation. The direct recall questionnaire then was re-administered to assess witnesses’ susceptibility to the ‘misinformation effect’. Shy and non-shy witnesses produced comparable recall accuracy rates. Person details were recalled more accurately prior to misinformation by both groups. After the misinformation was introduced, both groups produced significantly higher recall accuracy rates for event details.

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## 1. Introduction

Shyness may have important consequences for eyewitness memory when one considers the neurological, neuroendocrinal, and physiological differences between shy and non-shy individuals (Crozier, 2001). Considering Hosch’s (1994) theory that personality traits with biological substrates are most likely to contribute to individual differences in eyewitness performance, shyness

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is a good candidate to consider. The present study examined witness shyness and its facilitating and debilitating effects on eyewitness memory and susceptibility to misinformation among adult witnesses.

### 1.1. Shyness

Buss (1986) defined shyness as anxious self-preoccupation and behavioral inhibition in social contexts due to the prospect of being negatively evaluated by others. Of particular interest is the consistent finding across studies that behavioral inhibition is associated with higher levels of physiological reactivity including increased heart rate and an elevated production of the stress hormone cortisol (Kagan, Reznick, & Snidman, 1987). Zimmerman and Stansbury (2004) argue that under critical circumstances, an elevation in cortisol levels is adaptive because it allows the body to respond to the perceived challenging situation by mobilizing the organism's energy resources in order to effectively manage the stressful situation. In an eyewitness context, this heightened arousal could prove to be beneficial given that it may compel shy witnesses to devote their energy to assess and evaluate the perceived threat (i.e., crime/perpetrator) that may then facilitate eyewitness memory.

The only available research that has tested this shyness hypothesis among adult witnesses is that of Pozzulo, Coplan, and Wilson (2005) with two experiments. In the first experiment, shy and non-shy participants watched a videotaped mock crime. Participants were then asked to recall perpetrator and crime environment details. Shy and non-shy witnesses did not differ significantly in terms of perpetrator details; however, shy witnesses recalled fewer crime details. Following Van Ameringen, Mancini, and Oakman's (1998) supposition that shy individuals are particularly sensitive to and threatened by novel persons entering their environment, Pozzulo and colleagues speculated that shy witnesses might have been so concerned about the "person" that they were unable to encode many environmental items. In the second experiment, arousal was manipulated to determine if it would interact with shyness to influence eyewitness memory. With induced arousal, non-shy witnesses were more accurate describing the perpetrator than shy witnesses. Shy witnesses may have experienced such an increase in arousal to render them less able to encode and accurately recall perpetrator details whereas for non-shy witnesses, the increase in arousal facilitated their recall.

Although this study illustrated the facilitating effects of shyness on eyewitness performance under *some* conditions (i.e., under low arousal conditions), it also illustrated some debilitating effects (i.e., under increased arousal). The Yerkes–Dodson rule (Yerkes & Dodson, 1908) dictates that performance increases with arousal but only to a certain point (i.e., when levels of arousal are too high, performance will decrease). Shy witnesses may already be at their 'optimal' level of arousal for eyewitness performance when performing at baseline and the introduction of externally induced arousal may have pushed shy witnesses beyond their optimal level. On the other hand, for non-shy witnesses, the additional external arousal may serve to enhance their performance, and make them more accurate witnesses.

Shy individuals also have been found to have a fear of negative evaluation (Clark & Arkowitz, 1975) that, in turn, may influence task performance (e.g., eyewitness recall). For instance, considering the strong correlation between anxiety and shyness (Cheek & Buss, 1981), high-anxious (HA) individuals have been found to worry when under "evaluative threat" (e.g., Morris & Lie-

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