

TALLINNA TEHNIKAÜLIKOOL UNIVERSITY OF SILESIA IN KATOWICE

**WELCOME!**  
**Quality of Working Life**

TALLINN UNIVERSITY OF TECHNOLOGY

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TALLINNA TEHNIKAÜLIKOOL UNIVERSITY OF SILESIA IN KATOWICE

**Content**

- Fitting dilemma
- Changes in work
- Life priorities
- Work – life balance
- Time
- Time: Types of work arrangement and hours
- Multi-local work and workplaces
- Distribution of activities, tasks
- Mobile and virtual work
- Physical space and location
- Information, Information overload, Information deficiency, Evaluation the information, "Red line" conflict
- Virtual reality
- Demands for employee. Psychological processes, Knowledge, skills, competences and professionalism, Lack of control, Coping
- The new world of work
- Whither W&O psychology in a changing world of work?
- Challenges in W&O psychology
- Work analysis

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**Nature of work**

Work is an activity in which one exerts strength or faculties to do or perform something:

A. ... sustained physical or mental effort to overcome obstacles and achieve an objective or result

B. .... the labor, task, or duty that is one's accustomed means of livelihood

C. .... a specific task, duty, function, or assignment often being a part or phase of some larger activity

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**Nature of work**

- Work is a job or activity that you do regularly especially in order to earn money
- Work is the place where you do your job
- Work is the things that you do especially as part of your job
- Work as an activity involving mental or physical effort done in order to achieve a result
- Work as a task or tasks to be undertaken
- Work (physics), the work done by, or energy transferred by, a force acting through a distance
- Employment, a contract between two parties, one being the employer and the other being the employee

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**Nature of work**

1. The nature of work has changed not only within work categories, which causes variation growth within occupations, but also in ways that increase vagueness in classifying different types of work. Changes in economics and the use of new information technologies have created an array of new jobs and changed how existing jobs are performed. A major effect of information technology on work lies in the fact that it replaces physical activity with mental and analytical activity  
*(National Research Council Staff 1999).*

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**Nature of work**

2. The structure and content of work has been influenced by the changing markets, changing workforce demographics, changing organizational structures, and changing employment relationships. Today's markets demand competitiveness on the basis of quality, innovation and customization *(Appelbaum and Batt 1994).*

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**Nature of work**

3. These changes have caused an increase in technical skill requirements, variations in skills, and the cognitive complexity of work. High-performance (involvement) systems (Way 2002) guarantee quality and innovation through utilizing high skills and through the empowerment and participation of employees in the decision-making processes. This has led to a reduction in the number of job categories and the combining of jobs. Utilization of high skills and participation is warranted by training, performance-based pay, and employment security (Osterman 1994; Kochan and Osterman 1994).

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**Nature of work**

Work has changed in significant ways in four key dimensions:

- ✓ autonomy/control, task scope,
- ✓ cognitive (substantive) complexity,
- ✓ and the relational dimension of work

These are primary concepts that have been used to study the relationship between skills and compensation and other features of jobs

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**Changing nature of work**  
*(Frese, 2008)*

- Dissolution of the unity of work in space and time
- Changing job and career concepts
- Faster rate of innovation
- Increase of complexity of work
- Personal initiative versus adaptability to the new workplace
- Global competition
- Both larger and smaller units of develop
- More teamwork
- Reduced supervision
- Increase of cultural diversity

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### Changing nature of work

(Sundin, Wikman, 2004; Lay, Spence, 2008)

- Demographic changes (aging workforce, migrant workers, more working women)
- New forms of work, rise in precarious forms of work
- Rise in work intensity
- Technological advances
- High emotional demands and interpersonal conflicts
- Impaired work-life balance
- Life-style related problems: obesity, alcohol, drugs

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### Fitting dilemma

WOP has at least two distinct roots (Arnold, Cooper, Robertson, 2010)

**Fitting the man to the job**



**WOP**

**Fitting the job to the man**

*Fitting the man to the job* tradition manifests itself in employee selection, training and vocational guidance

*Fitting the job to the man* tradition focuses instead on the job; and in particular the design of tasks, equipment and working conditions which suit a person's physical and psychological characteristics

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**WORK**  
Work environment





**stimulus reaction**

**Action, behaviour**



Psychological processes

- Perception
- Attention
- Memory
- Emotions
- Thinking

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PSYCHOLOGIA

### Changes in work

1. *Time* – when we work
2. *Physical space and location* – where we work
3. *Information* – with what we work
4. *Virtual reality* – with whom we work
5. *Demands* for employee: psychological processes, knowledge, skills, competences and professionalism, lack of control, communication, networking, coping

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PSYCHOLOGIA

Level	BASICS	WORK	TECHNOLOGY (Techno- psychology)	INDUSTRIAL RELATIONS
Individual	Employee (person) & Personnel Psychology	Employee & Work	Employee & Technology	Employee & New Industrial Relations
Organization	Organization & Organizational Psychology	Organization & Work	Organization & Technology	Organization & New Industrial Relations
Society	Society (community) & Social Psychology	Society & Work	Society & Technology	Society & New Industrial Relations
Legal	Legal Framework	Labor Law, Occupational Health & Safety Law	Techno Law, Intellectual & Industrial Property & Competition Law, ICT Law	Labor Law, Unions' & Work Councils' Laws, Contract Law
Research & Implementation	Research & Implementation Methods	Qualitative & Quantitative Research Methods and Multilevel Analysis Implementation Methods		

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PSYCHOLOGIA

### Time – when we work

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### Time

Work has become independent of the working time

Work does not depend on working hours and the workroom (workplace) and even not on location

*Example:*  
People can work in coffee shop, in bus, at midnight etc.

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### Life priorities

*Example:*

1. Work / study
2. Friends
3. Family
4. Children
5. Wealth
6. Self-development
7. Career
8. Good health
9. Independence
10. Leisure and hobbies

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**Work-life balance**, in its broadest sense, is defined as a satisfactory level of involvement or 'fit' between the multiple roles in a person's life (*Hudson, 2005*)


Work-life balance is a concept including proper prioritizing between "work" (career, ambition) and "life" (health, pleasure, leisure, family, spirituality)

Work-life balance for any one person is having the 'right' combination of participation in paid work (defined by hours and working conditions) and other aspects of their lives

This combination will change as people move through life and have changing responsibilities and commitments in their work and personal lives

Balance between work and non-work (in sense of activities and time)

Higher demand for time management



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**Time**

- Flexible work (more flexible working arrangements and hours)
- Distributed work
- Mobile work
- Virtual work

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**Time: Types of work arrangement and hours**

In today's workplace, there are a variety of different working arrangements (more flexible working arrangements)

**Full-time** usually means you work 40 hours a week, but may mean 30 hours or more a week. Start and finish times may vary depending on what suits you and your employer. For example, a parent might start early and work shorter hours so they can finish in time to pick up their children from school. Full-time employees sometimes work shifts, and may work outside of standard business hours. These shifts may be set hours, or change from week to week

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**Time: Types of work arrangement and hours**

**Part-time** work mean a person works a set amount of hours each week, which can range from just a few hours up to about 30 hours. For example, a student might work every Saturday for eight hours to help with study costs. Part-time work gives you a steady income, but also allows you time to do other things. It's a good option if you have children or other family members to look after, want to study, or have another job that you love, but that gives you only irregular work

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**Time: Types of work arrangement and hours**

**Casual** workers are usually hired for one-off business needs or ongoing, irregular work. For example, a retail store may need extra help over the Christmas period and hire some casual staff for the month of December. Casual work can lead to permanent work and is a good way to meet people in the industries you're interested in working in

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**Time: Types of work arrangement and hours**

**Seasonal** work can only be carried out at certain times of the year. It's important to some of big industries: forestry, agriculture and horticulture. Seasonal workers perform jobs that can only be carried out at certain times of year. They may also move around the country following the seasonal work opportunities as they arise throughout the year

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**Time: Types of work arrangement and hours**

**Contract work** - contractors are similar to casual staff, but are usually contracted to do a particular piece of work. They will often bring specialist skills that an organization needs for specific projects. For example, a business may contract in a management consultant to help with restructuring. Contractors can be self-employed, or can work through an agency or business. Contractors will often be employed for only a fixed amount of time

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**Time: Types of work arrangement and hours**

**Self-employment** is very common in a wide range of industries and occupations. You can find self-employed people working as courier drivers, plumbers or accountants. The nature of self-employment also varies. You may work on contract to different people to complete work, or you may have your own business, and employ other staff

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**Time: Types of work arrangement and hours**

**Working from home** - with the improvement in telecommunications, many employers offer staff the opportunity to work off-site, usually from home, for some or all of their work week. Staff are able to keep in regular contact with their boss and other staff through email, as well as Internet calling services. They may also visit the office on a regular basis. Working remotely can be a good option for people who want to live away from cities, but do not want a long commute. It also allows you more flexibility with your hours, though you need to discuss the details with your employer

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**Time: Types of work arrangement and hours**

**Portfolio work** – it means working for different employers in two or more part-time roles. This can include freelance or contract work and self-employment. Together, these jobs add up to full-time work. The work you do could be in quite different fields. You need to be motivated to do portfolio work, as you will need to be constantly on the look-out for jobs that you can pick up

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**Physical space and location – where we work**

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**Distributed work**

**Multi-local work and workplaces**  
**Distribution of activities, tasks**

Many workers communicate regularly with distant coworkers; some monitor and manipulate tools and objects at a distance. Work teams are spread across different cities or countries. Joint ventures and multi-organizational projects entail work in many locations

Distributed work alters how people communicate and how they organize themselves and their work, and it changes the nature of employee-employer relationships (*Hinds, Kiesler, MIT Press, 2012; Vartiainen, 2007*)

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**Mobile and virtual work**

In 2012, the definition of mobile worker has expanded to include pretty much everyone in the organization

Mobile working is about freedom and simplicity

New technologies are making it easy to access information and work regardless of location

Virtual communication  
Virtual teams  
Virtual networks

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**Distributed work**  
**Multi-local work and workplaces**  
**Mobile and virtual work** (Teichmann, 2013)

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N = 103 SM employees  
Rate of study (86.4%) SM employees

Job Role	Percentage
Peaspetsialist	1.90%
Spetsialist	2.90%
Juhataja, juhataja kt	21.40%
Nõunik	45.60%
Auditor	8.70%
Raamatupidaja	5.80%
Referent	13.60%

Research methods: Observation; Analyse of Work Descriptions, Questionnaire

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Work was classified in the following categories for observation protocol:

- 1 - does not work
- 2 - computer work
- 3 - meeting a colleague
- 4 - meeting the client
- 5 - piece of writing / reading hard copy documents, folders work, printing, copying
- 6 - calling (including Skype)
- 7 - other (e.g. eating, combing, dressing, newspapers and magazines, surfing the Internet, doing nothing)

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**Observation study**  
**The use of WORKPLACE in office**

The workspaces are **NOT** used by an average of **43%** of SM employees per one working day

Tegevus	N	% kõikidest vaatlusjuhtudest (keskmine)	SD (standardhälve)	Median	Min	Max
2-arvutiga töö	103	37.9%	18.6%	38.2%	0.0%	78.2%
1- ei ole kohal	103	26.4%	13.9%	27.3%	0.0%	70.9%
0-puudub kogu päeva	103	16.6%	27.5%	0.0%	0.0%	100.0%
3-koosolek "kolleegiga"	103	8.8%	7.1%	7.3%	0.0%	32.7%
6-helistamine	103	4.9%	4.3%	3.6%	0.0%	25.5%
5- kirjatöö/lugemine, kolimine, kaustadega tegelemine, printimine, kopeerimine, (paberikandjad)	103	4.1%	5.2%	3.6%	0.0%	23.6%
7- muu (nt söömine, kammimine, riietumine, ajalehtede ja ajakirjade sirvimine, ei midagi tegelemine jms)	103	1.2%	1.9%	0.0%	0.0%	9.1%
4- koosolek „kliendiga“	103	0.1%	0.4%	0.0%	0.0%	3.6%

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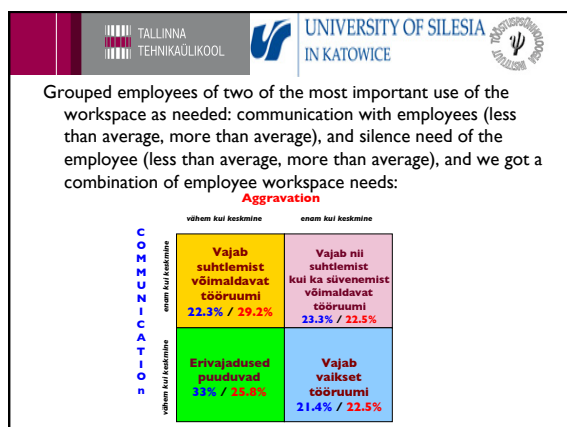
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**Difference between questionnaire & observation study (Chi-ruut testi ehk  $\chi^2$  - test;  $p < 0.03$ )**  
**The use of WORKPLACE for different tasks**

Tegevus	Subjektivne hinnang % töötajatest, kes hindas küsitluses 4 = pigem suurel määral 5 = suurel määral 6 = väga suurel määral	Vaatlustulemus % kõikidest vaatlusjuhtudest (keskmine)
Arvutiga töö	94.4%	37.9%
Koosolek kolleegiga	38.2%	8.8%
Koosolek kliendiga	24.8%	0.1%
Kirjatöö / lugemine, paberikandjal dokumentidega, kaustadega töö, printimine, kopeerimine	34.8%	4.1%
Helistamine (sh Skype)	55%	4.9%

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**Two profiles of office workers**

Rotated Component Matrix

	Component	
	1	2
1- ei ole kohal	0.179	0.584
2- arvutiga töö	0.714	0.04
3- koosolek „kolleegiga“	-0.023	0.773
4- koosolek „klienidiga“	-0.271	0.567
5- kirjastöö/lugemine, kaustadega tegelemine, printimine, kopeerimine, (paberakandjad)	0.634	-0.132
6- helistamine	0.454	0.421
7- muu (nt söömine, kammimine, riietumine, ajalehtede ja ajakirjade sirvimine, ei midagi tegemine)	0.372	-0.003

Extraction Method: Principal Component Analysis  
Rotation Method: Varimax with Kaiser Normalization.

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**Two profiles of office workers**

**Profile 1:** Increasing employee - a job that requires no more aggravation, and less interaction (work computer, the writing / reading the folder with the handling, printing, copying, paper and media). This environment is characterized mainly by the use of profiles in your workplace (office) development, as well as dealing with other things (eg, eating, combing, dressing, newspapers and magazines, surfing the Internet, doing nothing is not). Communicates by telephone (call)

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**Two profiles of office workers**

**Profile 2:** Interacting with the employee - a job that requires more interaction than aggravation meeting "colleague" and the meeting of the "client". This environment is characterized by the use of me not to stay in his job, very little work on the computer, no longer staying away from their place of work (the workroom). Communicates by telephone (call)

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### Physical space and location

Employees have many methods, such as emails, computers and cell phones, which enable them to accomplish their work beyond the physical boundaries of their office. Employees may respond to an email or a voice mail after-hours or during the weekend, typically while "not officially on the job."  
 Researchers have found that employees who consider their work roles to be an important component of their identities will be more likely to apply these communication technologies to work while in their non-work domain (Boswell, Olson-Buchanan, 2007)




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### Information – with what we work

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### Information

**Information overload** is becoming a serious drag on productivity  
 56% of workers are overwhelmed by multiple simultaneous projects and interrupted too often; one-third say that multi-tasking and distractions are keeping them from stepping back to process and reflect on the work they're doing  
*Example:* Monday morning' emails

**Information deficiency**  
 Simultaneously, it is not easy enough just to find the information people need to do their jobs  
 Industry analysts estimate that information workers spend up to 30% of their working day just looking for data they need

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### Information

**Evaluation the information**

- Validity
- Reliability
- Accuracy
- Relevancy
- Authority
- Currency
- Point of View
- Objectivity
- Triangulation
- Manipulations
- Stereotypes, emotional language, logical mistakes etc.
- Information source



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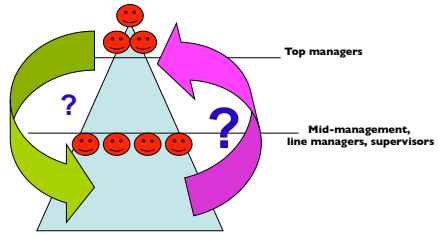
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### Information

**"Red line" conflict**



The diagram shows a pyramid with three levels. The top level has three red circles with sad faces, labeled 'Top managers'. The middle level has four red circles with sad faces, labeled 'Mid-management, line managers, supervisors'. A green arrow on the left points from the top level down to the middle level, with a question mark. A purple arrow on the right points from the middle level up to the top level, also with a question mark.

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### Virtual reality – with whom we work

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### Virtual reality

“Real life” versus “virtual life”

*Examples:*  
 Virtual work  
 Virtual teaching and learning  
 Virtual doctor  
 CV-online  
 E-government  
 E-library  
 E-shop etc.

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### Monday morning e-mail syndrome

Two main strategies for coping with *Monday morning E-mail syndrome*:

- 1) to be “always-online”, “always accessible” and “always ready to react and to work”
- 2) to check E-mails during the weekend several times (once per day, twice per day, every hour etc.)

Almost all interviewed academics were forced to use the both coping strategies but sometimes it was not just possible to check E-mails

If you do not allow for this work demand feeling guilt during the weekend as well as *Monday morning E-mail syndrome* as an occupational psychopathology appears

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### Monday morning' E-mail syndrome

#### 1. Fears

**Fear** – worry, alarm, be afraid of something, disorientation, stress, panic

**Fear** was a feeling of anxiety concerning the outcome

*The roots of occupational psychopathology:* Poor management; Excessive reorganizing, restructuring e.g. organizational change; Ambiguous work instructions (demands), additional tasks, administrative responsibilities; Different type of reports; Dealing with multiple tasks simultaneously; Students do not give positive feedback for teachers' effort (does not praise for well done work)

#### 2. Anxiety, negative emotions, depressive thoughts

**Anxiety** was a feeling of worry, nervousness, or unease about something with an uncertain outcome

*The roots of occupational psychopathology:* Permanent need for self-improvement and life-long learning; Students do not give positive feedback for teachers' effort (does not praise for well done work); Relationships with administrative staff; Conflicts and/or inadequate conflict solving

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### Monday morning' E-mail syndrome

#### 3. Paralysis (incl. analytical paralysis)

**Paralysis** = the loss of the ability to react, person do nothing  
 While the employee is physically at work, but mentally absent  
 A typical verbal expression: "It is perhaps not with me"  
 Replies to hear, but do not accept  
 (the so-called **analytical paralysis**),  
 interprets the sort of explanations



*The roots of occupational psychopathology:* Evaluation of students' performance; Involvement in decision making and personal responsibility; Quality of work

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### Monday morning' E-mail syndrome

#### 4. Professional identity

✓ **Decrease of professional identity** = a close similarity or affinity, professional inclusion, feeling belongingness, strong feeling of "we" and "our"

*The typical expression:* "An academic job is totally change"  
 Employee may feel they are a victim of something and trying to get sympathy from others



*The roots of occupational psychopathology:* Professional identity; Low prestige of academic position; Commercialization of science and education; Knowledge and skills are not valued in society; Low appreciation of academic position

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### Conclusions

- Changes in the work have **blurred** boundaries between work and non-work. Work does not depend on working hours and the workplace, and even not on location. More than ever the work became "modus vivendi" for academics.
- It established higher demands for academics to be "always-online" and "always ready to react and to work".  
**Interruptions in non-work time** (family, friends, leisure, hobbies etc.) **have become common**

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**Conclusions**

3. A person-technology interface created a new and specific phenomenon in work environment *Monday morning' E-mail syndrome* which allows identification of the three symptoms *i.e.*

- ✓ fears
- ✓ anxiety (incl. negative emotions, depressive thoughts, panic);
- ✓ paralysis (incl. analytical paralysis);
- ✓ professional identity



It followed the theoretical framework suggested by psychopathology literature

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4. In interviews the academics described *Monday morning E-mail syndrome* in terms of sources of pressure (roots of syndrome) similar to those that appeared in the occupational stress survey **but** there were added the emotional dimension (fear and anxiety, negative emotions towards own work, loss of professional identity etc.) that manifests itself **throughout** occupational psychopathology

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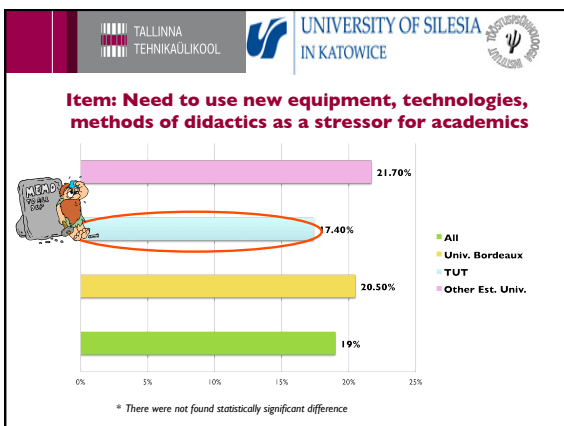
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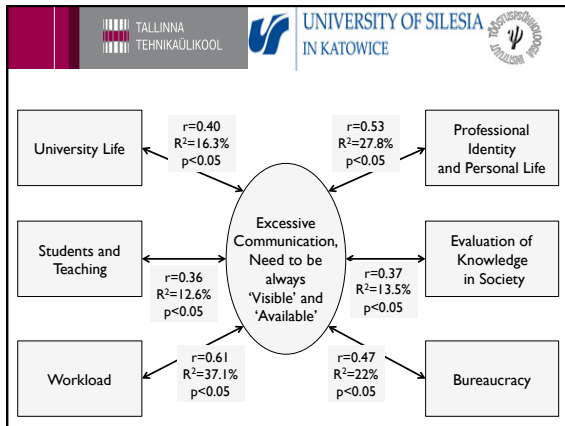
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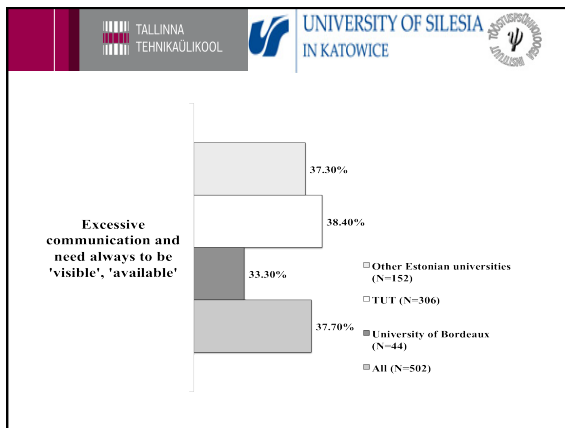
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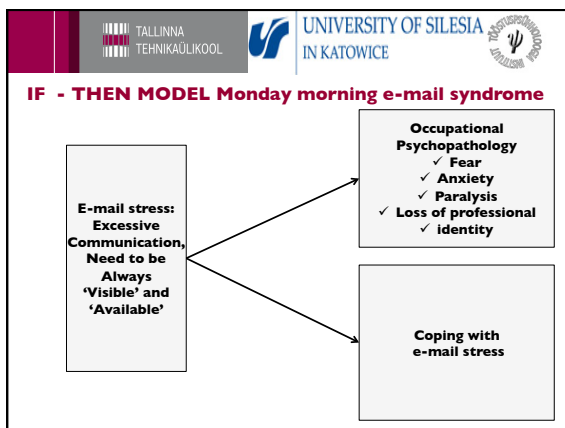
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**Demands for employee**

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**Demands for employee**

*Psychological processes*

- Perception
- Attention – selection, divided attention



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**Demands for employee**

*Psychological processes*

- Memory – short time memory, operative memory
- Emotions – positive emotions at work, expression of emotions at work, in virtual communication



- Thinking – how using the technology changing the patterns of thinking

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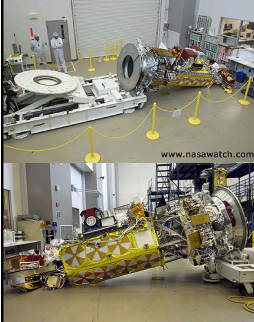
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### Psychological processes and human error



- SAN JOSE, California (AP) -- A \$239 million satellite toppled to a factory floor last year because nobody bothered to check that it was secure before moving it, according to a NASA investigation board's report on the mishap.
- The NOAA N-Prime satellite fell about 3 feet as it was being moved from a vertical to a horizontal position on September 6, 2003, to remove an instrument at a facility in Sunnyvale, Calif. **Nobody noticed that the 24 bolts that should have secured the spacecraft were missing.**
- It will cost an estimated \$135 million to rebuild the spacecraft's main section and two damaged instruments. No one was injured in the incident.

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Psychology

### Psychological processes and human error



- CD-player  
BMW 745i

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Psychology

### Demands for employee

**Knowledge, skills, competences and professionalism**

- I know
- I guess
- I believe

No longer necessary knowledge & skills



Necessary knowledge & skills

Not yet necessary knowledge & skills

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PSYCHOLOGIA

### Demands for employee

**Lack of control** - perceptions of control in the immediate work environment

External and Internal Locus of Control, as identified by Julian Rotter in the 1950s, can be defined as the way in which an individual accounts for the successes and failures he experiences. If he bases his success on his own hard work and intrinsic motivation, he is exhibiting an Internal Locus of Control. If, however, he attributes his success or failure to outside influences, he is exhibiting an External Locus of Control

*Locus of control* reflects a person's belief in personal control in life (internality) rather than in control by outside forces or individuals (externality) (Spector et al., 2002)

**Correlations with**

- job satisfaction
- psychological well-being
- physical well-being

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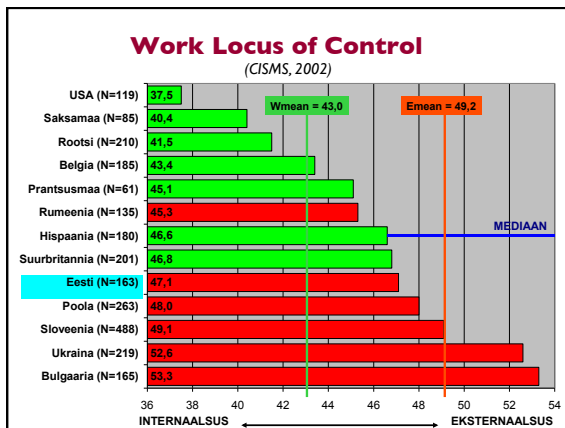
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PSYCHOLOGIA

### Demands for employee

**Coping** - is thus expending conscious effort to solve personal and interpersonal problems, and seeking to master, minimize or tolerate stress or conflict; constantly changing cognitive and behavioral efforts to manage specific external and/or internal demands; constantly changing cognitive and behavioral efforts to manage specific external and/or internal demands




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**Demands for employee**

*Coping strategies*

- adaptive coping or constructive coping
- maladaptive coping or non-coping

**fight or flight reaction**



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**The new world of work**  
*(Bill Gates, 2005)*

A generation of young people who grew up with the Internet is entering the workforce, bringing along workstyles and technologies that feel as natural to them as pen and paper

Over the next decade, we see a tremendous opportunity to help companies of all sizes maximize the impact of employees and workgroups, drive deeper connections with customers and partners, enable informed and timely decision-making, and manage and protect critical information

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**Whither W&O psychology in a changing world of work?**  
*(Cascio, 1995)*

- Effects of technology on organizations and people
- Changes in the structure and design of organizations
- Changing role of manager
- Empowering worker
- Selection
- Training
- Performance

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**Challenges in W&O psychology**

- redefinition the "work" itself
- meaning of work, attitudes toward work, identification with work
- boundaries between "real life" versus "virtual life" and "real work" and "virtual work"
- psychological "needs" in virtual reality i.e. need to express own' emotions
- information overload versus information deficiency and "the global village" phenomenon
- improvement a personal productivity i.e. "always-on" work environment, prioritizing, interruptions at work
- organizing the work incl. change management
- boundaries between work and non-work i.e. work / life balance
- coping with new and newer technologies i.e. human errors
- creativity and innovation
- occupational stress
- performance and quality of working life etc.

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**Work analysis & Activity theory**

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**Work analysis**

**Work analysis** has referred to the process of gathering, analyzing, and structuring information about a job's components, characteristics, including environmental contexts, and job requirements (Gael, 1988; Levine, 1983; McCormick, 1976)

Recent changes in the dynamic nature of current work assignments have led some to announce 'the end of the job' as a fixed and stable set of predetermined responsibilities (Bridges, 1994)

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**Classification of occupations**

International Labor Organization (1921, ILO) detected the need to establish an international classification of occupations

The *Uniform International Classification of Occupations* was first produced by the ILO in 1958 (*International Labor Organization, 1991*), and it is updated every 10 years

The classification serves the purposes of facilitating cross-country statistics, occupational migration patterns, and helps in developing national classifications. Thus, countries have the need to develop 'cross-walk maps' that allow them to turn their national occupational codes into those used by the ILO's classification

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**Classification of occupations**

- ✓ International Labor Organization (1921, ILO) detected the need to establish an international classification of occupations
- ✓ The *Uniform International Classification of Occupations* was first produced by the ILO in 1958 (*International Labor Organization, 1991*), and it is updated every 10 years
- ✓ The *Dictionary of Occupational Titles (DOT)* (*US Department of Labor, 1977*) has been the national occupational classification system in the US
- ✓ The Occupational Information Network or O\*NET is a new classification effort sponsored by the US Department of Labor; automated database and a set of ready-to-use instruments for collecting, describing, storing, and disseminating reliable and valid occupational information (*Peterson, Mumford, Borman, Jeanneret & Fleishman, 1999*)

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**Job analysis**

Job analysis can be said to involve four facets or 'building blocks' (*Levine, 1983; McCormick, 1976*):

- 1) the type of information to be collected
- 2) the source of information to be employed
- 3) the method of collecting information
- 4) the level of analysis or detail to be observed in the analysis

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**Task and Demands Analysis** (Rohmert, 1988;  
*Arbeitswissenschaftliches Erhebungsverfahren zur Tätigkeitsanalyse - AET*)

AET examines the degree of adjustment between the incumbent and the job

Its focus is on ergonomic stress or the extent to which job demands provoke the experience of stress on the incumbent. To evaluate stress, the AET examines the technological, technical, ergonomic, and organizational design where the incumbent works

AET methodology involves a 216-item questionnaire

American methodologies focus on maximizing performance by identifying an incumbent that best fits the job requirements

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**Work analysis & Activity theory**

AT is an approach to human science which is fundamentally different in its outset, than traditional western sciences

AT emerged as a reaction to the gap between the materialistic view and the idealistic view of human life

In **traditional psychology human behaviour** is interpreted either within the framework of idealistic concepts or along the lines of materialistic and natural science tendencies. This divides psychology into a natural science on the one hand, and psychology as a science of the spirit on the other (Leontjev, 1978)

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S --> O: The idealistic view sees the subject as determining the objective element. Psyche is viewed from the inside, as something subjective.

O --> S: The materialistic view sees the subject as being determined by the object. Psyche is viewed from the outside, as something objective  
(Engelsted 1991)

- ✓ Activity Theory is a unique attempt to overcome the gap between the materialistic view and the idealistic view
- ✓ AT mediate this gap through the concept of the subject's Activity
- ✓ Activity is a fundamental theoretical concept in the analysis of the relationship between humans and reality

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**Work analysis & Activity theory**

The original foundation of Activity Theory was laid down by Vygotsky (1920-30) as the Cultural-Historical School. His work was continued by A.N. Leontjev and Luria, who developed his ideas further and started to use the term Activity Theory.

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**Work analysis & Activity theory**

Traditional explanations of human behaviour is often in terms of needs, drives or instincts (e.g. Freud and Maslow). Behaviorism tries to apply the mode of explanation used in classical physics: they explain human activity as a 'cause-effect relation' (S->R) which sets this organism- mechanism into motion. The positivist 'cause-effect relation' explanation is, however, only valid within mechanical relations in the science of nature where there is a direct and immediate connection between cause and effect. It has no validity within psychology, where there is a need for concepts which are beyond the reflection of immediately observable relations: developmental concepts or historicity (Engelsted 1989, I).

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**Work analysis & Activity theory**

These explanation, however, have significant methodological problems (Leontjev 1978). An object is taken as a 'thing', which is independent of activity. The reality is then divided into a world of stimuli ('things') acting on a subject, and a world of responses. They assume that motivational factors are objective in the sense that they exists independently of human actions as causal or determining factors.

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**Work analysis & Activity theory**

In order to eliminate the methodological problem Leontjev introduced the category of object activity. With the principle of object-relatedness the opposition between the world of stimuli and the world of responses is eliminated. The subject and the object are viewed as poles of a single integral system, a system of activity, which emphasises the active nature of man.  
**The subject understands an object** as that toward which an act is directed - **as the object of its activity**. The concept of object is implicitly contained in the concept of Activity

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**Work analysis & Activity theory**

The expression 'objectless activity' is without any meaning. Any object can become a motive and acquire a 'character of a requirement', but only when it enters into a system of activity. The phenomenon of object-relatedness 'disappears' as soon as an object is taken out of the context of an activity (Leontjev 1978). This alternative theoretical approach comprises a more adequate methodological foundation for psychology as a whole (Asmolov 1987).

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**Work analysis & Activity theory**

The theory of Activity focus on the principle of activeness.  
The activeness of the subject is a necessary internal aspect of its life-development.  
Human life is per definition active. Life is a relation in which the one side (the subject) actively relates to the other side (the object).  
Behaviour can only be understood against these basic principles of life. It is a purposive striving: the subject does something to achieve something (Engelsted 1991)

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**Work analysis & Activity theory**

The subject acts through the object, whereby the subject itself is undergoing changes in the process. Leontjev (1978) has illustrated this through his analysis of the development of needs or motives. Also cognitive and mental processes are creative and productive, generating a mental image. Neither remembering nor perception are merely passive responses based on memory traces and patterns fixed once and for all in the nervous system. These processes are always a construction of movements, not their repetition.

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**Work analysis & Activity theory**

Defining actions and operations on the basis of the functional structure of the activity, means that one and the same action may accomplish various activities: a given action may have completely different motives, i.e. to realize completely different activities, in which case the different motives will cause the action to have different personal sense for the subject. For instance operating a computer can be a playing -, learning - or a working activity.

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**Work analysis & Activity theory**

**Activity** can be transformed into an action. An example is learning to use a computer. Initially this is an activity, i.e. a motive in itself. But later 'using the computer' is converted into an action realizing a different activity: writing a letter. The learning activity has lost its motive (learning to use a computer) and is transformed into an action with a sub-goal realizing a different activity/motive: to write a letter.

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**Work analysis & Activity theory**

**Action** can become a separate activity. For example, handling the computer (in order to write a letter) can be transformed into another activity: designing better computer systems. Through the action (writing a letter) a new interest or motive may develop concerning the functionality of the computer itself. The person may then start a training course in order to become a HCI designer. Thus the action has been transformed into an independent activity, i.e. shift of the motive towards the goal. The mechanism of the formation of realised 'motive-goals' is one of the mechanisms of the formation of new types of human activity in ontogenesis.

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**Work analysis & Activity theory**

Analysis of activities requires both an explanatory and descriptive (observational) method of study. Work activities are usually highly structured and involve tasks whose goals are predetermined and explicit. That means it is possible to start with behavioural definitions and classifications already existing in the work place. Observational methods are needed to determine what tasks are central to particular occupations, to describe their features and discover the constraints the setting imposes. Direct observation of people carrying out their job under normal working conditions, involves informal chats, informal interviews and causal observation (Low Aboulafia, A., 1994)

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**Work analysis in changing environment**

Due to changing technology and markets, job analyses may need to be conducted in situations where jobs do not already exist such as when a new business is started or where jobs are changing dramatically as might result from moving to an electronic commerce environment (Fried, Levi, Laurence, 2001)

Strategic work analysis should be proactive in the sense that, in addition to forecasting future work requirements, it should ensure the presence of the KSAOs needed to accomplish the strategic goals of the organization

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**Work analysis in changing environment**

The need for competency modeling has been questioned (*Barrett & Callahan, 1997; Pearlman, 1997*)

In closer examination, the main difference between job analysis and competency modeling may lie in the level of analysis, with competencies being broader human attributes than traditional knowledge, skills, and abilities (KSAs)

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**Thank You!**

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