

# Task pre-loading: Designing adaptive systems to counteract mental underload

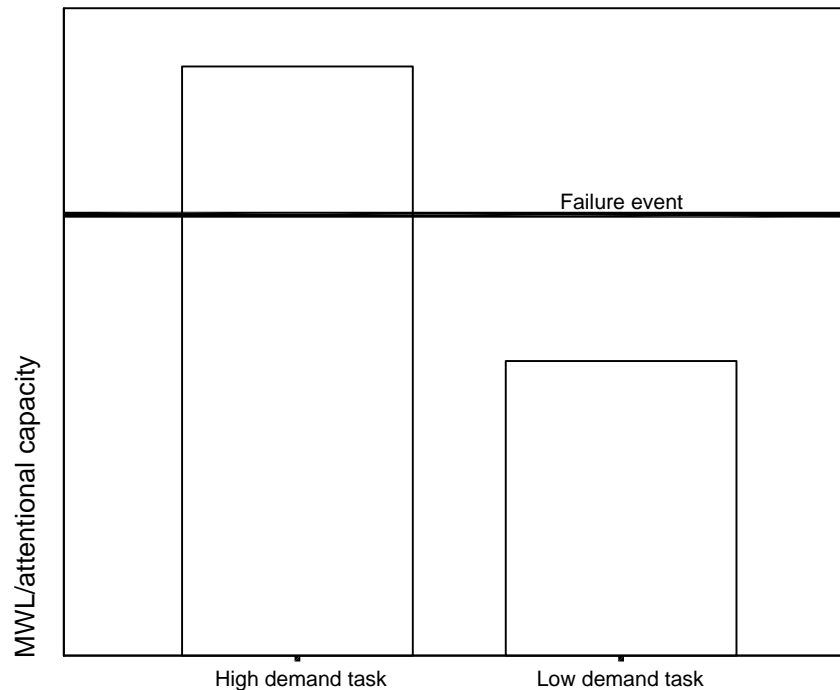
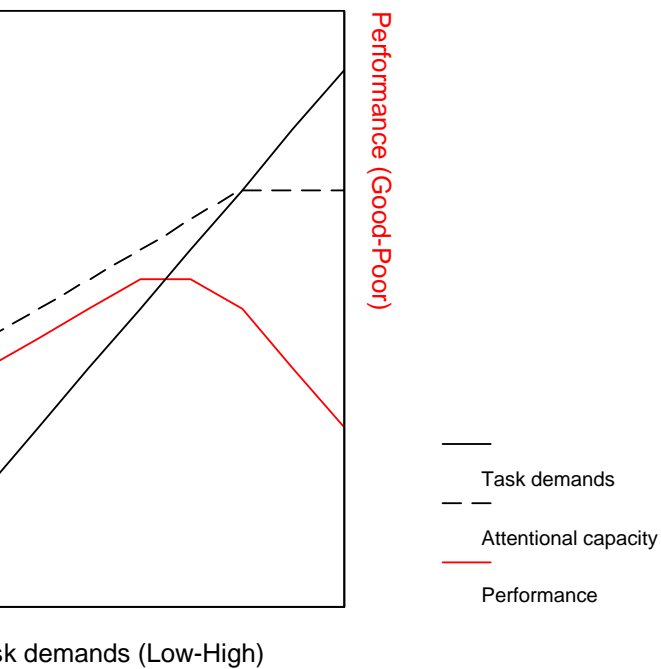
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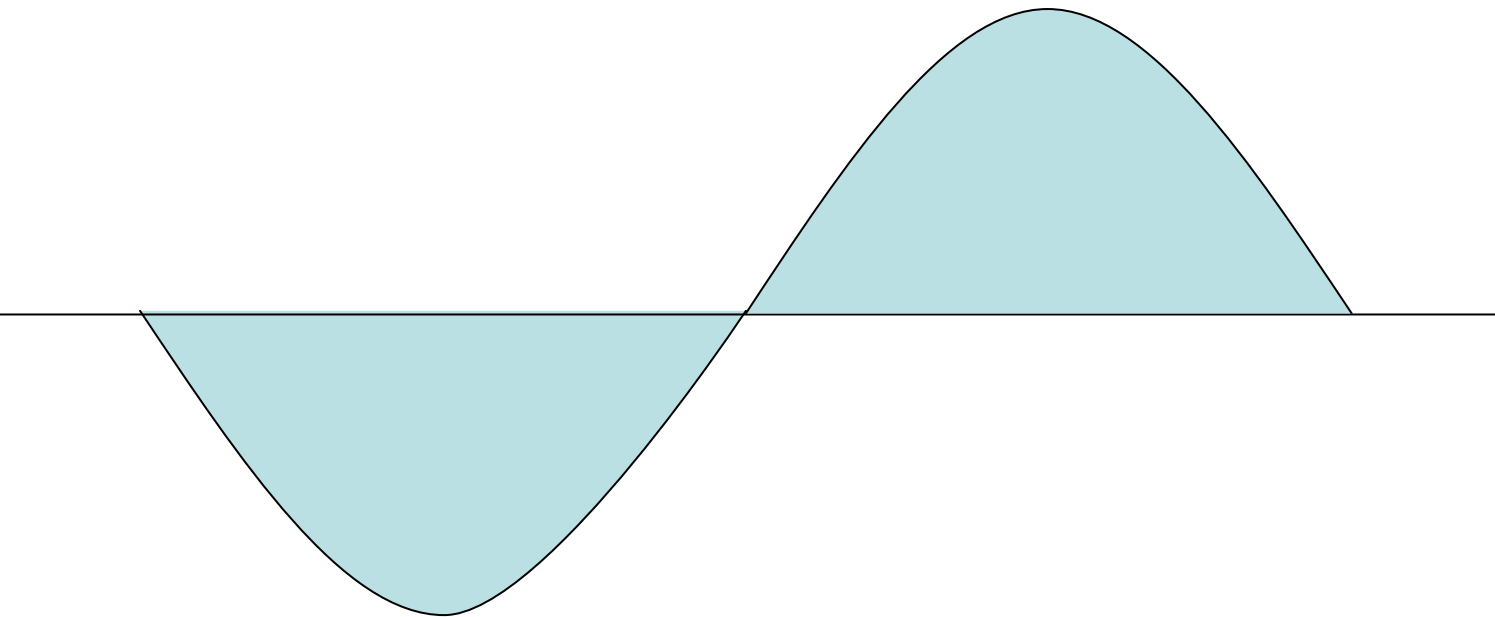
# Background

MART and underload (Young & Stanton, 2002)



# Pre-loading

A kind of 'temporal adaptivity'



# Method

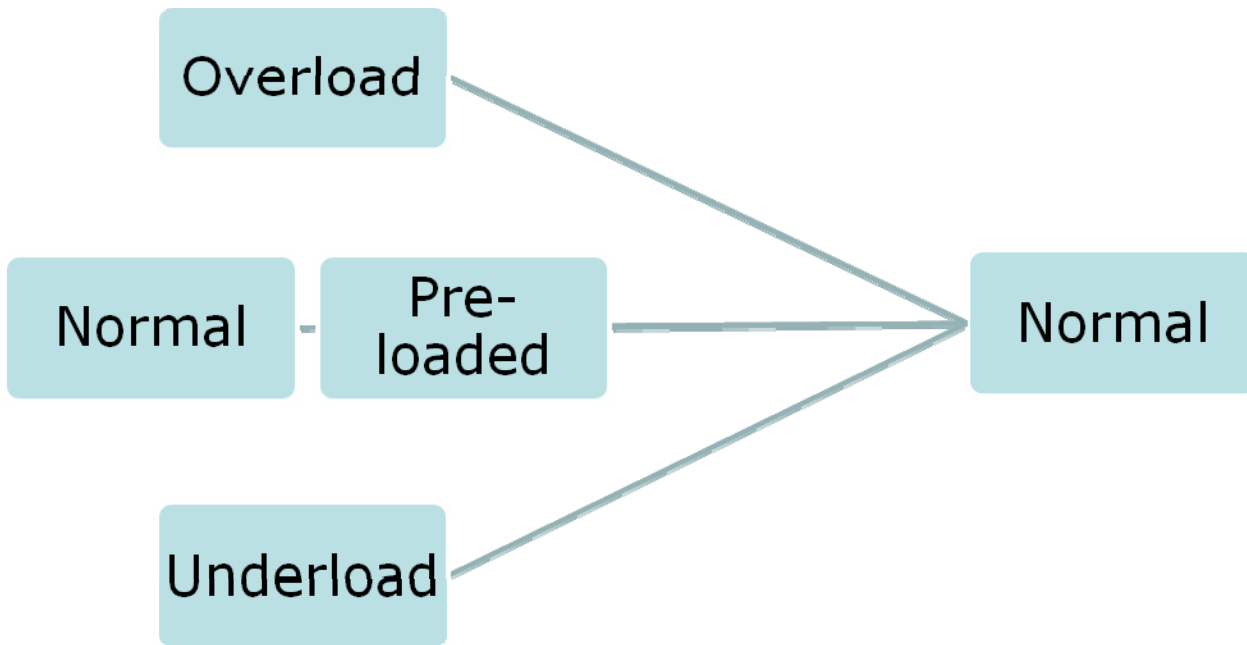
Hazard perception task

Critical event

EDT, driving performance, TLX

	<b>No pre-load</b>	<b>Pre-loading</b>
<b>Low MWL</b>	Underload	Pre-loaded
<b>Normal MWL</b>	Normal	Overload

# Method



# Method

27 Participants (14 low MWL condition)

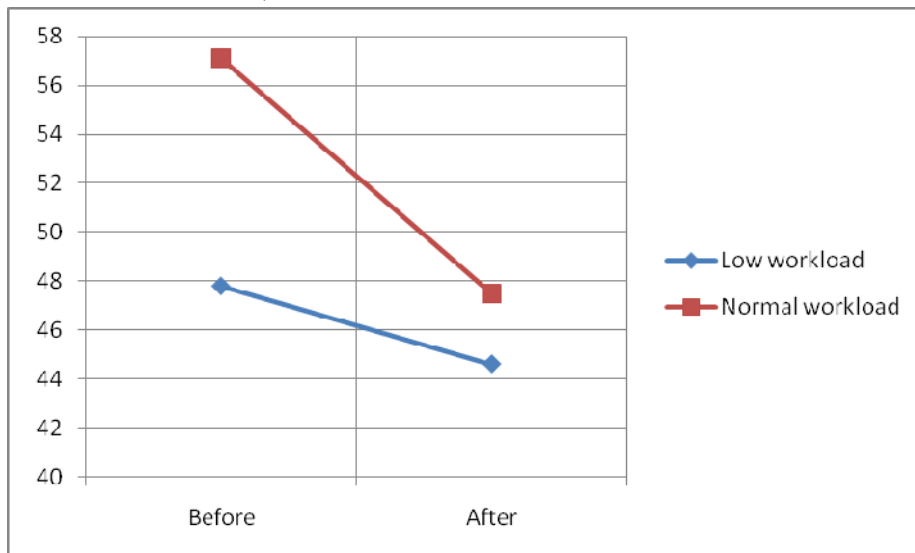
60 mph set speed task



# Results

No sig diffs on primary task (crashes), PDT  
subjective workload increased with pre-loading  
(OWL = 49 vs. 37), and decreased after pre-

loading:

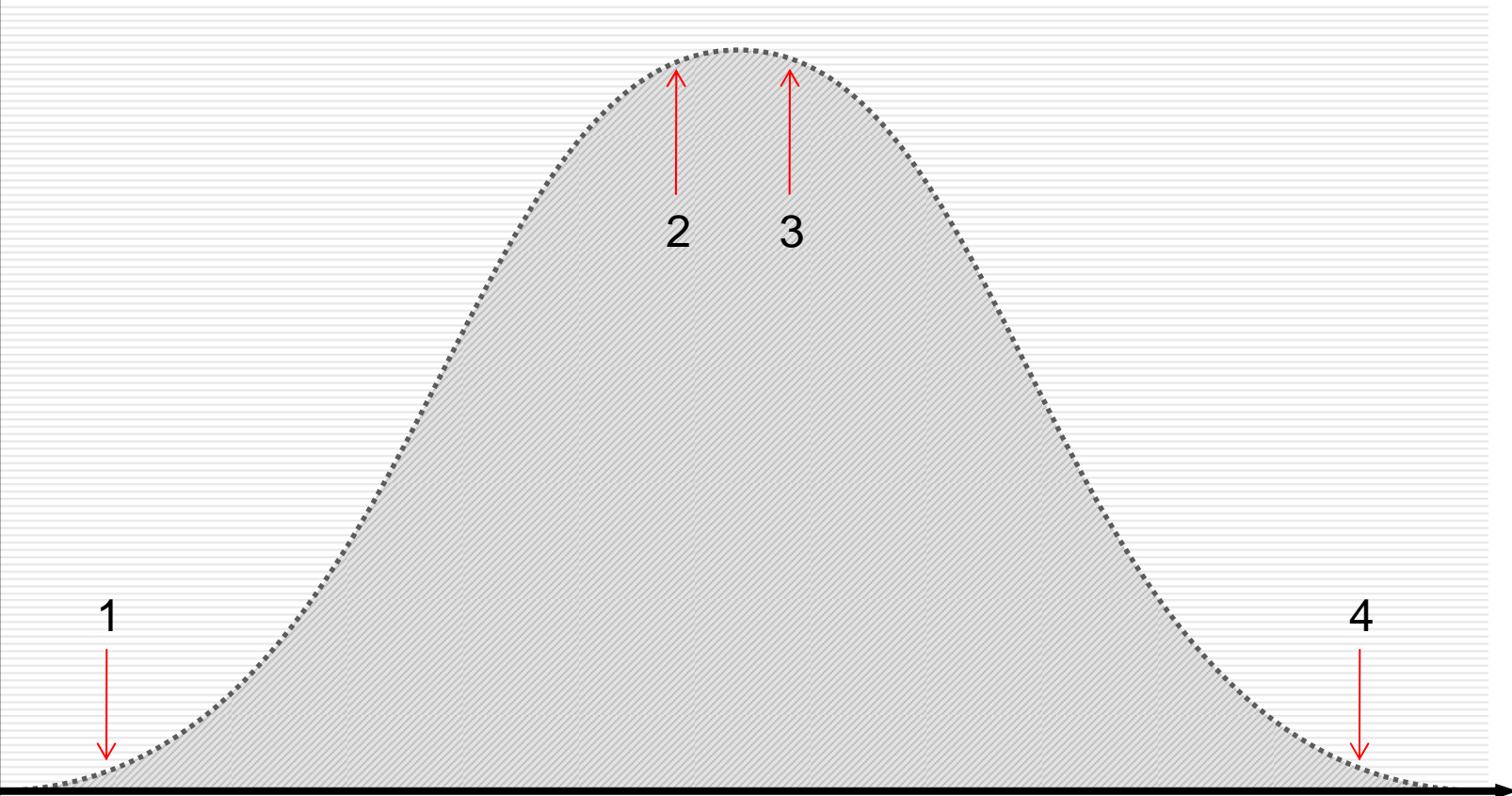


# Discussion

No effect of pre-loading on performance,  
but significant effect on perceived MWL

- Pre-loading doesn't work?
- Underload wasn't low enough (or automation-specific)?
- Pre-loading wasn't loading enough?

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No effect of pre-loading on performance,  
but significant effect on perceived MWL

- Pre-loading doesn't work?
- Underload wasn't low enough (or automation-specific)?
- Pre-loading wasn't loading enough?

More research needed before giving up –  
this is a new approach!

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