



EROS

Emotion Regulation of Others and Self

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**A light in the dark:
The effects of waking to simulated
sunshine on
emotions and emotion regulation
strategies**

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Emotion and emotion regulation

- Evidence shows that emotional states associate with behavioural outcomes such as performance (Beedie et al., 2000; Hanin, 2000)
- Athletes develop beliefs that emotions influence performance (Hanin, 2003) and emotions associated with success and failure is ideographic

Emotions and emotion regulation

- Hanin (2000) argues that emotions are energy-giving, a perspective consistent with evolutionary psychologists (Nesse & Ellsworth, 2009).
- Evidence shows that athletes regulate emotions to aid performance (Totterdell & Leach, 2001)



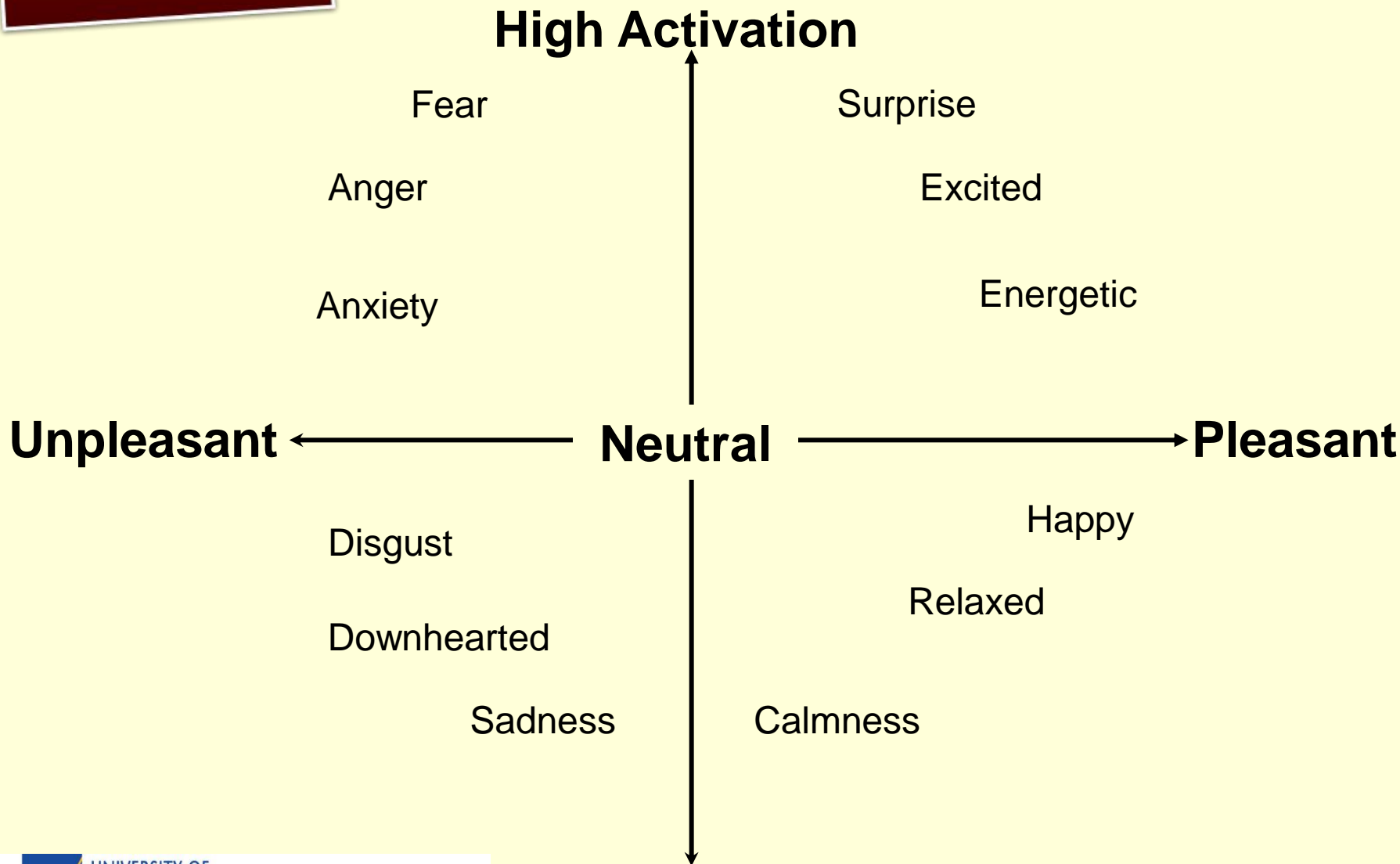
Emotion regulation

- Emotion regulation concerns the use of strategies that people use in order to bring about changes in how people feel.
- If a sufficient discrepancy exists between one's experienced and one's desired emotion, then regulatory efforts are engaged (Carver, 2004; Higgins, 1999).

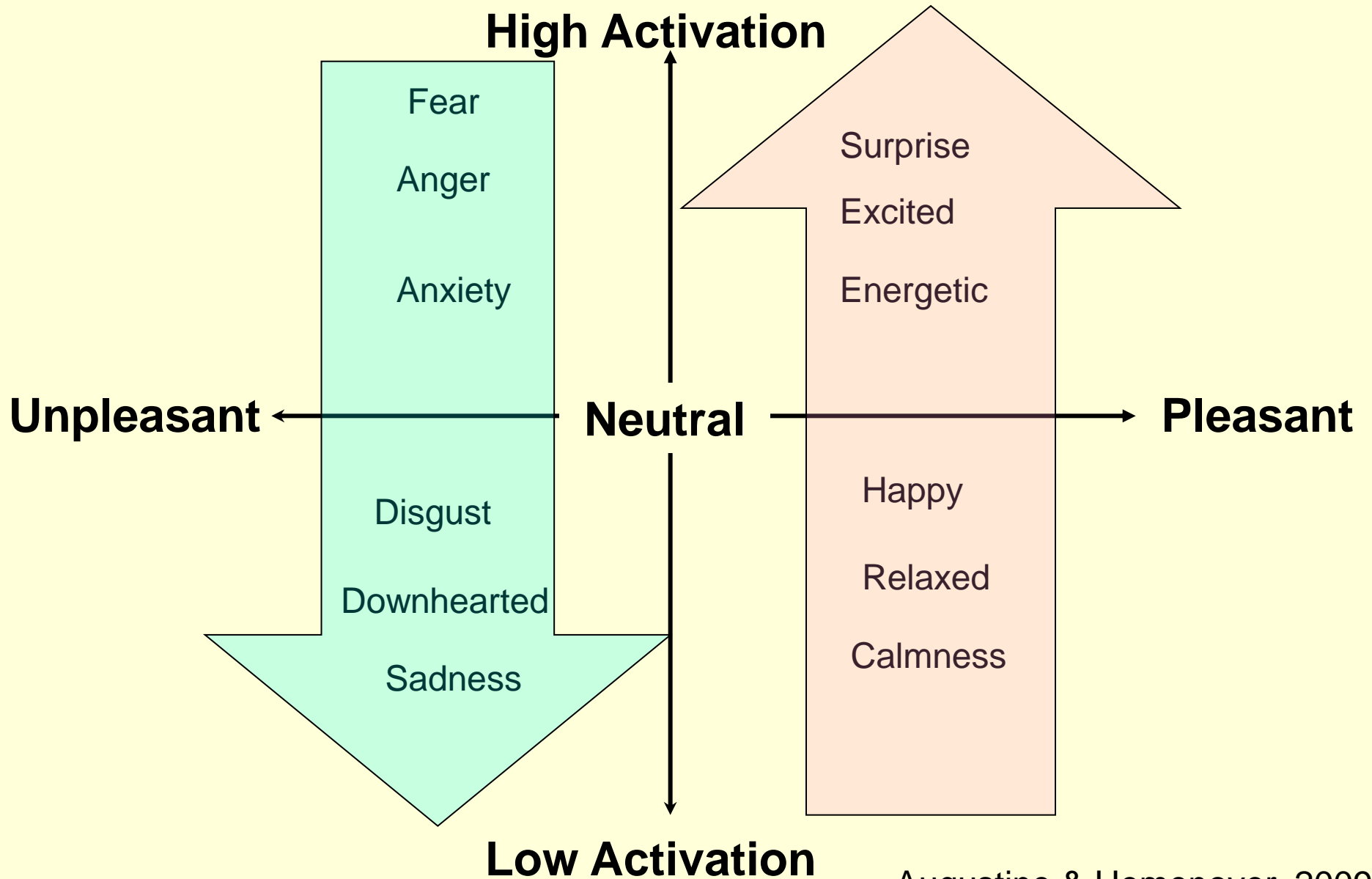


Model of emotion

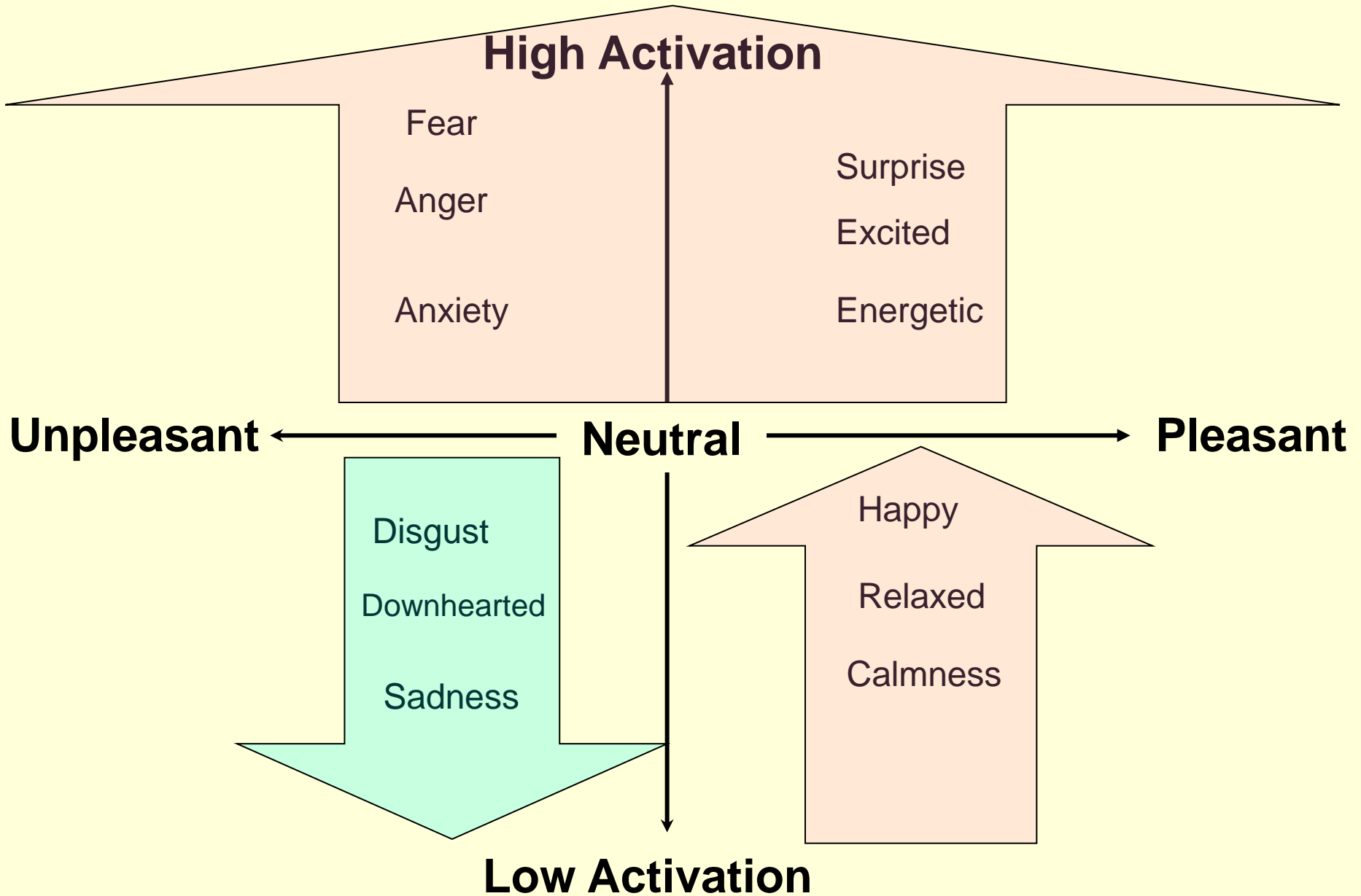
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Direction of emotion regulation



Possible emotion regulation to improve sport performance



Emotion regulation: Deliberate vs automatic

- Conscious emotion regulation
 - Cognitive
 - Re-appraisal of the cause of emotions, of the event (Gross & Thompson, 2007)
 - Behavioural
 - Call, talk to, or be with, someone, exercise, relaxation techniques, music, and food (Thayer, Newman, & McClain, 1994)
- Emotion regulation could be effortful (Gailliot, Baumeister, DeWall et al., 2007)
- Automatic emotion regulation is desirable if resources requires preservation

Emotions and high volume training

- Research has found intense training associates with increases in unpleasant emotions (Morgan et al., 1987)
- High volume of exercise leads to unpleasant emotions
 - Unexplained under-Performance Syndrome UPS (Budgett et al., 2000)
 - UPS often treated by rest or reduction in training



Light therapy

- Evidence suggests some individuals experience unpleasant emotions during winter months and light therapy is an effective treatment (Magnusson & Boivin, 2003; Rosen, et al., 1996).
- Certain sports traditionally train very early in the morning (e.g., swimming).
- Therefore, athletes experiencing unpleasant emotions should be targeted for intervention work to increase emotion regulation effectiveness
 - Possibly through psychological skills training



Summary of the gap in the literature

- If athletes seek to regulate emotions to aid performance, then emotion regulation is important.
- Training volume and daylight can place strain on emotion regulation coping resources.
- Light therapy acts as an non-conscious emotion regulation strategy and therefore might help athletes regulate emotions during winter months.



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Purpose

- The aim of the present study was to investigate the influence of using light therapy when waking to external darkness



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- *"I've had mine for about six weeks and use it every night. I like the way it works and will continue to use it."* Mark Foster, Olympic athlete
- *"I think they are worthwhile, especially in the winter months when it's cold and dark - they will help you feel more awake."* Hannah Miley, Olympic athlete

BRITISH

Swimming



Method

- Participants and procedure
 - 13 athletes completed the registration questionnaire (Age: $M = 18$).
 - Participants completed measures:
 - Emotion (experienced and ideal),
 - Emotion regulation,
 - Confidence to regulate emotions,
 - Training volume
 - Time spent training daily for four weeks.
 - Half of participants used their light to assist waking during the first two weeks, switching half way through the test period.
 - All measures were completed online.



Light therapy

- Participants were issued a Lumie Light Body Clock
- Simulates morning sunshine, gradually increasing brightness over 10 minute period





- **Emotion Regulation Questionnaire (Niven et al., 2010)**
 - **Behavioral Strategies to increase pleasant emotions**
 - *I did something I enjoy to try to improve how I felt*
 - *I laughed to try to improve how I felt*
 - **Cognitive strategies to increase pleasant emotions**
 - *I thought about my positive characteristics to try to make myself feel better*
 - *I thought about positive aspects of my situation to try to improve how I felt*

Cont...

- **Behaviorial strategies to increase unpleasant emotions**
 - *I started an argument with someone to try and make me feel worse*
 - *I expressed cynicism to try and make me feel worse*
 - *I listened to sad music to try and make me feel worse*
- **Cognitive strategies to increase unpleasant emotions**
 - *I looked for problems in my current situation to try to make me feel worse*
 - *I thought about my shortcomings to try and make me feel worse*
 - *I thought about negative experiences to try and make me feel worse*
- **Dysfunctional strategies intended to increase pleasant emotions**
 - *I hid my feelings to try to improve how I felt*
 - *I avoided thinking about things to try to make myself feel better*
- **Items rated on 5-point scale:** Not at all (1), Just a little (2), Moderate amount (3), Quite a lot (4), A great deal (5)



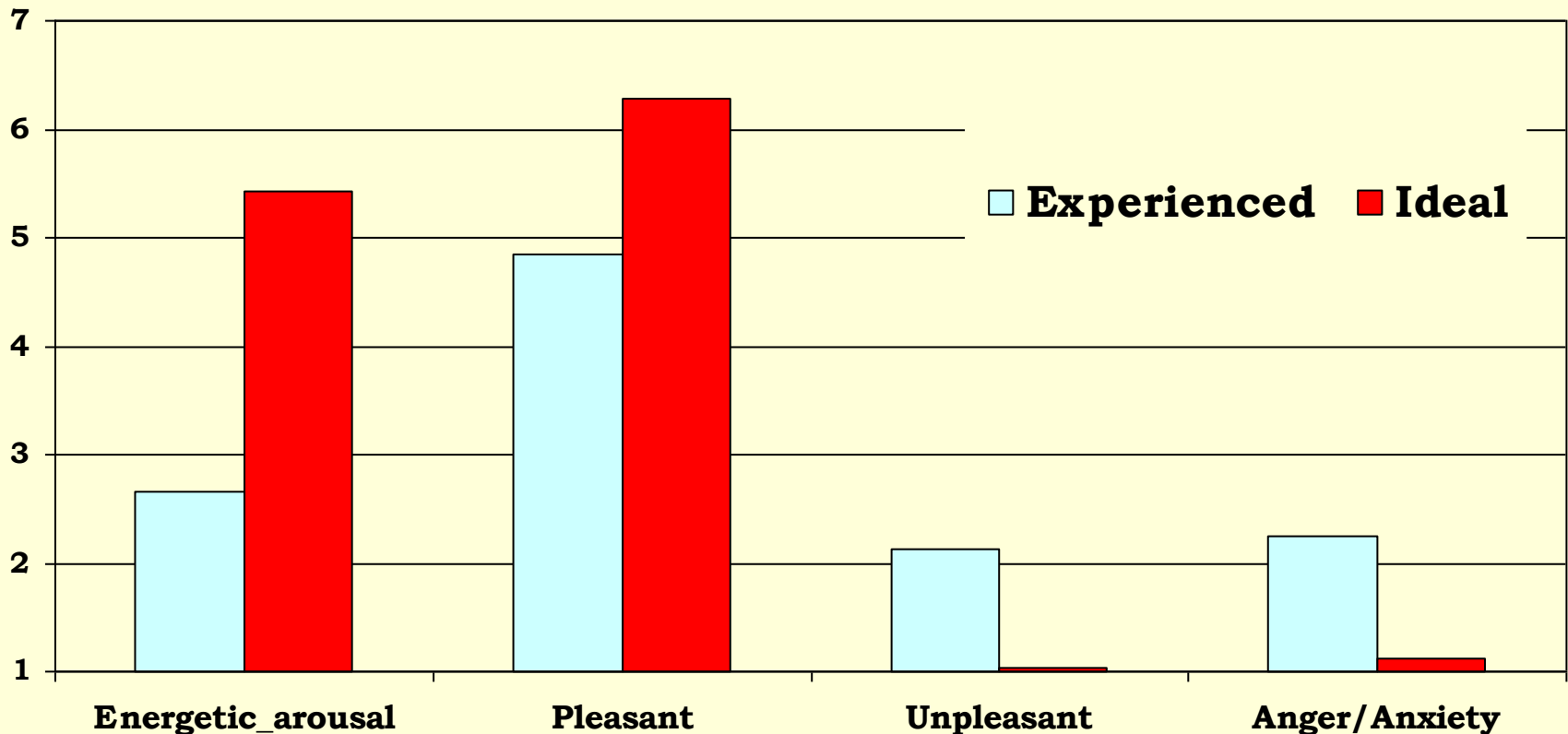
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Emotion

- Short emotion scale (over the past 24
 - Pleasant emotions: Happy + Calm
 - Energetic-arousal: Energetic – sluggish
 - Unpleasant emotions: Gloomy + Downhearted
 - Anger + Anxiety
 - Assessed on a 1-7 scale

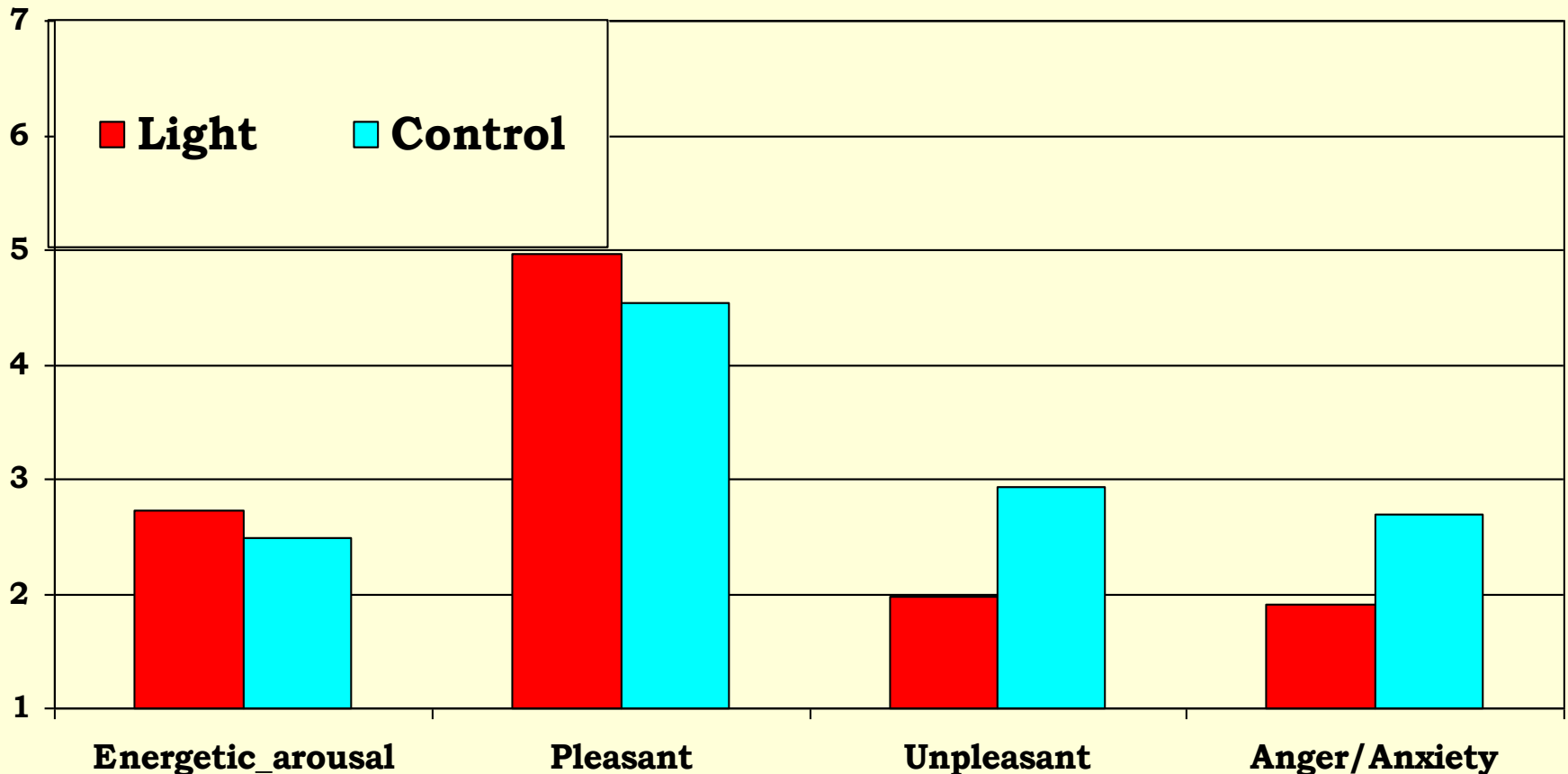
Results

- Results show athletes wished to increase feelings of energetic-arousal, pleasant emotions and reduce unpleasant emotions and anger/anxiety: Wilks lambda 4,165 = .39, $p < .001$, Partial Eta2 = .61



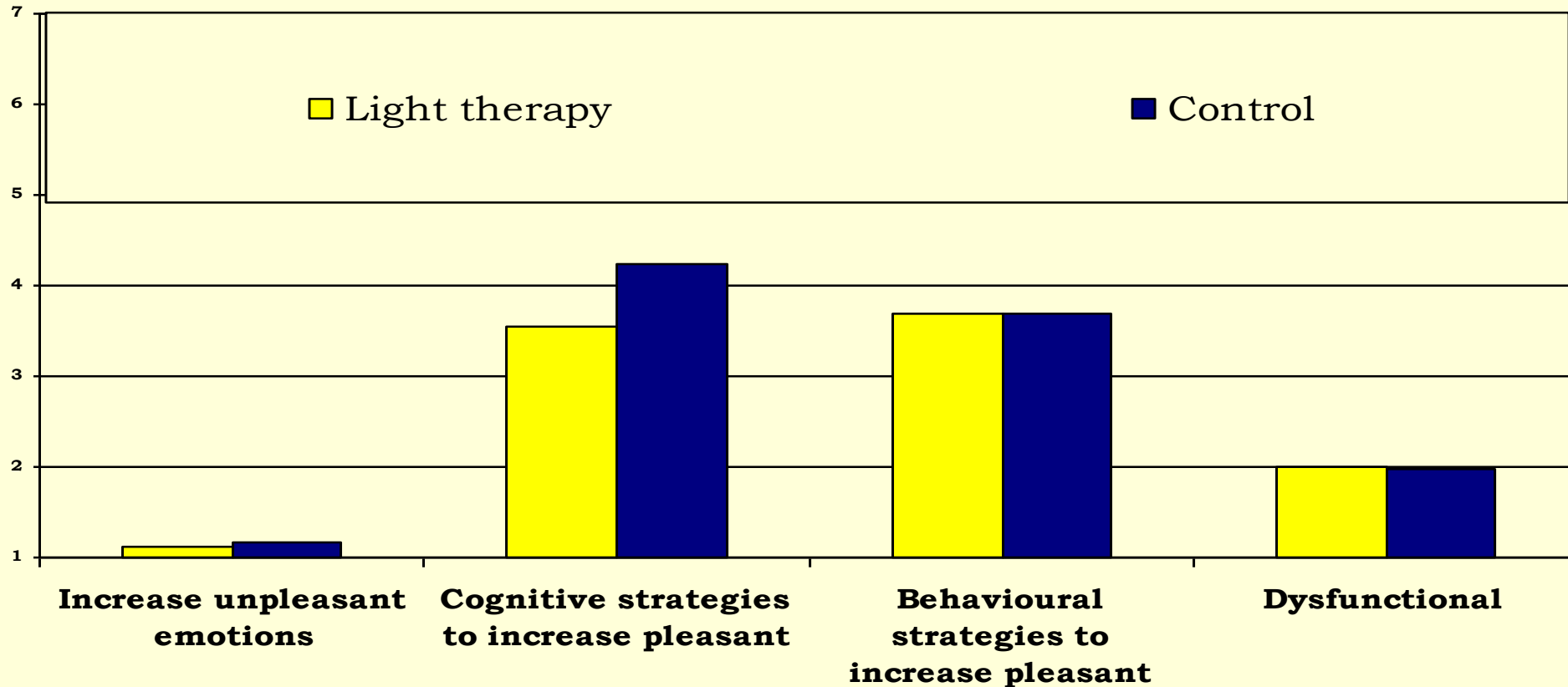
Emotional states between the two conditions

- ✓ Effects of light therapy; Wilks' Lambda = 0.40, $P < .001$, $\eta^2 = 0.60$
Significant effects for; pleasant, unpleasant, anger/anxiety



Results

- Results show using light therapy associated with fewer usage of emotion regulation strategies (Wilks lambda = .94, $p = 0.03$, $\eta^2 = .06$).
- Cognitive strategies reduced using light therapy ($F = 4.97$, $p = .03$)



Discussion

- Results show that participants experienced increased pleasant with reduced unpleasant emotions and anger/anxiety.
 - A patterning of emotions that suggests they regulated closer to their ideal
- Results show no significant differences in energetic arousal, the emotional state which demonstrated the largest discrepancy.



Discussion

- Improved emotions occurred with participants using fewer usage of strategies to regulate emotions
- Waking during the winter months might be a more effortful process and light therapy eases this process, possibly creating more head room for focusing on performance.

Discussion

- Start-of-day mood might affect one's appraisal of subsequent events.
 - In particular, positive mood leads people to perceive stimuli in a more positive light (Carlson, Charlin, & Miller, 1988).
- Belief in light therapy might influence the results; people wanted the light to be effective (Beedie & Foad, 2008)



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Conclusions

- Light therapy associated with improved emotion with no concurrent increase in emotion regulation strategies
- Future research should look to examine mechanisms underlying this effect.



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- Thank-you for listening

