Performing under Pressure; on the Biology, Psychology and Sociology of stress in high-performance professions

VIII – TEAM-PERFORMANCE UNDER STRESS

Completion between individuals vs completion between groups

Competition between individuals

- Internal struggle between individuals within the group

- Struggle over excess to mates, recourses and position in the social hierarchy

- In its core, egocentricity

  - Testosterone (its not aggression!!)

Testosterone & interpersonal competition

- Non-linearity

- Testosterone & competition, rather than aggression

- Low levels associated with lower position on the social hierarchy

- Posturing

Crespi, B. J. (2016). Oxytocin, testosterone, and human social cognition. *Biological Reviews*, 91(2), 390–408. https://doi.org/10.1111/brv.12175
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Edwards, D. A. (2006). Competition and testosterone. *Hormones and Behavior*, 50(5), 681–683. https://doi.org/10.1016/j.yhbeh.2006.09.005
Sapolsky, R., & Balt, S. (1996). Reductionism and variability in data: a meta-analysis. *Perspectives in Biology and Medicine*, 39(2).

Intra-group conflict as a backdrop for inter-group competition

- Inter-group competition can, and often does, involve efforts to outdo one another in the extend to which victories are gained against otherwise anonymous members of targeted outgroups.

Intra-group competition

- In-group coordination
  - Teamwork
  - Cooperation
  - Leadership
  - Group-identity

Costly signalling and the free rider problem

- Humans are extremely vulnerable alone but united, we dominate almost any environment we enter.

  - Teamwork serves the group

  - But abstaining from cooperation, while reaping the benefits of the team effort serves the individual most

  - Groups need to control for free riding

    - Costly signalling

      - Hard to fake
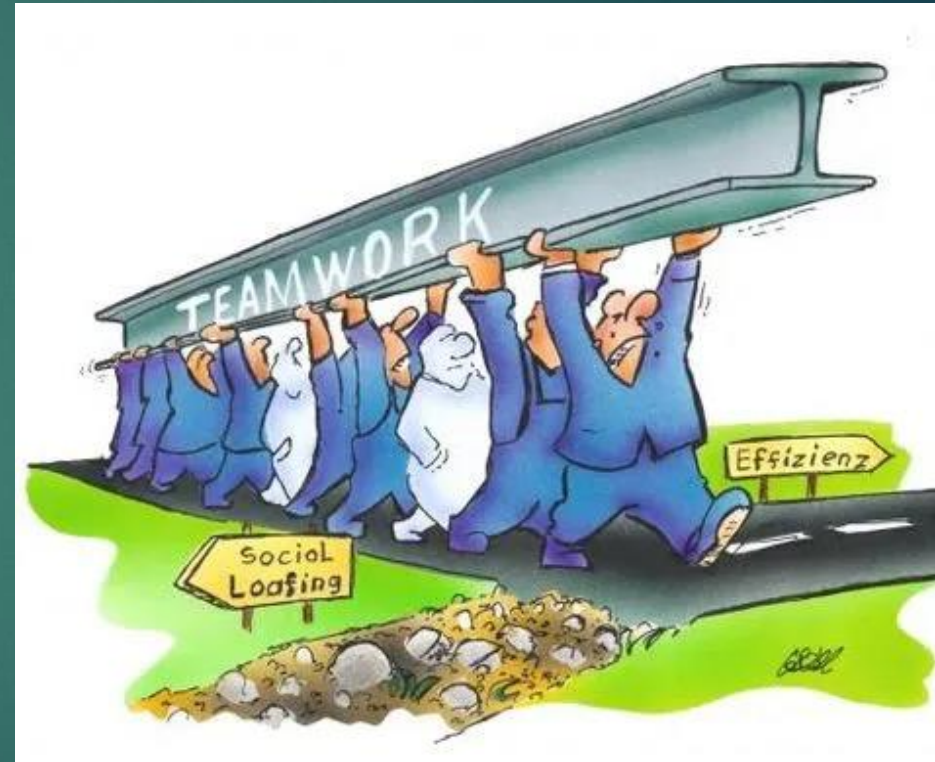
Sosis, R., & Bressler, E. R. (2003). Signaling Theory of Religion. *CrossCultural Research*, *37*(2), 211–239. https://doi.org/10.1177/1069397103251426
Dunbar, R., Barrett, L., & Lycett, J. (2007). *Evolutionary Psychology*.
Sun, S., Johanis, M., & Rychtář, J. (2020). Costly signalling theory and dishonest signalling. *Theoretical Ecology*, *13*(1), 85–92. https://doi.org/10.1007/s12080-019-0429-0

Lying and deceit as an attempt to fake cooperation and health

- Stigmatisation
  - Health cues: Infection, parasites, etc.
  - Social cues: willingness to invest in the collective

- We are NOT naturally truthful!!!!
  - Ad hoc cost / benefit analysis

Levine, T. R. (2014). Truth-Default Theory (TDT): A Theory of Human Deception and Deception Detection. *Journal of Language and Social Psychology*, 33(4), 378–392. https://doi.org/10.1177/0261927X14535916

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McCornack, S. A., Morrison, K., Paik, J. E., Wisner, A. M., & Zhu, X. (2014). Information Manipulation Theory 2: A Propositional Theory of Deceptive Discourse Production. *Journal of Language and Social Psychology*, 33(4), 348–377. https://doi.org/10.1177/0261927X14534656

Leadership, the great undefinable !

- A minimum of 66 different theories on leadership in the expert literature

- Massive methodological issues in the field

- The main problem
  - Philosophical reflection upon phenomenological observations of behaviour in search of universal tendencies
    - Ethics?
    - Transformation?
    - Service?

Alvesson, M., & Kärreman, D. (2016). Intellectual Failure and Ideological Success in Organization Studies: The Case of Transformational Leadership. *Journal of Management Inquiry*, 25(2), 139–152. https://doi.org/10.1177/1056492615589974
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Leadership: an evolved behavioural solution to a specific problem

- Coordinated action
  - Leadership can only exist, where there is a problem to be solved, i.e. a stressor.
  - Leadership effectively modulates stress reactions

- The range of human crises, which require communal action, is so large, that it is not feasible that one behavioural action can produce effective leadership in all cases.
  - Observable behavioural and physiological changes in followers
  - Context related behavioural and physiological changes in leaders

Leadership as an evolutionary tool

▶ A means for coordinating action amongst individuals. For people this is extremely important for survival

▶ Leadership occurs in all human, and some non-human cultures.

  ▶ Follow the first to move

  ▶ Follow the dominant male

  ▶ Follow context related competence

King, A. J., Johnson, D. D. P., & Van Vugt, M. (2009). The Origins and Evolution of Leadership. *Current Biology*, *19*(19), R911–R916. https://doi.org/10.1016/j.cub.2009.07.027

Three levels of analysis

- The leader

- The followers

- Context

Slides 12-16 are based on ongoing research at the Czech University of Defence. For any further information, contact me directly.

The leader

- Perceived relevant competences
- Perceived ressillience (if stress is an issue)
- Perceived value to followers
  - Care
  - Reputation
- Position in the hyrarchy
  - Endorsment by higher authority
  - Convention
  - Previous experience

The followers

- Can be more or less anyone, but must be willing to, temporarily, suspend their individual initiative, in favour of that of the leader.

  - Downregulation of critical faculties

  - Partially passive coping mechanisms

  - A perceived benefit of doing so for the follower, which cannot be achieved as easily in other ways.

Context

- Culture
  - Meaningful symbols, behaviours and competences may be meaningless within other cultural contexts.

- Immediate context
  - What is the immediate issue that is being addressed.

- Perceived risk
  - What are risk-levels involved in the activity at hand and how do followers perceive the behaviour of the leader in response to them.

The main attributes of leadership

- Competence

- Resilience

- Leadership techniques