

The influence of person characteristics on performance under acute stress:

A conceptual model

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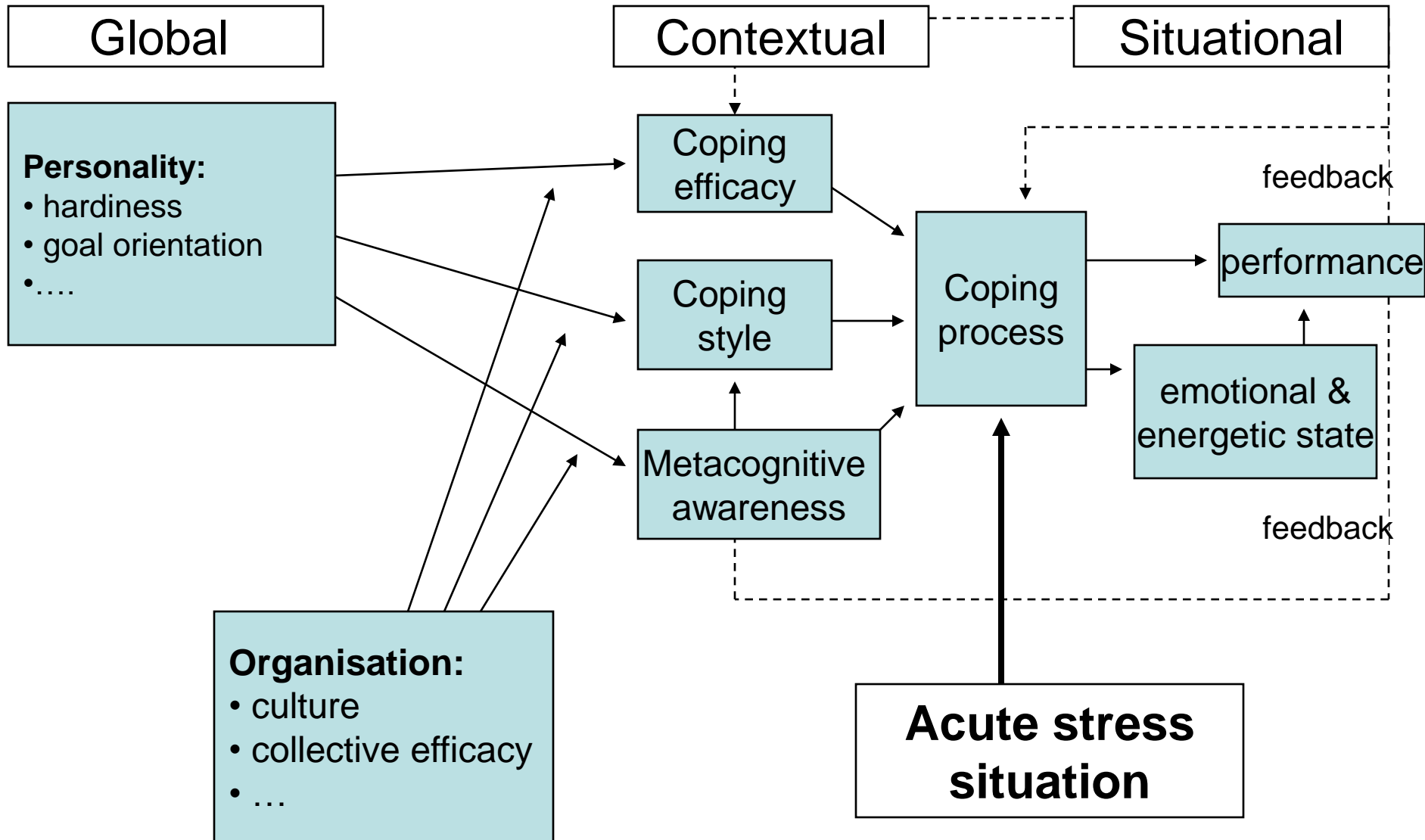
Introduction

- How do person characteristics influence (task) performance under acute stress?
- How do organization factors moderate this process?

Conceptual model:

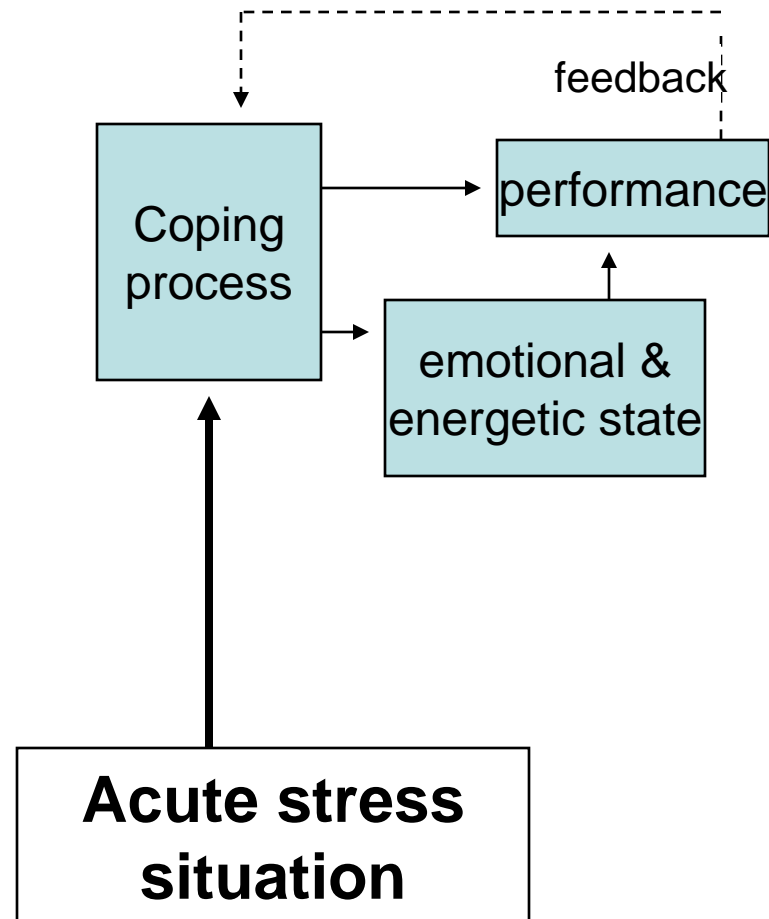
- From distal to proximal predictors
- Person and organization
- Theoretical and practical implications

Distal → Proximal



Situational variables

- concentration under stress
(Gaillard, 2001, 2008)
- coping process
(Lazarus & Folkman, 1984)



Situational variables

Concentration under stress (Gaillard, 2001, 2007)

How does acute stress deteriorate task performance?

- People experience physiological and emotional reactions
- These reactions are distracting
- Decreased concentration on the task
- Deteriorated task performance

Situational variables

Coping process (Lazarus & Folkman, 1984)

Why do people show different reactions to an acute stress situation?

Appraisal: How severe is the threat?/ Can I do something about it?

Outcome: Threat or challenge

- Threat: negative emotions, inappropriate energetic state (i.e. overreactivity), emotion focused coping behavior, deteriorated performance
- Challenge: positive emotions, appropriate energetic state, task focused coping behavior protects performance

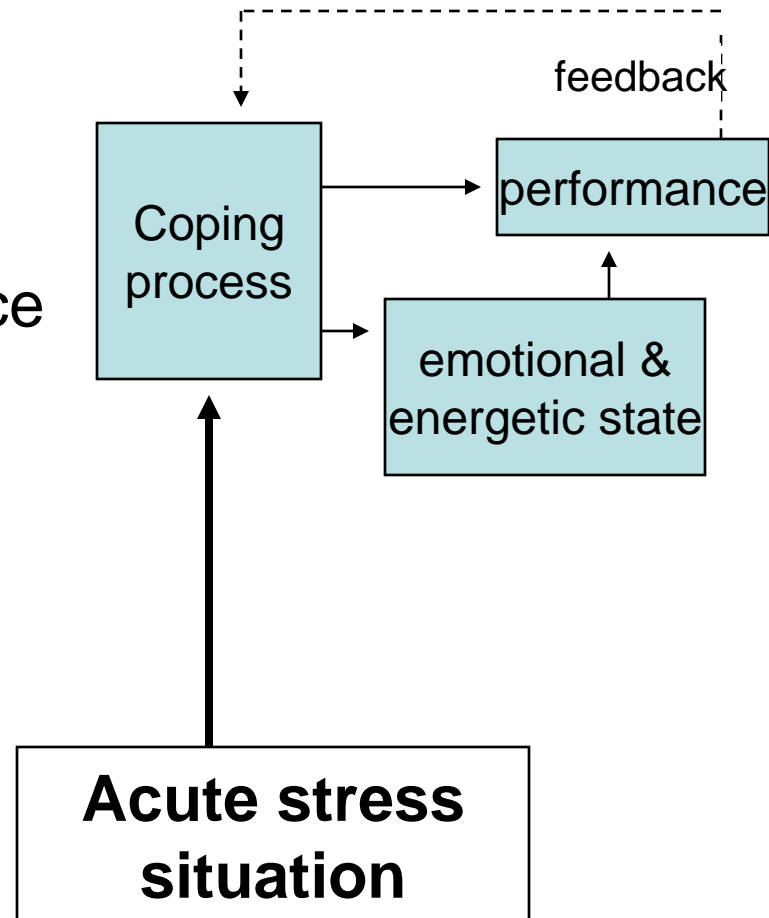
Situational variables

Propositions:

Coping process influences performance through effects on:

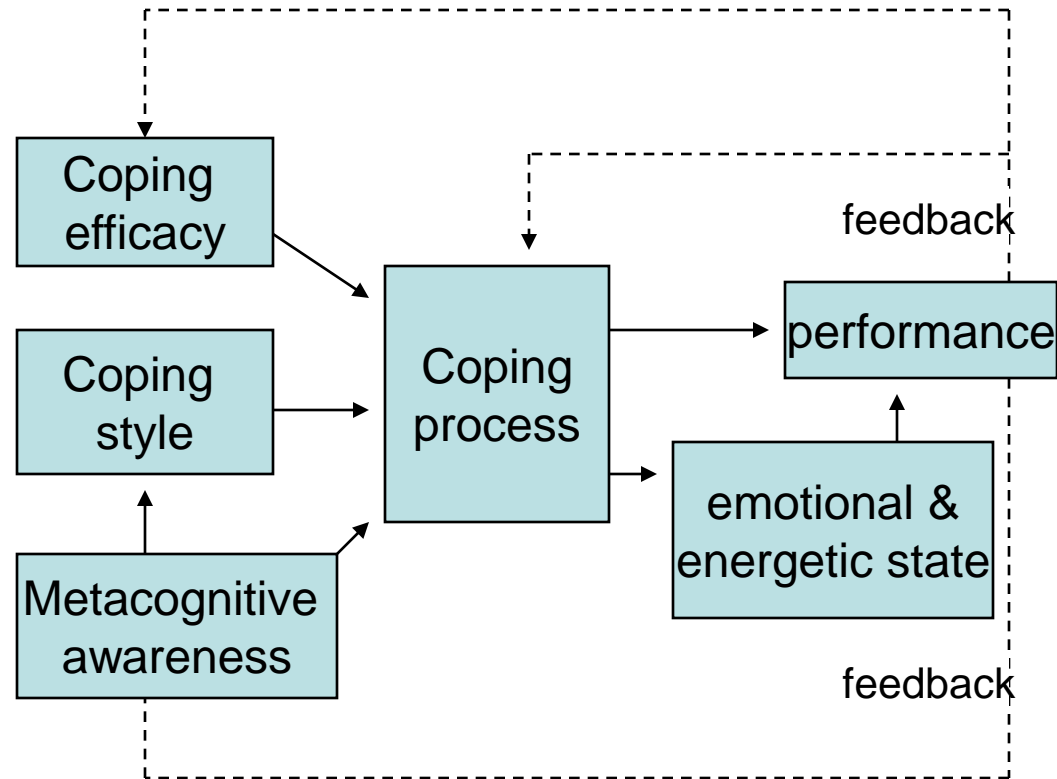
- coping behavior
- emotional & energetic state

Quality of performance influences reappraisal of situation



Contextual variables

Aim of stress exposure programs:
- change people's way of coping,
- increase self-confidence,
- learn to reflect upon and regulate response under stress.
(Saunders, Driskell, Johnston & Salas, 1996)



Person characteristics:

- proximal predictors of coping process
- influenced by training / experience (feedback)
- mediate between global variables and situational variables

Coping efficacy

Coping efficacy:

beliefs people have about their capability to cope with a specific stressful situation (Bandura, 1997)

People high in coping efficacy:

- experience less anxiety
 - use more problem or task focused coping
- (e.g., Ozer & Bandura, 1992)

Coping efficacy can be influenced by training, for example through mastery experiences (Bandura, 1997)

Coping style

Coping style:

Someone's preferred way of coping (Carver & Scheier, 1992)

Coping style effects actual coping behavior under **stress** (e.g., Ptacek e.a., 2006):

People with a more:

- problem focused coping style will show more problem or task focused coping behavior
- emotion focused coping style will show more emotion focused coping behavior

Metacognitive awareness

Metacognition research in educational domain:

‘the ability to reflect upon, understand, and control one’s learning’ (Schraw & Denisson, 1994)

Metacognitive awareness about stress and coping:

knowledge about one’s emotional reactions and coping behaviors and the conscious regulation of these reactions and behaviors (Delahaij, Gaillard, & Soeters, 2008)

People with strong metacognitive awareness (Theodosiou e.a., 2006)

- learn more
- perform better

Metacognitive awareness is influenced by experience / training.

Contextual variables

Propositions:

Coping efficacy:

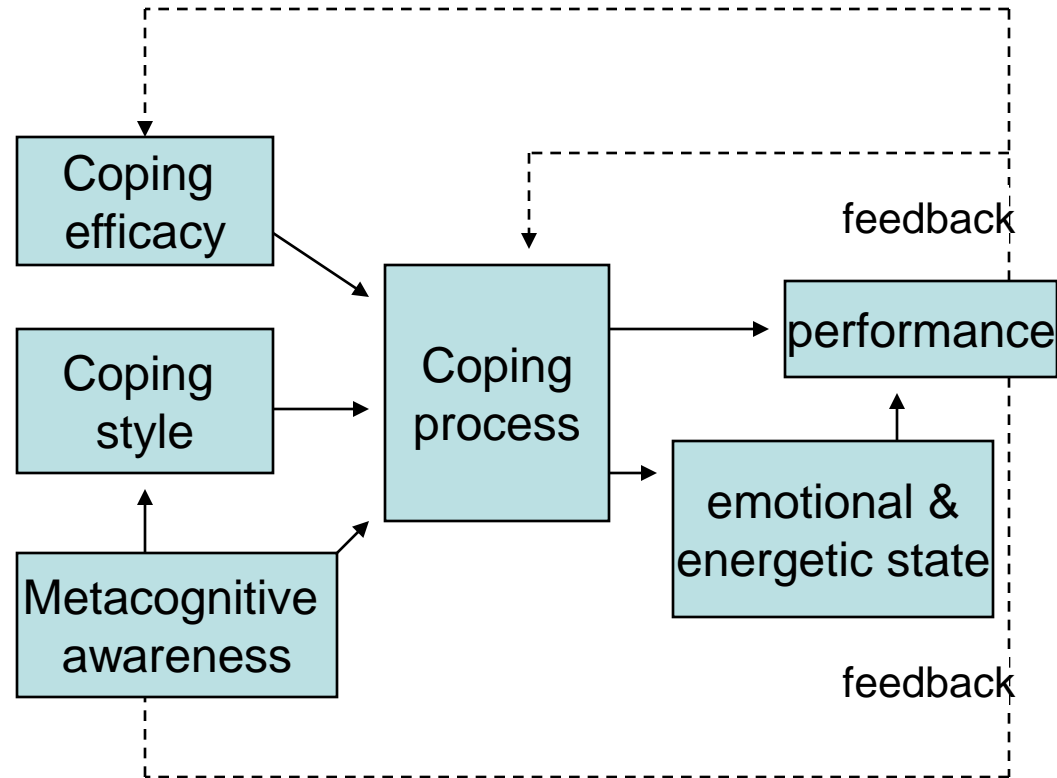
- leads to effective coping behavior
- and less anxiety
- is influenced by experience

Coping style:

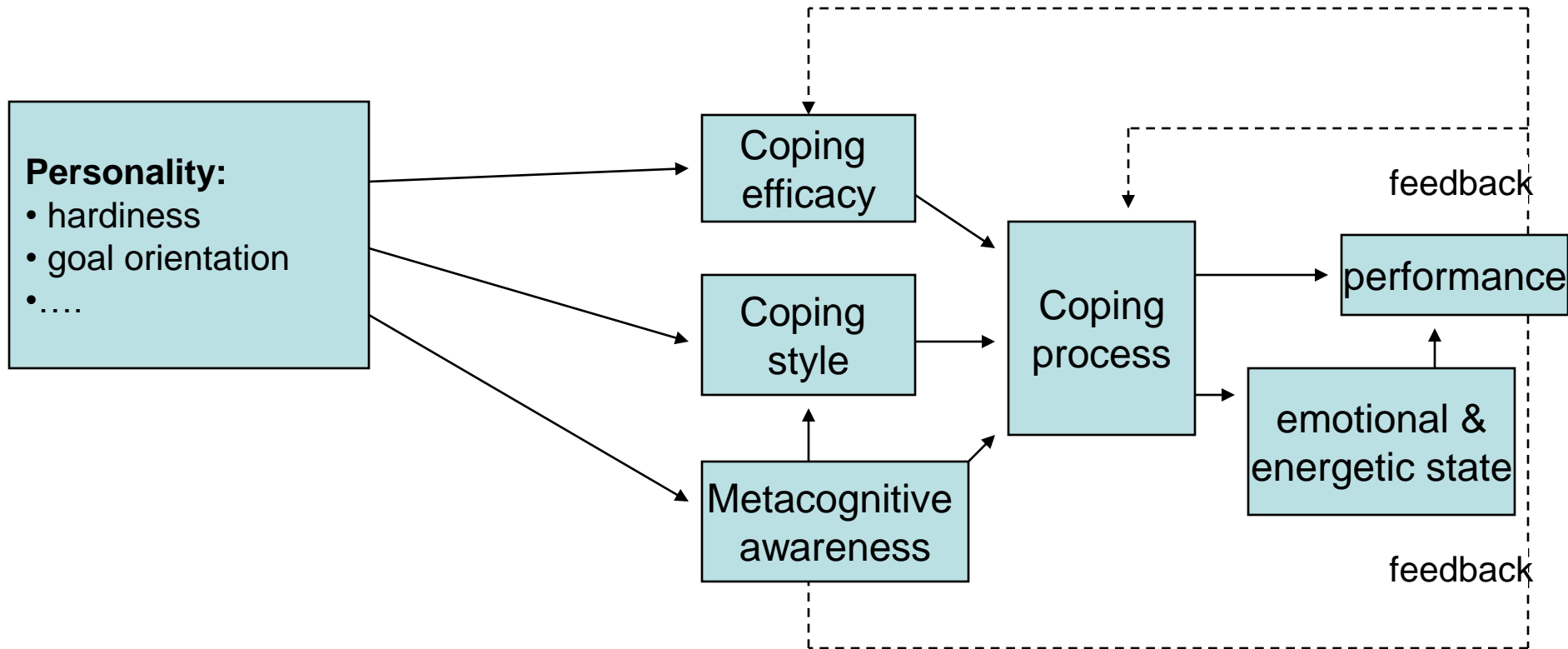
- influences coping behavior
- is influenced by experience through metacognitive awareness

Metacognitive awareness:

- leads to effective coping behavior
- is influenced by experience



Global variables



Personality traits:

- very stable person characteristics
- influence (development of) contextual person characteristics
- distal predictors of coping process

Global variables

Hardiness:

Hardy persons believe that they can control the events they experience (i.e., internal locus of control), they are committed to what they do and they feel challenged by stressful situations (Kobasa, 1979).

Hardiness is related to:

- More problem focused coping style (e.g, Eid e.a., 2004)
- Strong coping efficacy (e.g, Florian e.a., 1995)

Global variables

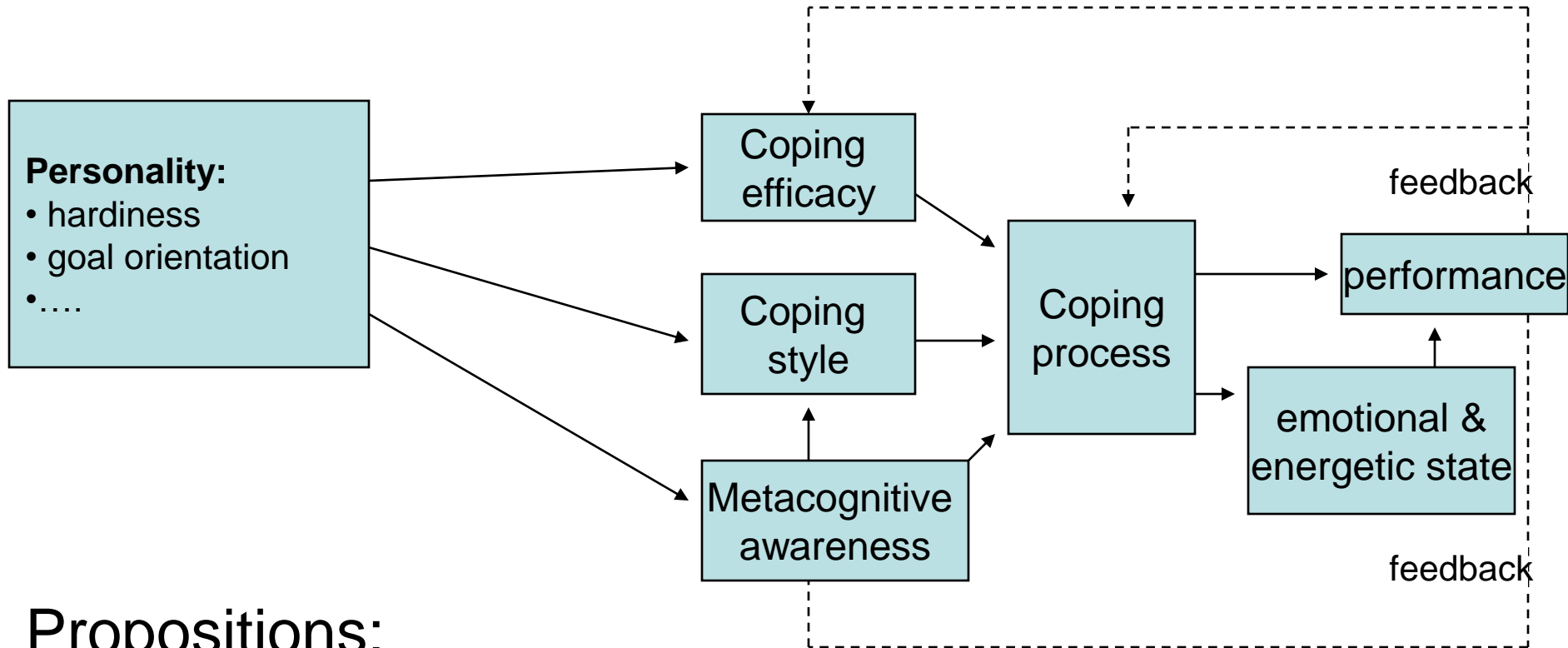
Learning goal orientation:

a striving to enhance one's competence and to learn something new (Dweck, 1986)

Learning goal orientation is related to:

- Strong coping efficacy (e.g, Gerhardt & Brown, 2006)
- Strong metacognitive awareness (e.g., Ford e.a., 1998)

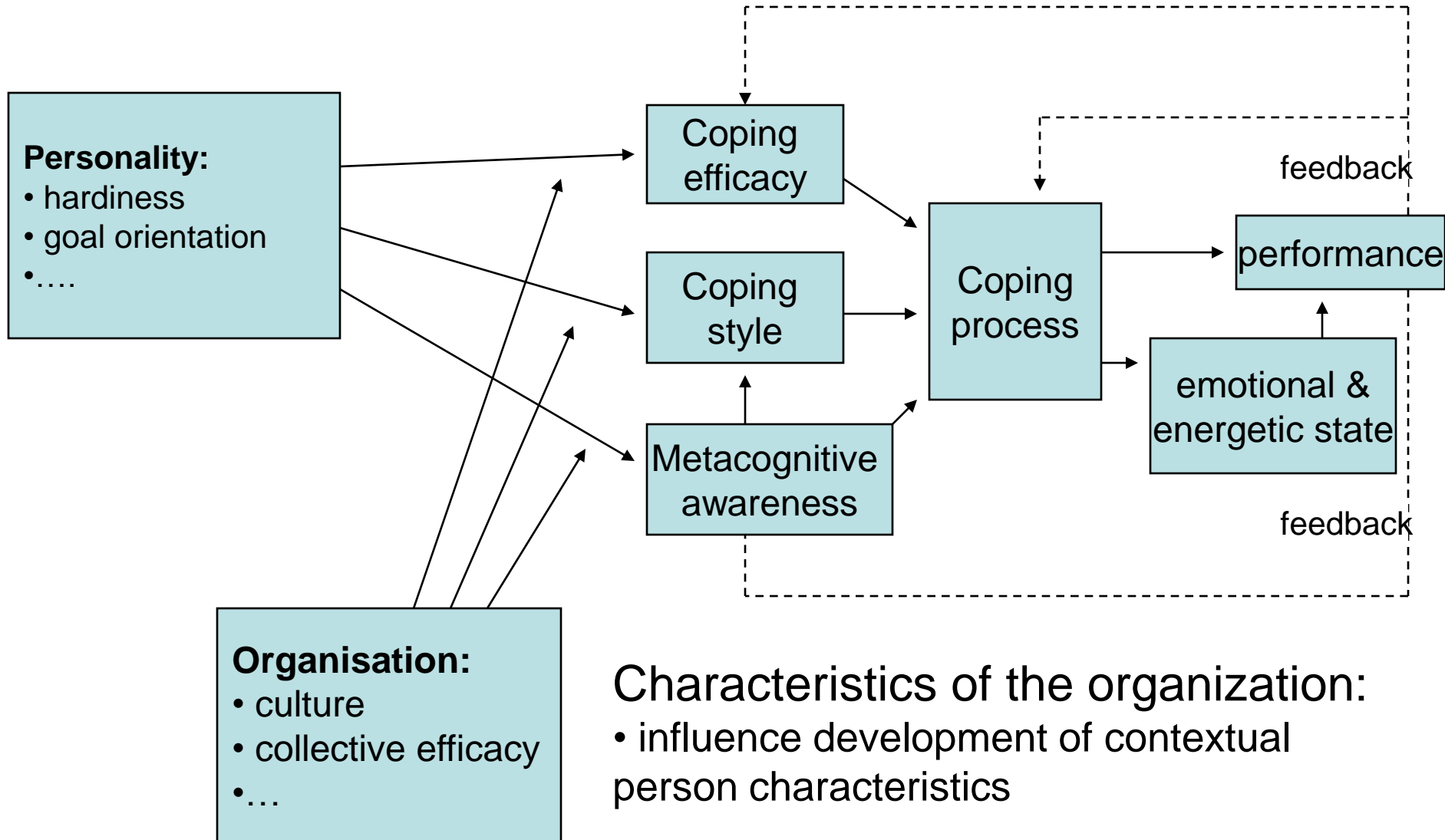
Global variables



Propositions:

- Personality traits influence the (development of) coping efficacy, coping style and metacognitive awareness
- and through that the coping process and performance under acute stress

Organization factors



Organization factors

Organization culture:

- norms determine the way professionals are 'supposed to act'

For example:

- Problem focused coping in military (e.g., Ben-Ari, 1998)
- Not talking about emotions in police-force (e.g., LeScanff & Taugis, 2002)

Organization factors

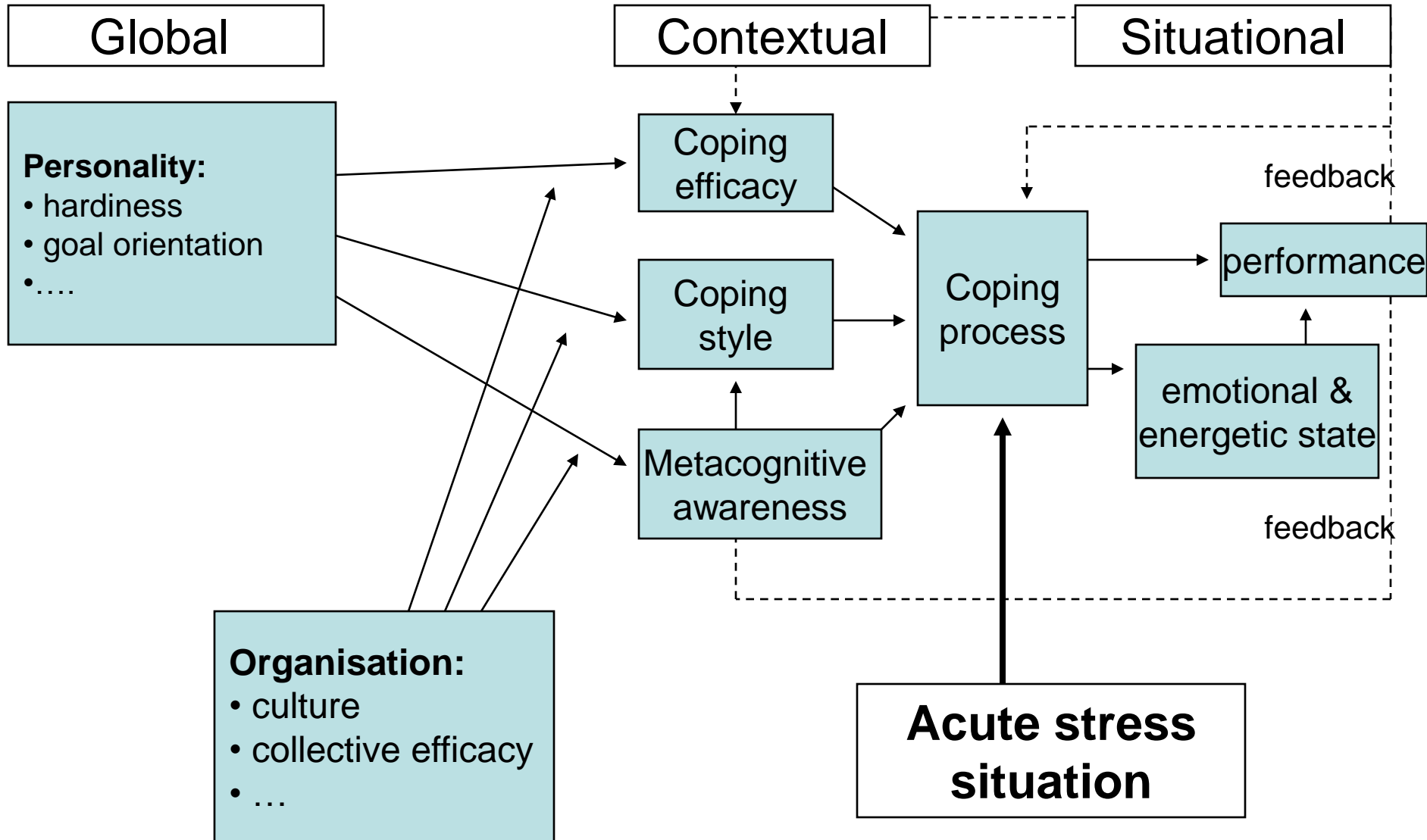
Capability of the organization:

The perceived capability of the organization to support performance under acute stress can influence coping efficacy.

For example:

- Collective efficacy will influence individual coping efficacy of professionals working in a interdependent team (Bandura, 1997)
- Lack of material support (e.g., not enough armoured vehicles)

Distal → Proximal



Current research

Longitudinal studies conducted in 2006/2007/2008:

- Netherlands Defence Academy
- Air Mobile Brigade
- Dutch Marines

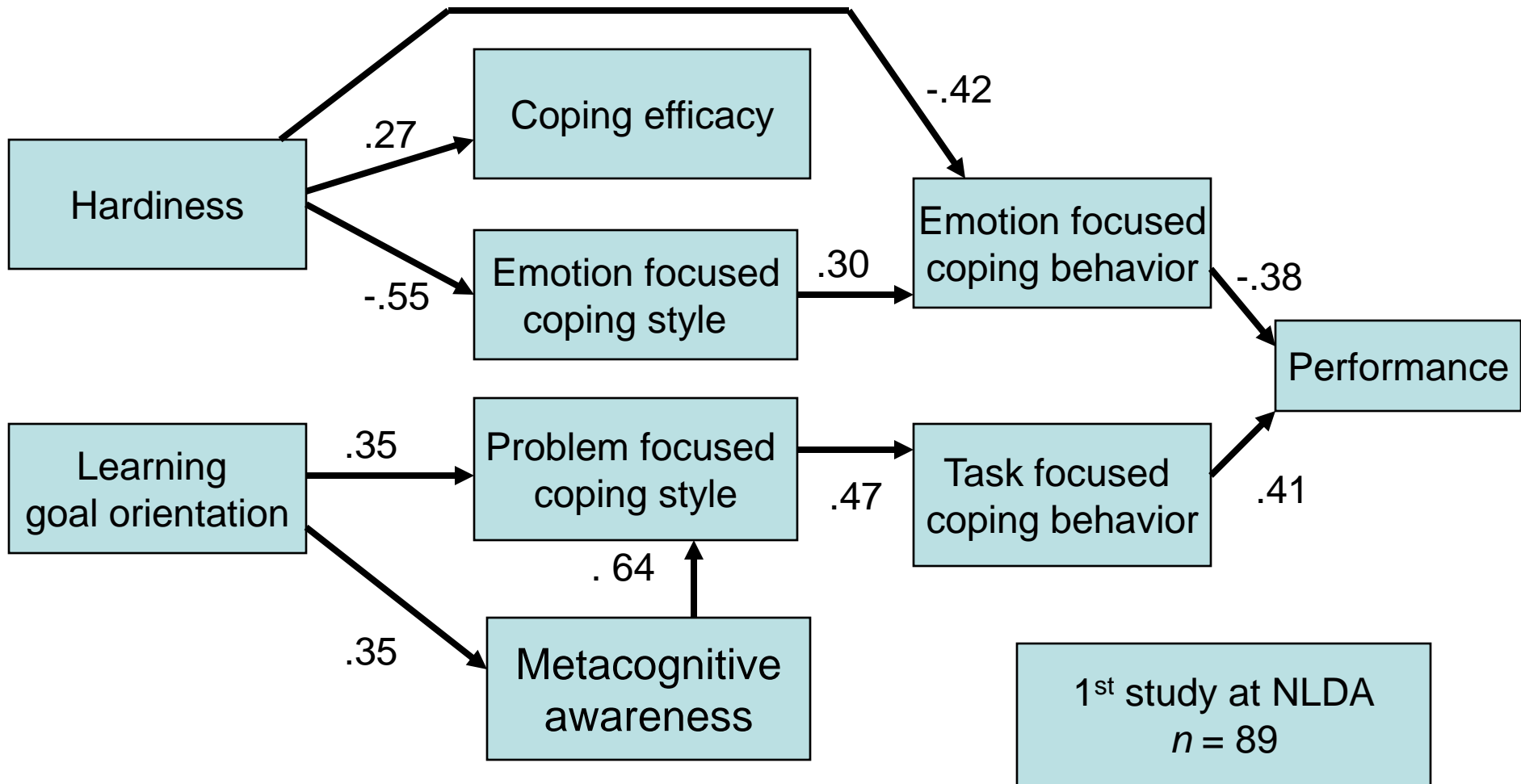
Method:

- Using military exercises to assess performance under acute stress.
- Using longitudinal design to assess relationship between personality and organization factors and development of coping style, coping efficacy and metacognitive awareness during basic military training.

Results

Paper presented at Annual Conference of Society of Industrial and Organizational Psychology 2008

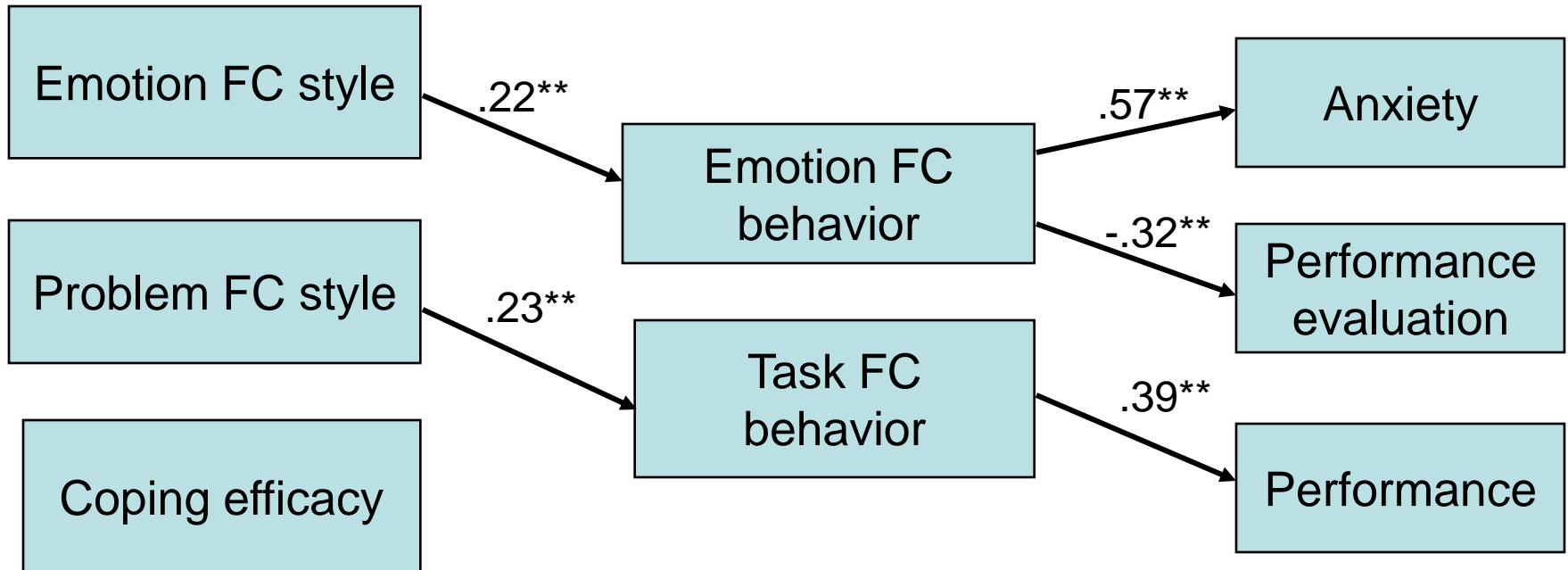
GLOBAL → CONTEXTUAL → SITUATIONAL



Results

Paper presented at Annual Conference of Human Factors and Ergonomics Society 2008

CONTEXTUAL → SITUATIONAL



2nd study at NLDA
 $n = 123$

Note. FC = focused coping, $^{**} = p < .01$, $^* = p < .05$,

Questions?

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