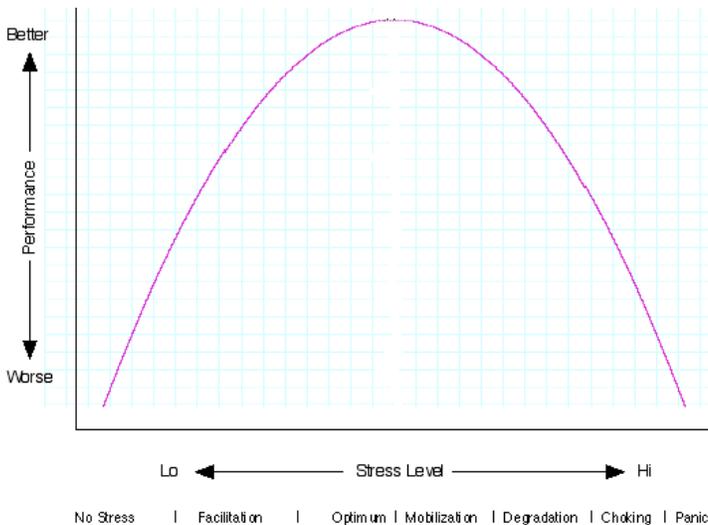


**Purpose:** To give planners and decision-makers a thumbnail sketch of how emergency response changes cognition.  
NOT intended as a Mental or Behavioral Health tool.

## What Happens Under Stress



Stress State  
(Yerkes-Dodson Law adaptation  
(Bourne & Yaroush, 2003))

As Stress Increases to Degradation:

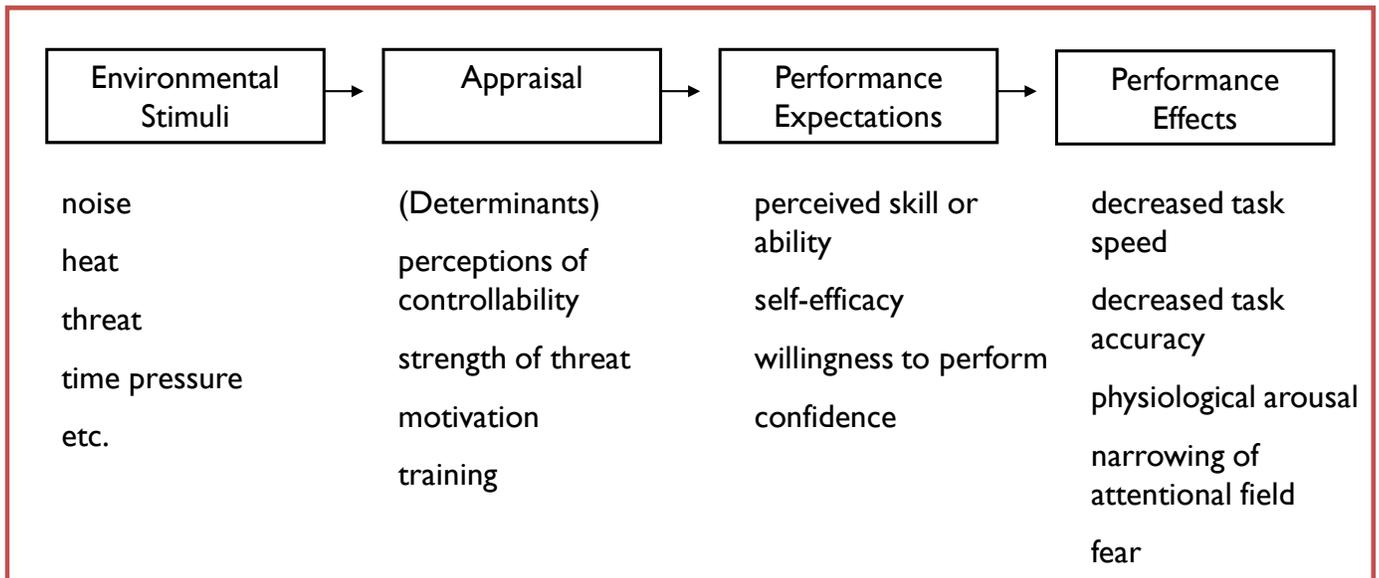
### Individuals

- Reduced cognitive processing speed (delayed ~ 17-60 seconds following a startling event)
- Tunneling - narrowing of human attention
  - restricts scanning of environmental cues
  - yields poor differential diagnosis of situation
- Working memory - capacity and length of time information can be held decreases
  - when exceeded – difficulty performing mental calculations, problem solving, making sense of disparate pieces of information, shifting mental sets
- Individuals may be vulnerable to habit capture (the tendency to perform a habitually performed action even though some aspect of the situation has changed so that action is now inappropriate)
- Tendency to rush (especially during acute phase of the event)

### Leaders

- Experts tend to rely upon recognition primed decision making (use “rules” derived from experience). (Malakis & Kontogiannis, 2011)
  - Positive – speed reaction to time critical situation
  - Negative – may miss cues that indicate the situation is different from expected
- Difficulty interleaving concurrent tasks, dealing with interruptions, and prioritizing
- When overwhelmed, tend to be reactive, cannot see the “big picture”
- Perseveration can also sometimes be a problem (continuation of an action when it is no longer necessary or appropriate)
- During emergencies, executives tend to choose familiar strategies even when they don’t match ground conditions
- Use bureaucratic decision structures that lose sight of operational needs (Waugh, 1991; Wolensky & Wolensky, 1990)
- Make intuitive decisions contrary to prior planning which lead to inferior performance (Bourne & Yaroush, 2003).

## What Affects Stress



A four-stage model of stress and performance (Burian, 2011; adapted from Driskell & Salas, 1996)

## What Helps

- Training that increases automatic processing in standard performance operations under stress has generally been found to be desirable (Kivimäki, & Lusa, 1994).
- Training that incorporates exposure to stress
- Stimulant drugs
- Short period breaks
- Augmented feedback
- Increased reward and motivation (effort)
- Proper appraisal techniques by building cognitive-behavioral skills, meditation and/or relaxation
- Overt Rehearsal of Stress Coping Skills
- Humor
- Increased perceptions of control
- Having prior knowledge on which to base learning

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