

■ What happens when software developers are (un)happy

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Introduction

The background is a solid dark blue. It features several decorative elements: a vertical white line on the left side ending in a teal square; a vertical white line in the upper center ending in a small orange square; a vertical white line on the right side ending in a teal square; and various other small squares in teal, orange, and pink scattered across the upper and right portions of the slide.

Why this topic

- Understanding (un)happiness is attractive and important
- Cost-effective ways of improving work and performance
- Essential element of quality, productivity and company success

Why this topic (cont'd)

- Understanding the nature and dynamics of unhappiness
- Prevent dysfunctional responses among employees
- Limiting negative experiences on the job

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Background

What is happiness

Theory of affect and happiness

- Affect is the atomic unit upon which moods and emotions are constructed
- moods are prolonged, unattributed affect
- emotions are interrelated events concerning a psychological object, an episodic process

Theory of affect and happiness (cont'd)

- happiness is a sequence of experiential episodes
- Sequence of negative episodes result in unhappiness

happiness in software engineering

- Theory-building is important and required for research
- Performance Alignment Work theory
- Correlational experiments

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Method

The background is a solid dark blue. It features several decorative elements: a vertical white line on the left side ending in a solid cyan square; a vertical white line near the top center ending in a small white square; a vertical white line on the right side ending in a solid cyan square; and several small squares in cyan, pink, and orange scattered across the right side of the slide.

Sampling strategy

- Software developer, a person concerned with any aspect of the software construction
- GitHub social coding community
- e-mail addresses, given names, company names, and locations of the developers

Survey design

- questions regarding demographics
- Scale of Positive and Negative Experience (SPANE) with 12 items
- 2 questions for experienced causes and consequences of affect when developing

Analysis

- removing empty replies, meaningless replies, replies in other languages than English
- applying open coding, axial coding, and selective coding (Grounded Theory)

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Results

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Categories

- internal category: developer's own being
- Two external categories: process and artifact
- Results of happiness and unhappiness in these categories

Consequences of unhappiness-internal

- low cognitive performance: low focus, fatigue, skill drop off
- mental unease: anxiety, stress, self-doubt, sadness and depression
- Lower motivation, work withdrawal

Consequences of unhappiness-external

- Process: low productivity, delay, decreased process adherence, broken flow
- Artifact: low code quality, discharging code

Consequences of happiness-internal

- high cognitive performance: more focus, higher mental energy, higher skills, better problem solving
- Peace of mind, high motivation, higher creativity and self-confidence, self-accomplishment

Consequences of happiness-external

- Process: high productivity, increased process adherence, sustained flow, doing things right
- Artifact: high code quality

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Conclusion

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Observations

- Reports of consequences of unhappiness in more detail, but more consequences of happiness in total
- similar prevalence across unhappiness and happiness

Observations (prevalence)

- cognitive performance is the most prevalent both in happiness and unhappiness
- The structure is also similar, with 'focus' being the most frequent
- In external categories, productivity and code quality are the most influenced items

Practical result

- All software practitioners, including managers and team leaders
- Enhancing work conditions by utilizing the results
- The consequences offer interesting angles which managers should reflect on

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Thanks for your attention