Study 4

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Abstract

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Study 4

Study 4 - Online Replication 3

Study 3 found a significant relationship between cognitive load and response to the critical slide and a significant relationship between Need for Cognition and response to the critical slide. The aim of Study 4 was to replicate these findings. In addition Study 4 included a manipulation check to assess the effectiveness of the cognitive load manipulation employed.

Study 4: Method

Study 4: Participants and Design

Study 4 was a between subjects design. The dependent variable was response to the critical slide. The independent variable was cognitive load with two levels: present and absent. Need for Cognition (Cacioppo & Petty, 1982; Petty, Cacioppo, & Kao, 1984) was included as a potential correlate and moderator variable.

Following the elimination of 29 participants who scored less than 7 on the memory task we were left with a final sample of 127 participants (84 female, 43 male; $M_{\text{age}} = 41.19$, min = 21, max = 74, $SD = 13.91$). Participants in this sample were recruited through MTurk (under the same conditions as Studies 2 and 3).

Study 4: Procedure and Materials

Study 4 was the same as Study 3 with one change, the inclusion of a manipulation check. A prose paragraph was included after participants made their revised judgements. Participants were then asked three comprehension questions relating to the prose paragraph. It was expected that participants in the control group would perform better at this task than participants under cognitive load (Just & Carpenter, 1992).

Study 4: Results

Ninety eight participants (77.17%) rated the behavior of Julie and Mark as wrong initially, and ninety two participants (72.44%) rated the behavior as wrong at the end of the task. Initial ratings (M = 2.09, SD = 1.62) were significantly more severe than revised ratings (M = 2.31, SD = 1.79), $t(126)$ = -3.14, p = .002; d = 0.28. Inspection of the binned judgments revealed that thirteen participants changed the valence of their judgments, and all but two of these involved one judgment that was neutral (see Supplementary materials Table XX).

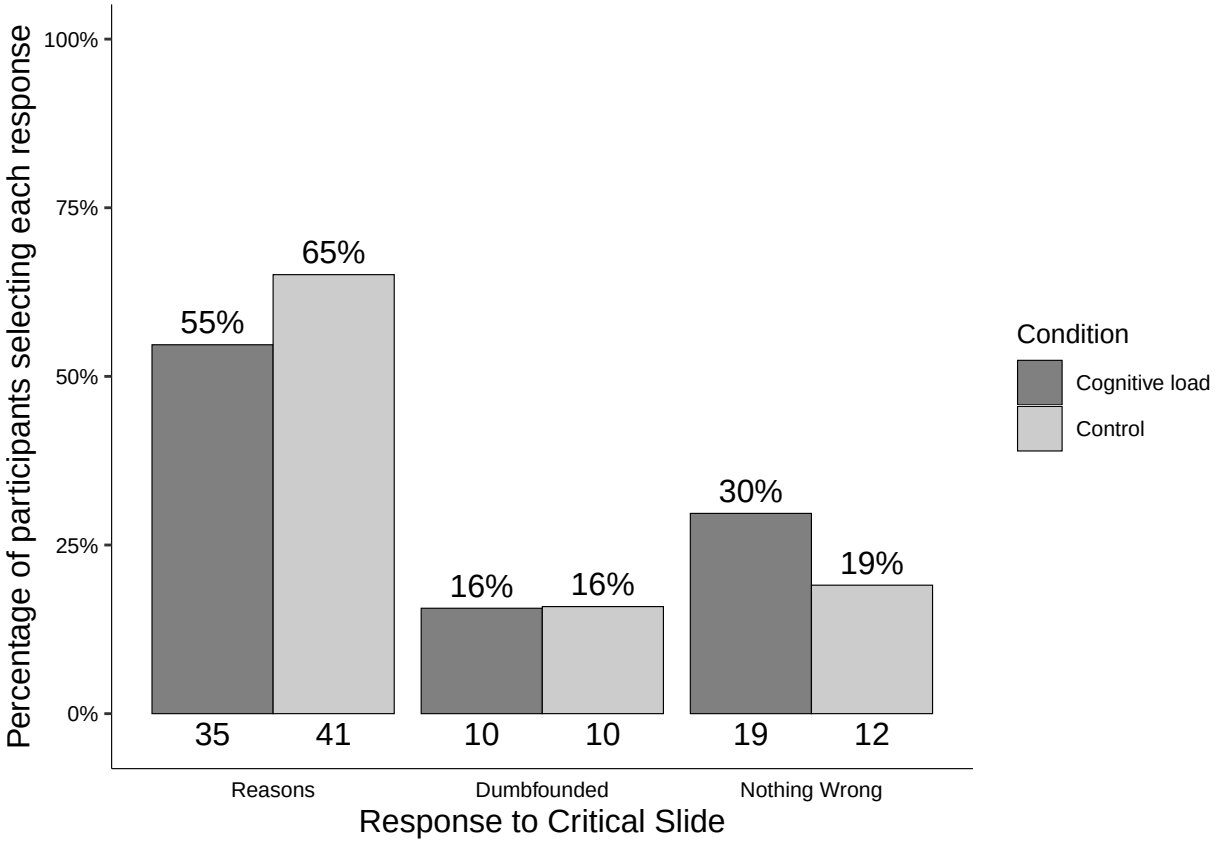

Figure 1

*Study 4: Responses to critical slide for the cognitive load group (*N *= 64) and the control group (*N *= 61)*

Investigation of the responses to the manipulation check questions revealed no

Table 1

Study 4 – Observed counts, expected counts, and standardised residuals for each response to the critical slide depending on cognitive load

		Cognitive Load	Control
Observed count	Reasons	35.00	41.00
	Dumbfounded	10.00	10.00
	Nothing Wrong	19.00	12.00
Expected count	Reasons	38.30	37.70
	Dumbfounded	10.08	9.92
	Nothing Wrong	15.62	15.38
Standardised residuals	Reasons	-1.19	1.19
	Dumbfounded	-0.04	0.04
	Nothing Wrong	1.40	-1.40

Note. * = sig. at $p < .05$; ** = sig. at $p < .001$

difference in the number of correct answers to these questions between the cognitive load group and the control group $t(123.91) = 0.57$, $p = .569$; $d = 0.10$. There was also no difference in time taken to read the vignette between the groups $t(63.40) = 1.62$, $p = .111$; $d = 0.28$.

On the critical slide, twenty participants (15.75%) selected "It's wrong but I can't think of a reason." Seventy six participants (59.84%) selected "It's wrong and I can provide a valid reason"; and thirty one participants (24.41%) selected "There is nothing wrong."

A chi-squared test for independence revealed no significant association between experimental condition and response to the critical slide, $\chi^2(2, N = 127) = 2.05$, $p = .359$, $V = 0.13$, the observed power was 0.23. The responses to the critical slide for the experimental group ($N = 64$) and the control group ($N = 63$) are displayed in Figure 1.

The observed counts, expected counts and standardised residuals are displayed in Table 1.

A multinomial logistic regression revealed no statistically significant association between Need for Cognition and response to the critical slide, $\chi^2(2, N = 127) = 1.5$, $p = .472$, the observed power was 0.18 (see Supplamentary Figure XX for relative probabilities of selecting each response depending on Need for Cognition).

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