The psychology of recovery

Implications for athletes and coaches

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Who am I? A ‘pracademic’…

- Assistant professor UvA
- PhD from Eindhoven University of Technology
  - Mental effort and recovery in elite sport
- Sport/performance psychologist
- Speed skating, running

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What is recovery?

- Physical/physiological
- Psychological
  - Thoughts
  - Emotions

  'mental'
  - Behaviour

- **Complete** recovery is accomplished when physical and mental (i.e., cognitive and emotional) systems that were activated have been replenished

- **Adequate** recovery depends on getting a break from demands (Kellmann, 2002; Sonnentag & Fritz, 2015)
  - Cognitive Activation Theory of Stress (CATS; Ursin & Eriksen, 2010)
  - Allostatic Load Theory (McEwen, 1998)

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Breaking activation: Detachment

- Detachment = refraining from sport-related activities, thoughts, and emotions
  - Shaking off physical exertion (physical detachment)
  - Attending to things other than sport (cognitive detachment)
  - Putting aside sport-related emotions (emotional detachment)
- Provides a 'break' of mental (and physiological) activation
- Motivational aspect: willingness to expend new effort

"When he's on the bike he is really really on it. When he is off the bike he goes quite crazy with fun."
– Wout Poels

Football: Gareth Southgate gives England players week off before World Cup preparations

All Blacks mental skills coach urges Kiwis to take time out

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Study among elite athletes

- 68 elite athletes (36 males, 32 females; mean age = 21.2, SD = 5.3)
- 19.8 hours per week (SD = 6.5)
- Online daily diary study (8 days) with 2 daily surveys: after waking up (T1), before bedtime (T2)

- **Training demands**
  - Physical, cognitive, and emotional (weighted score)
- **Detachment**
  - Physical (“Since the last training session, I shook off the physical exertion from my sport activities”)
  - Cognitive (“Since the last training session, I thought about other things than my sport”)
  - Emotional (“Since the last training session, I put all emotions from sport aside”)
- **Recovery state**
  - Physical, cognitive, and emotional (e.g., “At this moment, I feel emotionally recovered”)

Balk, Y. A., de Jonge, J., Oerlemans, W. G., & Geurts, S. A. (2017). Testing the triple-match principle among Dutch elite athletes: A day-level study on sport demands, detachment and recovery. *Psychology of Sport and Exercise*, *33*, 7-17

Results

= positive relation

= negative relation

Physical demands

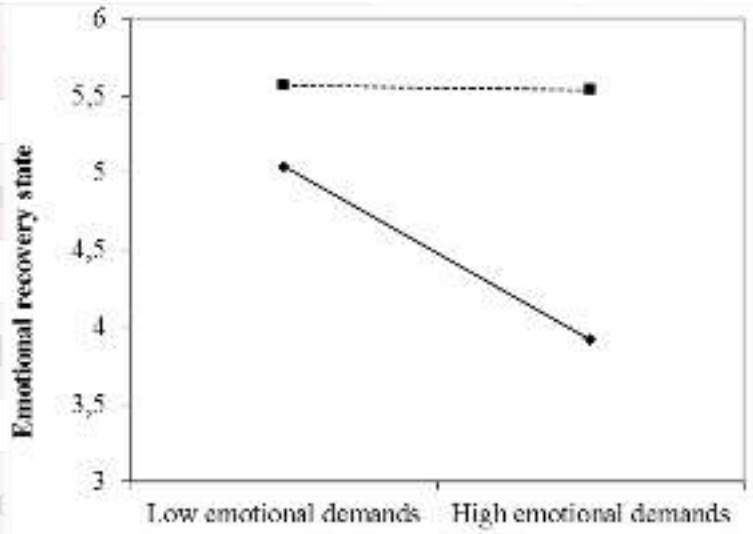
Cogniti

Emotio

Physica

Cognitiv

Emotional detachment



tate

state

state

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What about coaches' recovery?

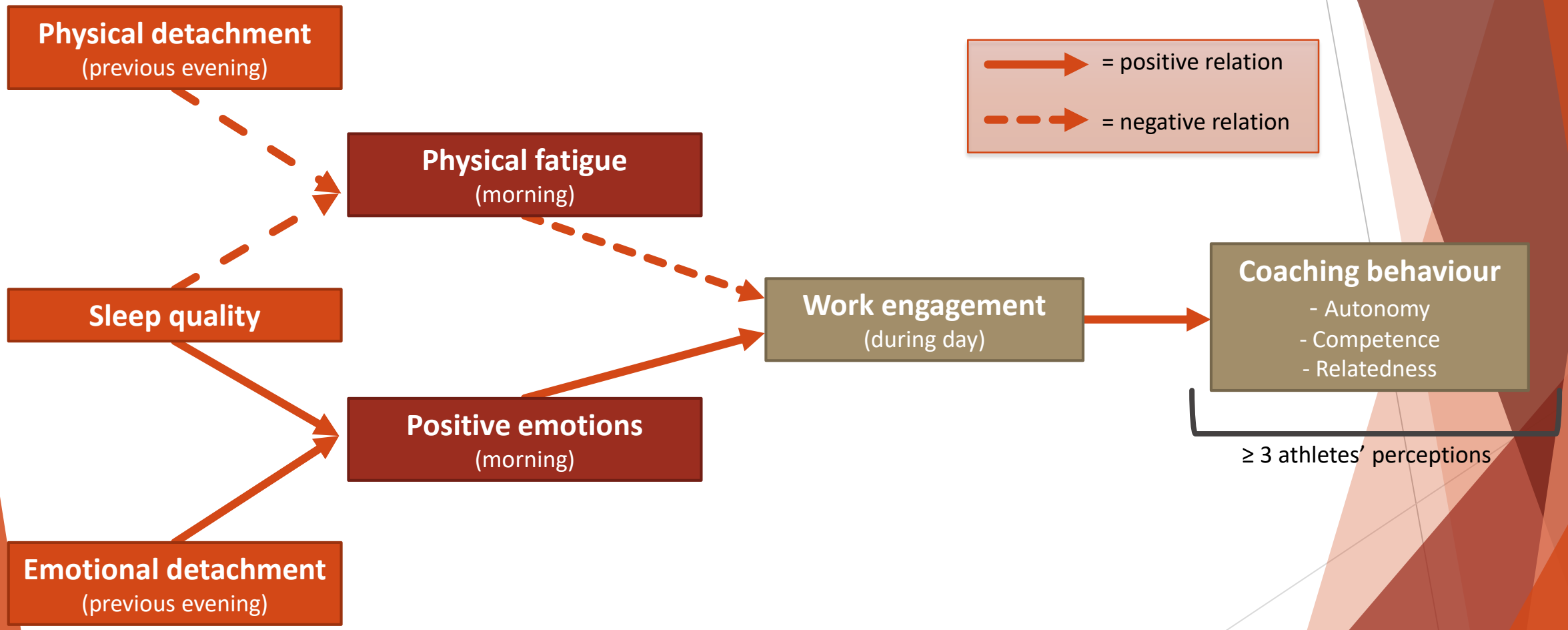
What about coaches' recovery?

- Coach well-being related to autonomy-supportive coaching (Stebbings et al., 2012, 2016)

- Negative influence of coaches' stress/fatigue on athletes' training experiences
  - Less instruction and social support (Price & Weiss, TSP, 2001)
  - Reduced confidence and increased perceived pressure (Thelwell et al., 2017)
  - Higher levels of anxiety and burnout (Vealey et al., 1998)

- A lack of recovery is linked to high stress levels and poor health of elite coaches (Lundkvist et al., 2012)

Coaches (N = 31), 8 consecutive days



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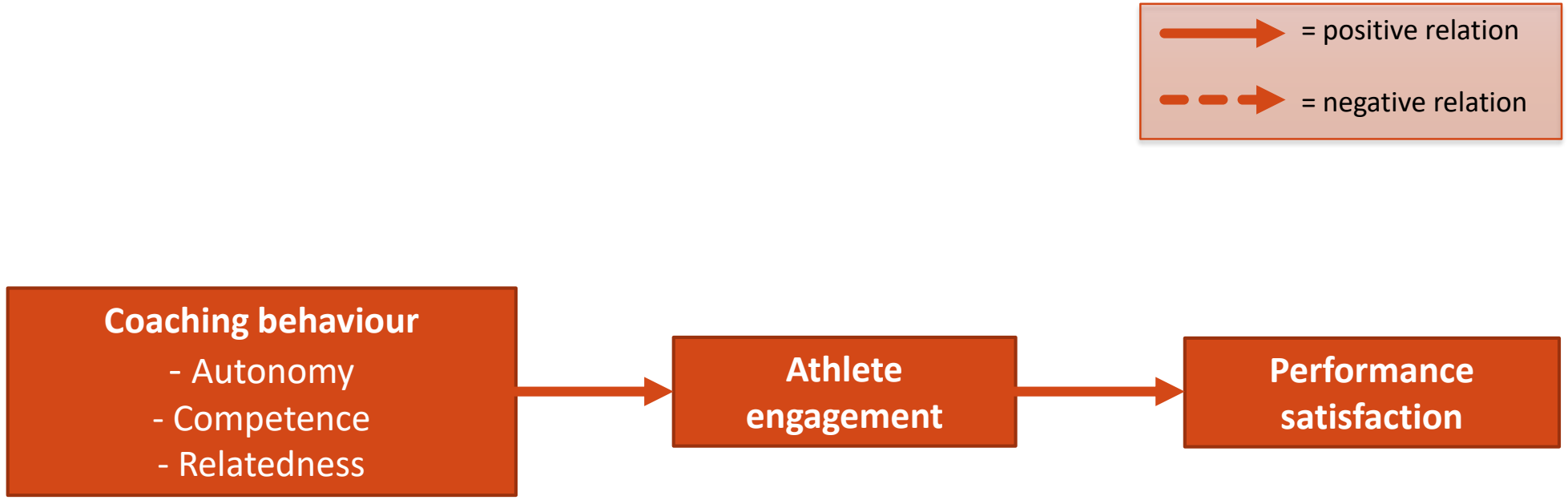
Elite athletes (N = 96), 8 consecutive days



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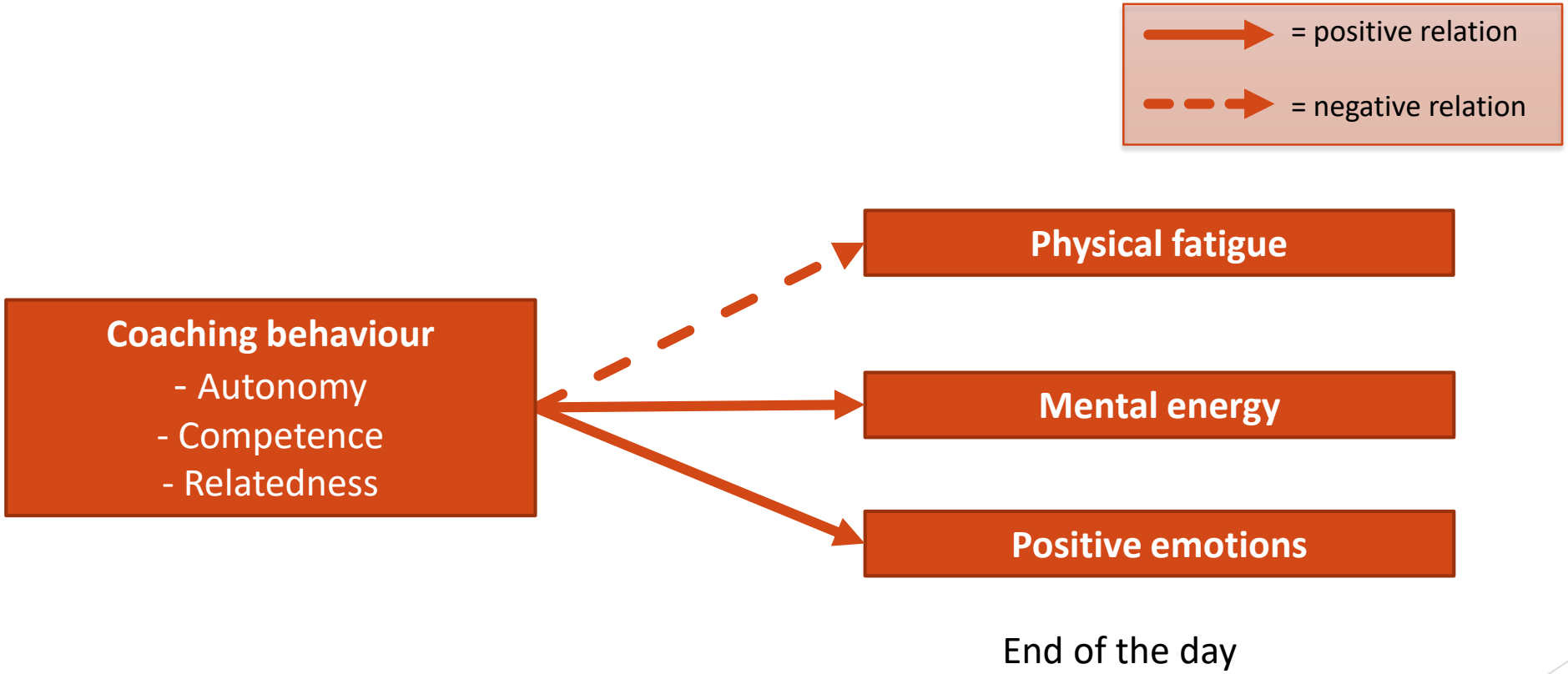
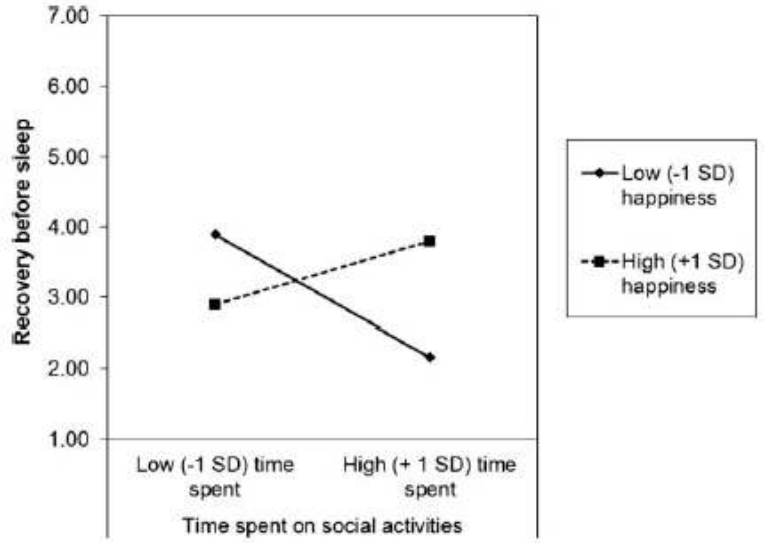
Elite athletes (unpublished data, N = 96)



End of the day

Important aspects related to recovery

- Recovery is specific to the individual and depends on individual preferences
  - Recovery experiences: detachment, mental rest, mastery, autonomy, control, affiliation
  - Subjective experience important aspect underlying effectiveness (Oerlemans et al., 2014)



Self-regulation of recovery

- Achieving ***adequate*** recovery and engaging in activities that restore physical and mental capabilities requires self-regulation (Beckmann & Kellmann, 2004; Sonnentag & Bayer, 2005)
- Individuals find it harder to regulate their thoughts, emotions, and behaviour when fatigued or stressed (Baumeister et al., 2007)
- Negative emotions increase the likelihood of self-regulation failure (Davis et al., 2002; Wagner & Heatherton, 2003)

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CATO: Automated coaching

CATO
Chatbot-Assisted Thriving Optimization

- '24-7' available
- Direct access to knowledge and information
- Monitoring
- Low costs (uses existing platforms like FB and WA)
- Integration with other data possible:
  - Monitoring of more parameters
  - Sleep coaching (using wearables)
  - Nutrition (e.g., advice based on data)

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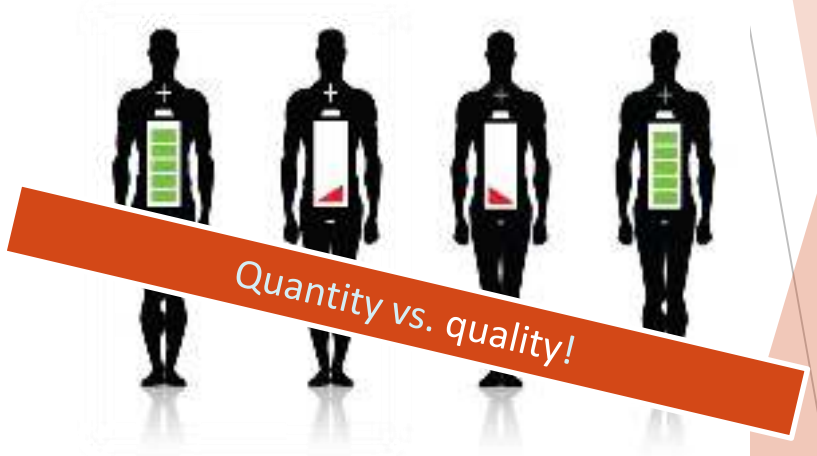
Implications

- Physical and emotional detachment important for **adequate** and **complete** recovery in elite sport

- Need to further develop elite athletes' and coaches' self-regulation skills for optimal recovery
  - Coaching
  - Reflection



- Incorporate recovery activities in training program
  - Consider multidimensional nature ('3 batteries')
  - Both short-term rechargers (e.g. coffee break) and long-term rechargers (e.g. vacation)

Thank you for your attention!

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