

# Consequences of Unhappiness While Developing Software

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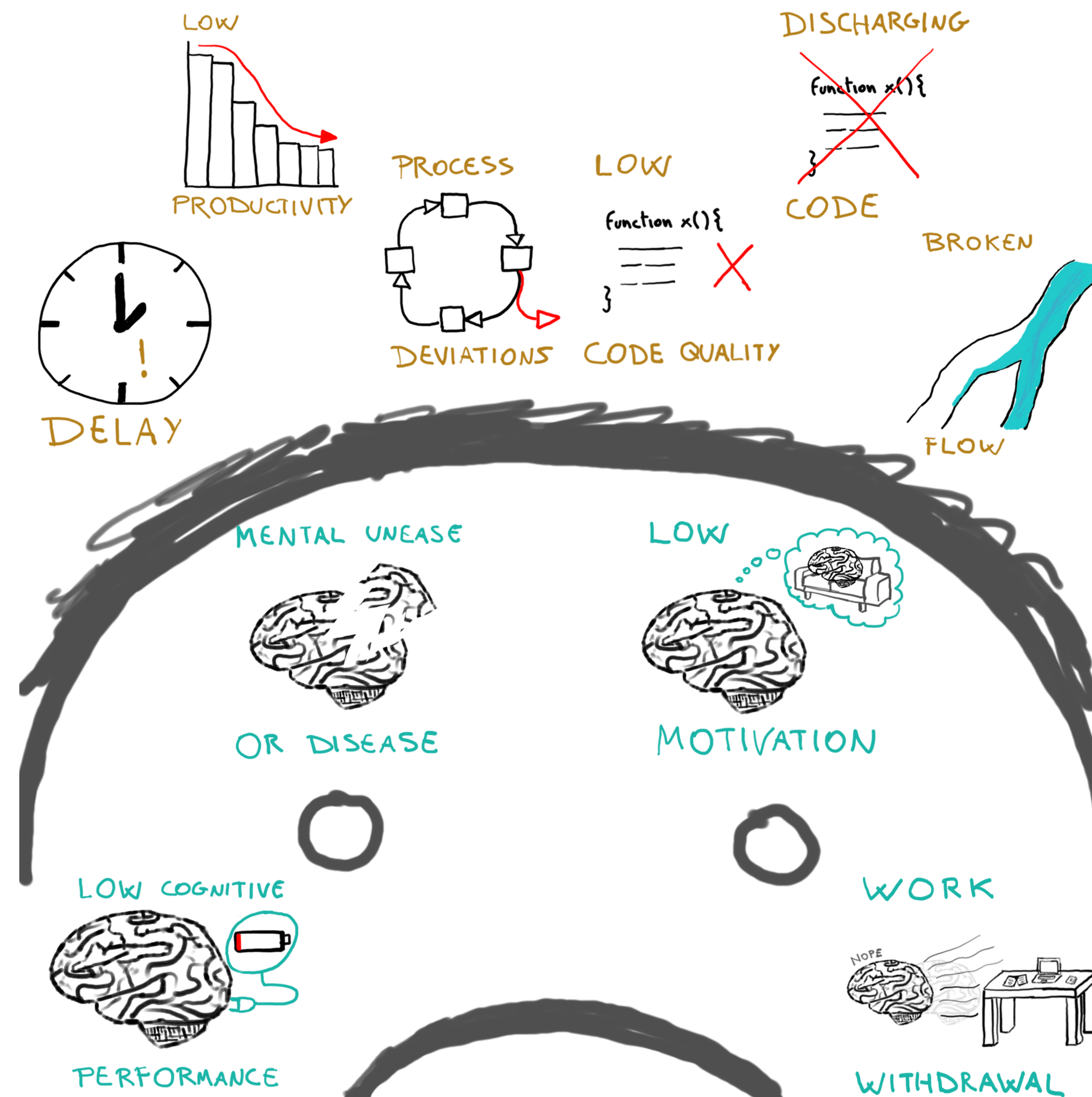
## Summary

- **Context:**
  - Research in software engineering (SE) supports the “happy-productive” thesis [1], and the desire of flourishing happiness among programmers is expressed by practitioners [2].
  - Recent literature suggests to understand and limit *unhappiness* as a cost-effective way to foster happiness and its benefits.
- **Objective:** What are the experienced consequences of unhappiness among software developers while developing software?
- **Method:** Large-scale qualitative/quantitative questionnaire of GitHub developers. Questions on how much happy they are, and experienced causes and consequences on unhappiness while developing software. We present first results on consequences.
- **Results:** 181 valid and complete responses from developers, leading to 49 experienced *internal* and *external* consequences of unhappiness while developing software.
- **Conclusions:**
  - Results raise awareness of the role of moods, emotions and feelings in software development.
  - Classification scheme (openly available) suggests new happiness studies, and it guides developers and managers to foster happiness at work.

## Open Science

The following is openly available [3]:

- Preprints.
- Questionnaire.
- Working example of qualitative coding.
- Qualitative dataset.



## The participants said...

- “[the unhappiness] has left me feeling very stupid and as a result I have no leadership skills, no desire to participate and feel like I’m being forced to code to live as a kind of punishment. [...]”
- “[...] the negative feelings lead to not thinking things through as clearly as I would have if the feeling of frustration was not present”
- “In both cases [negative experiences] the emotional toll on me caused delays to the project”.

## Highlights

- Unhappiness has the highest impact on productivity and performance issues.
- Unhappiness causes issues related to mental health.
- Unhappiness also leads to low motivation among developers as well as work withdrawal, even to the extent of quitting jobs.
- Unhappiness makes developers take shortcuts in the process, often leading to low code quality.

## References

- [1] J M Zelenski, S A Murphy, and D A Jenkins. The Happy-Productive Worker Thesis Revisited. *Journal of Happiness Studies*, 9(4):521–537, 2008.
- [2] D Graziotin, X Wang, and P Abrahamsson. Software Developers, Moods, Emotions, and Performance. *IEEE Software*, 31(4):24–27, 2014.
- [3] Daniel Graziotin, Fabian Fagerholm, Xiaofeng Wang, and Pekka Abrahamsson. Online appendix: the happiness of software developers. *figshare*, 2017. <https://doi.org/10.6084/m9.figshare.c.3355707>.

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## Paper

<https://arxiv.org/abs/1701.05789>

