

To get started and keep a clear thinking and be ready in time

Basic Management of Research
Projects

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Presented on: <http://pulsro.se/eng/>

Who is Rune Olsson?

- PhD in Solid State Physics 1971
- Trained PhD-students and Researchers in Project Management and Creativity and Stress control since 1985
- Course titel: "How to get started and be ready in time" or "Basic Management of Research Projects"

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Go to: <http://pulsro.se/eng/> for pdf-prints

Nothing special today

- **If** you recognize the methods I present and **if** you follow these methods, **then** be happy that you have good methods.
- Always follow a good method and strive to improve it
- Improve by "Rethink after"

The most effective way to become a better researcher: **Rethink after**

- Rethink after work is done: each week, end of project, study, experiments etc
- Consciously reuse the methods that have yielded results
- Ask yourself evaluation questions, like:
- What do I know now that I did not know before? How have I learnt this?
- What made me reach this result?
- What has worked well? Repeat this: What? When? How? Who?
- When I was stuck, how did I find a way to go further?

- What can be improved?
- Change → find how to control?
What? When? How? Who?
- When should I think about this next time?

Summarize:

- My good ways of working are: (make a long list)
 - I can use this methods at (state next time)
 - When things go wrong I can do this
in order to proceed (plan B, emergency brakes)
- When should I think about this next time?

Important question!

**How do you know that you
have done**

GOOD WORK

at the end of the day?

In order to get this Three things today

- Negative stress stops the neocortex brain to work openly
- Positive stress opens the mind.

- 1 Making plans: WBS. To keep control
- 2 Dealing with risks. To be able to be prepared
- 3 Dealing with stress. To keep on open thinking

To start a TIME-oriented project

Step by step

With a time plan

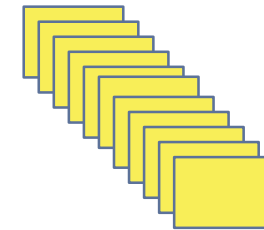
- You have a way of measuring results
- Some say: "But I know so little about what to do. It never goes as planned. So it's a waste of time."
- Ask instead: What do I need to know to be able to make a rough plan?

Find this!

The Murphy-law on projects

- A carefully planned project takes max twice as long.
- A poorly planned project takes more than three times as long.

Post-it-notes
the most important tool
for project planning



SPP – Scania Project Planning: make trucks and busses



The STEPS in PLANNING What, When, Who and How

- WHAT
 - Goal, objectives: **Break down the work in handible pieces (WBS)**; Logical order
- WHEN: TIME
 - Ready when? **Milestones!!!**
 - Resources: needed and available
- WHO
 - Kompetences needed?
 - **Stakeholders**
- HOW
 - **Risk analysis**
 - Communication plan; system for dokumentation;

WHAT

1 Get the big goal from the taskmaster/supervisor.

2 Divide this goal in two:

- Purpose-goal and
- Effect-goal

What are you aiming at?

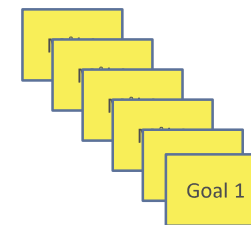
What shall be achieved?

3 Break down the effect-goal to working packages (activities).

Write the “working packages” on post-it-sheets

Work Breakdown Structure

1 The big and small goals Write down on seperate post-it

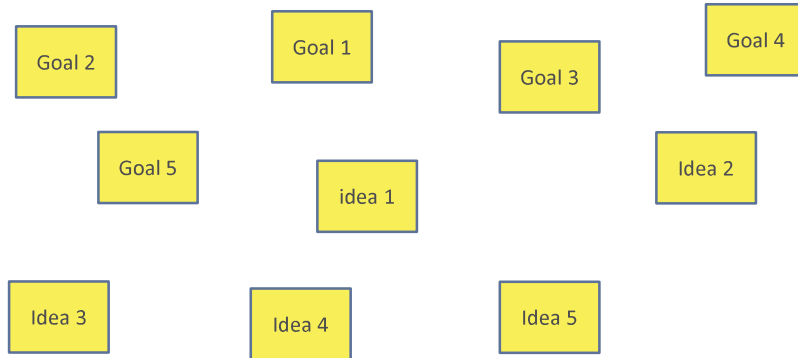


2. What are you aiming at?

What shall be achieved?

Write down **every** idea that pops up!

Also "half-thought", hunches....



3 Write down what you have to do in order to achieve the **most wanted** goals!

You get a **WBS**:

Work
Breakdown
Structure

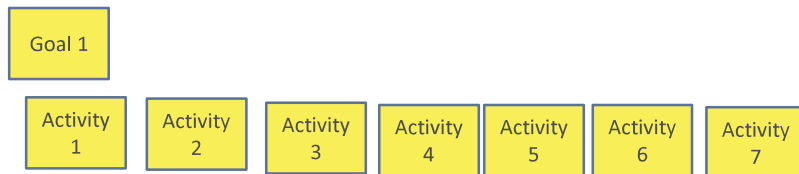


4 Sort in logical sequence.

Make clear dependencies.

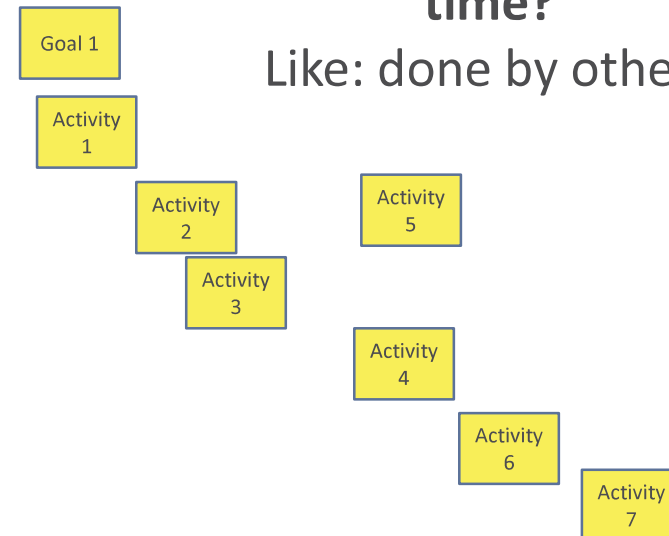
Like: first do this and then that

You can use a new sheet of paper and rewrite the post-it-sheets.



5 **What** can be done parallel over time?

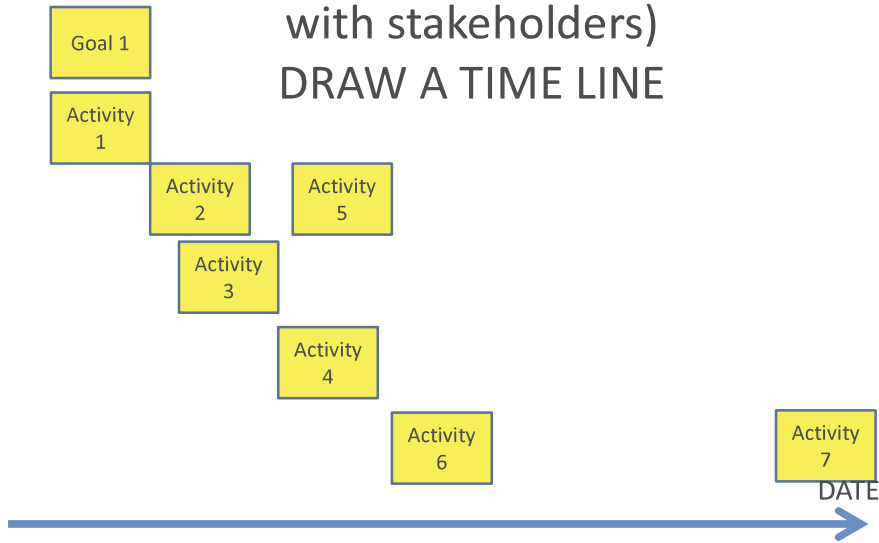
Like: done by others



6 When must the work be ready?

(E.g.: conference dead-line, meeting with stakeholders)

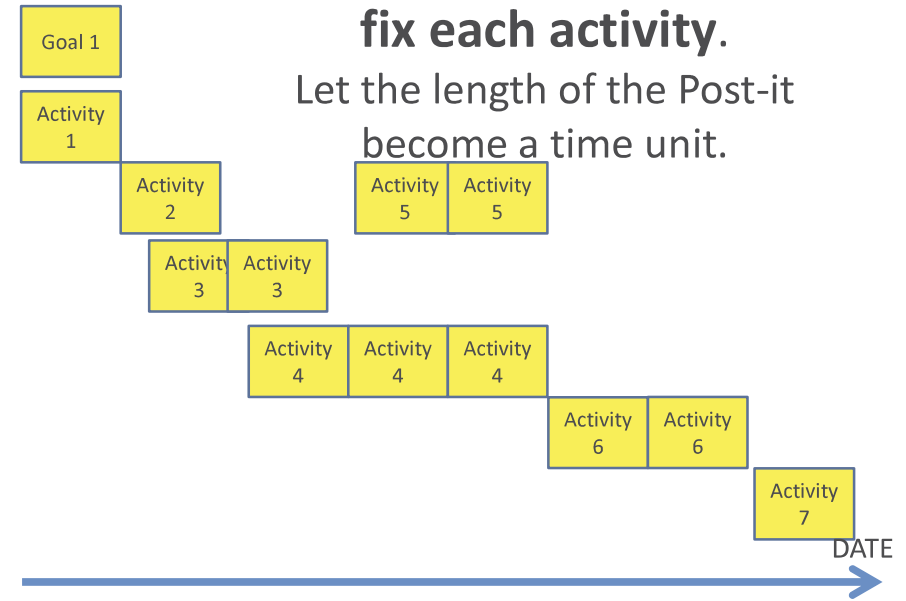
DRAW A TIME LINE



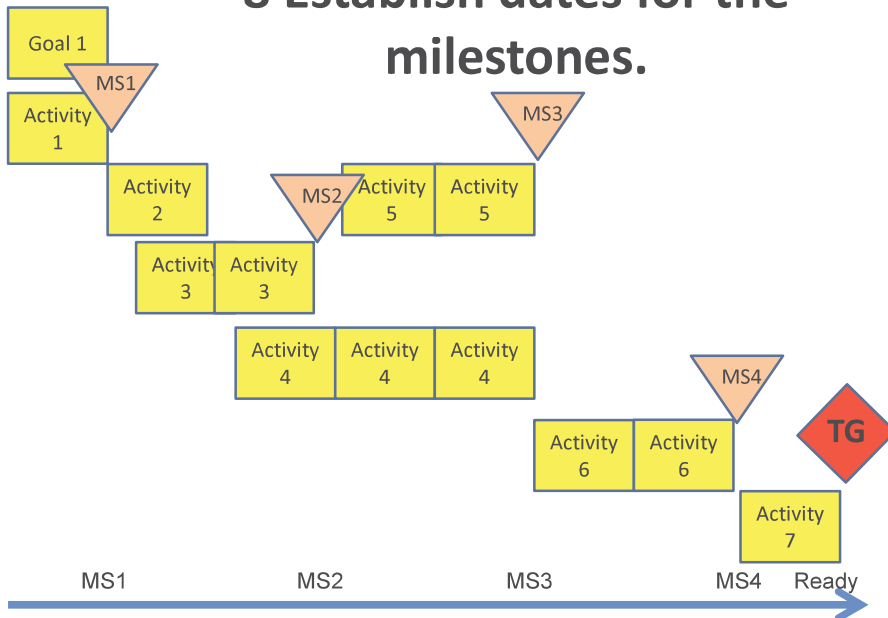
7 Estimate the time needed to fix each activity.

Let the length of the Post-it become a time unit.

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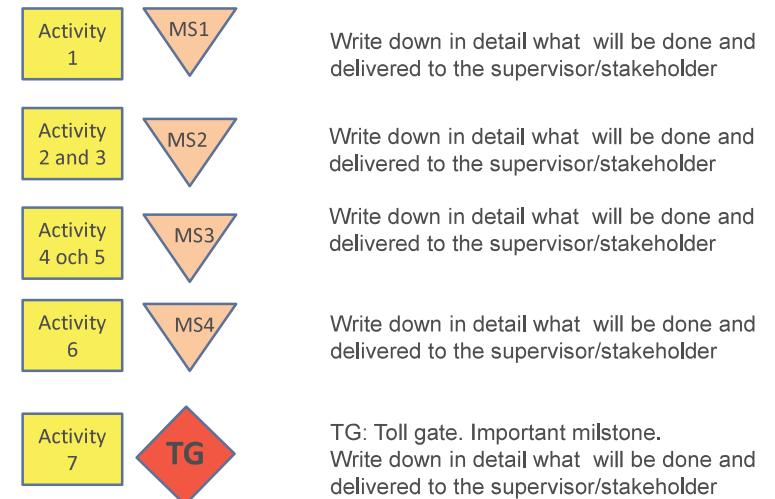


8 Establish dates for the milestones.

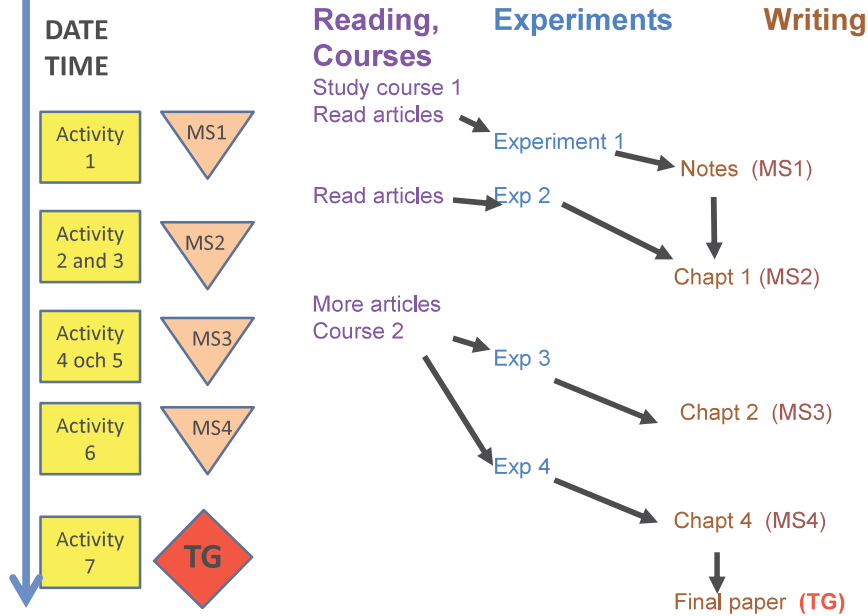


9 Establish a milestone-plan

DATE



Milestone-plan with three work processes



Actual milestone plan with 7 milestones

Date	Plan of milestones			Milestones
	Courses	Experimental	Writing	
Q1-2005 February January Mars	Nanomaterials 5p ↓ Biomaterials 5p ↓	Immobilization protocols for JR2EC and JR2EC _{ref} ↓ Investigate homodimerization in solution and on surface		Immobilization protocol Finish course
Q2-2005 April May June			Paper 1	Multilayers Paper draft Finish course Submit paper
Q3-2005 July August September		Immobilization protocols for JR2KC and JR2KC _{ref} ↓ Investigate heterodimerization in solution and on surface		Immobilization protocols
Q4-2005 October November December	Quantum Chemistry 5p ↓ Applied Optics 5p ↓		Paper 2	Monolayers Paper draft Finish course Submit paper
Q1-2006 February January Mars		SPR shifts due to analyte binding ↓ Analyte induced dissociation		Ligand immobilization Reproducible SPR Analyte response Finish course
Q2-2006 April May June			Paper 3	Small aggregates Dissociation Submit paper
Q3-2006 July August September			Thesis	Draft In print Presentation

If you are in a project group
You need to establish dependencies
WHO is doing what in the group

11 Do we know what we need to know?

What do we need to learn?

12 Clearly competences.

Describe the resources. Make a time-resource-schedule for each participants.

WHO is doing what in the group

13 Who is doing what?

Allocate responsibilities and assignments.

- Write a responsibility chart.

WHO is interested outside the group

- 13 Who are the stakeholders? In what are they interested? • Do a stakeholder analysis.
- How shall they be dealt with?
- When shall they be informed?

Stakeholder analysis

Stakeholder Name	Interested in What	In which phase of the project?	Should be informed before	Contact how? By who?

- ➔ Who wants you to succeed? Be kind to them
- ➔ Who wants you to fail? Pay attention!

Important question in the beginning of the planning of a project:

Why will this project fail?

Large list leads to:

- ➔ Risk management
- ➔ Be aware of opportunities

Mini Risk Analysis, example
 Minirisk value=Possibility X Consequence
 in a 5 step scale.

Risk	Possibility	Minimize risk	Consequence	Rank	If it happens	Minirisk value	Considered in plan
Broken equipment	4	Check status of equipment, always report failures	Halt in material or process development or measurements	4	Try to find alternative equipment or alternative useful work	16	ok

Risks and opportunities

15 What can go wrong?
Make risk assessment.
How prevent and/or
smooth out?

- Modify the plans in order to prevent risks

How about possible good things?

- How can we be open to opportunities?

HOW

16 Describe how you will cooperate within the group.

- Summarize in a group contract.

17 Describe how you will handle data, documents and papers.

Goal document or Planning document

Summarize the work above under the following headlines.

1 Background

- Why is the project carried out?

2 Goal

- What is the goal: Aim, Effect and Accomplished. WBS, measurable?

3 Demarcations

Which another similar problems will you not deal with?

4 Timeplan

- ..achieved at the milestones. The dependence between the milestones must be clear.

5 Resource plans

- plan showing the time resource for each project member and the special equipment.

6 Stakeholder analysis

inner core, supervisor etc.
Who have some interest?
What are they interested in?
When is the best time to inform a special stakeholder?

7 Allocation of responsibility

- Draw a responsibility chart showing where you can see who is responsible for what and to which extent

8 Risk analysis

- Make a risk analysis preferably from a check list and a brain storm in the project group.

9 Criterion for success

- Discuss in the group how you will notice the progress and make sure that you are on the right track: eg: milestone is properly reached. Try to find a measurable thing for every week.

Revise the plans every week while the project is running.

- Change the charts and time plan when needed
- Bring the plans to the meetings with supervisor and positive stakeholders.

Good luck

but you don't need good luck when you have good plans

Personal risk situations

- You are working in a project or studying at a university: you have your own responsibility to choose to do what is best for you. There is always a risk then that you do something else than what you have planned to do, e.g. procrastination, check some irrelevant facts, watch TV, shower long time etc In a Personal Risk Situation the probability for you to do something else (than study) is high.
- Do the exercise to find out what to do with your risks. Look in: <http://pulsro.se/eng/>
- <http://media2.pulsro.se/2021/04/PersonalRisksituationsAnalysis.pdf>

Dealing with stress

- Some people need pressure to actually get it done: like "last-minute-panic". NOT ACCEPTED
- Best for you is to know what starts negative and positive stress for you.

DEALING WITH

negative **STRESS**

Some hints and facts

Rune Olsson

Remember

We are all different.

What is OK for one person maybe not OK for another

We will look at a lot of different hints on stress

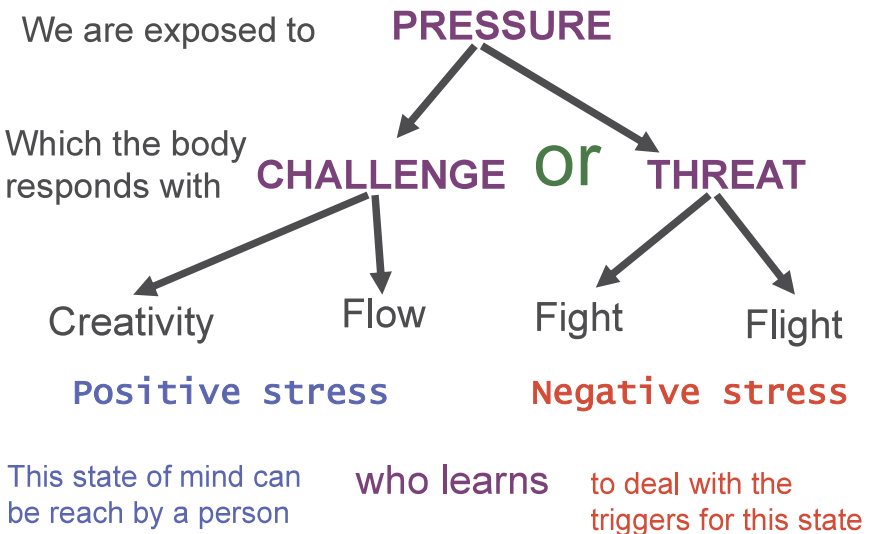
Please, try to see your whole picture: everything that is around and in you.

Pic the hints that is OK for you.

On the <http://pulsro.se/eng/>

there is a longer presentation on stress.

Your choice from pressure to stress



What makes you feel stressed? Write down:

Negative.....

Positive.....

How is the stress experienced in your body?

What makes you feel negative stress? Examples

Lab equipment in bad condition	
Unread articles	
Always reachable	
Full kalender. So much to do.	
Unread mail	
Unsolved issues	
Computer may crash	
Change in daily life	
Always working	
Cannot participate in decisions	
Trouble in a relation	

What can you do to change your stress-situations?

- What is under your own control?
- How can you **avoid** the situation to occur?
- What can you do when the stress-situation has already happened?

What can you control?

Lab equipment in bad condition	Maintenance schedule.
Unread articles	Make priority-list
Always reachable	Flight-mode on the phone
Full kalender. So much to do.	To-Do-List. Have free space every week
Unread mail	Have a priority-list
Unsolved issues	Sit and breathe
Computer may crash	Back-up every hour.
Change in daily life	Sit and breathe
Always working	Every week one day free.
Cannot participate in decisions	Talk to the boss
Trouble in a relation	Talk about your needs.

What makes you calm down? What are your own "EMERGENCY BRAKES"?

- To relax
- Take a walk
- Meet best friend
- Go to the library
- Crash something cheap
- Cry loud in the forrest
- Take 10 deep breath

Two general steps

UNDERSTAND
stress



MASTER
stress

Learn to recognize signals in the body: tension, ache

Your own interpretation influence most

Mistake = opportunity to learn

Relaxing: Just sit and breathe

From the Meaning of Life to Personal planning

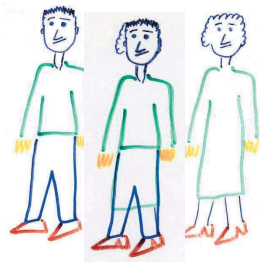
Food and exercise

How Negative Stress is perceived

PHYSICAL

Activity – fight

- Muscle tensions: neck, shoulders, jaw
- Stomage
- Dry mouth
- Swetting
- Headache
-



MENTAL

Passivity - flight

- No power of concentration
- Depressed
- Worry, restless
- Irritable
- Sleepless

When in pressure:

Avoid all drugs:

Alcohol

Caffe

Aspirin

→ What signal is sent?

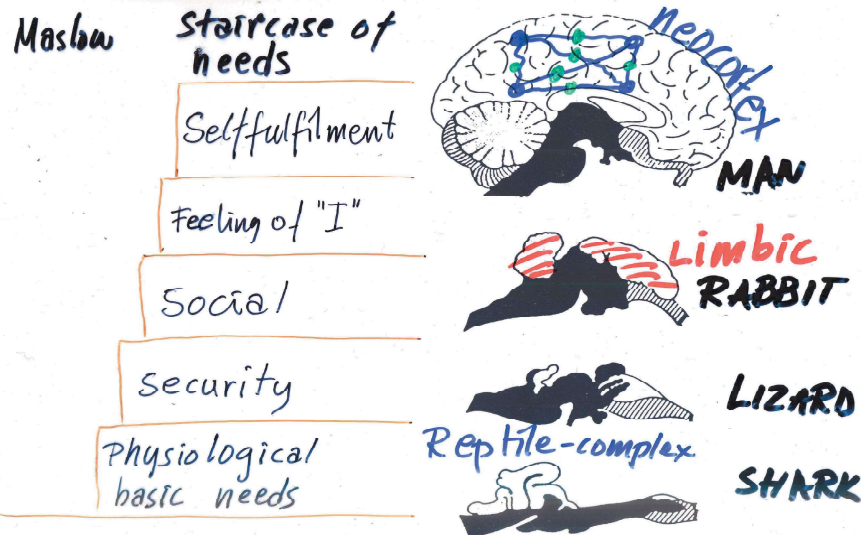
The pain ... tiredness?



Good food is medicine for the body!

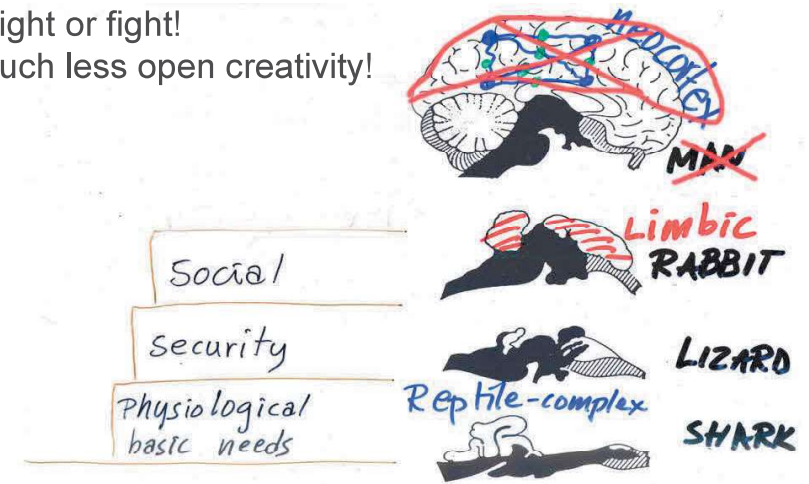


When positive stress
the synapsis in the neocortex works well



When negative stress
the synapsis in the neocortex are blocked by
Stress hormones.

The brain works like a Rabbit:
Flight or fight!
Much less open creativity!



Mental training: the basics

- 1 Every day: Just sit and breath
- 2 Go to sleep softly: Rethink the good things from the day. Strech. Feel heavy.
- 3 Wake up softly: when in bed, strech and soften the joints in your body.
- 4 Rethink after. Once every week find good and bad thinking:
 - Good thinking → strengthen
 - Bad thinking → change

Empty the brain – Just sit and breath

Every day: in the morning, before a meal, before reading a heavy article, before project work, before a meeting ...

- 1 Quiet place.
- 2 Sit steady with straight back. No support for the neck.
- 3 Follow your breathing. Count the breaths from 1 to 10. Back again from 1 to 10.
- 4 While following the breath, let thoughts come and go. When you breathe out, let the thought go out too.
- 5 Feel tension flow out of your body. Fell heavy.
- 6 Finish by saying something uplifting. See yourself as successful.
- 7 Wake up and stretch the body.

You can take 3 - 10 breath or sit 10-25 min.

How do you know that you have done good work when you go home after a days work.

Feel it in the body!

Answered all mails!

All on the To-do-list is done

Assignment done

The boss has not been angry on me!

Some steps towards BURN-OUT

- 1 High commitment
- 2 Neglecting oneself (clothes smell)
- 3 Conflict and needs are neglected
- 4 Change of values in personal life
- 7 Change in behaviour
- 8 Feeling of emptiness
- 9 Total exhaustion

Burn out: WARNINGS!

Way of thinking ends in body pressure

- 1 "I'm not pleased until it is perfect"
- 2 "Perfect is not good enough!"
- 3 "My work is my life!"
- 4 "I don't know my limits."
- 5 "I must steel myself every day."
- 6 "I must always surpass myself."
- 7 "I keep my things and thoughts for my self to long."

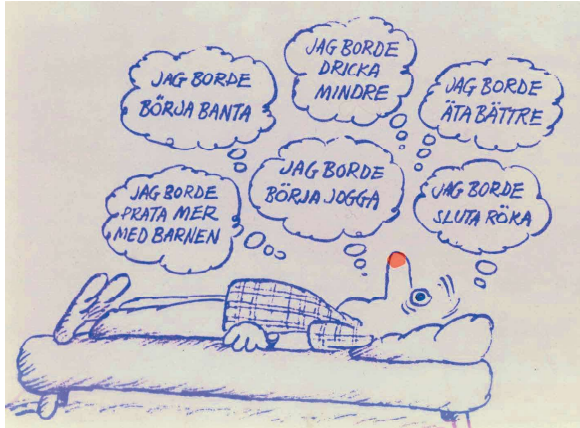
Your thoughts about yourself
can hurt you more
than other's thoughts about
you

This man, who tries to rest his body, is actually very stressed!

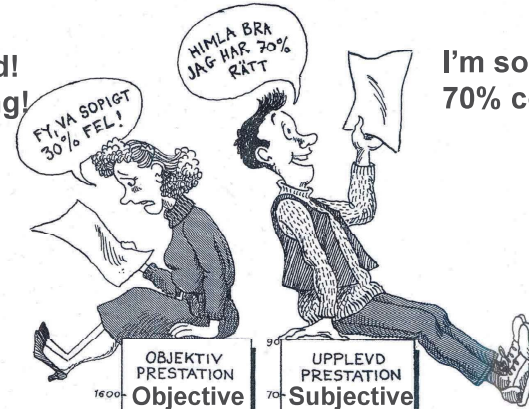
He thinks:

"I should

- ..get slimmer"
- .. spend more time with the children"
- ..drink less"
- ..stop smoking"
- ..start jogging"
- ..eat better food"

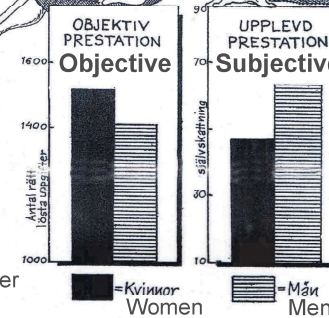


I'm so bad!
30% wrong!

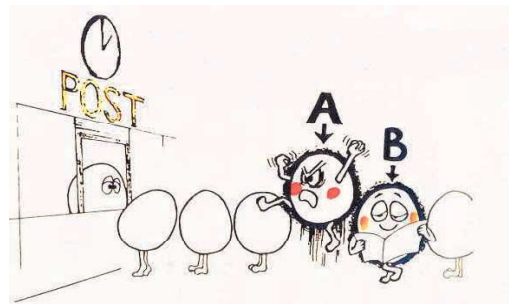


I'm so good!
70% correct!

Research by
Marianne Frankenhauser
KI



How do you react in a slow que?



A-person

- Life is competition!
- Feels allways stressed
- Diffuse goals in life

More often ill

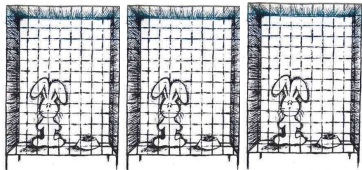
B-person

- No need for competition
- Leisure time relaxed
- Clear goals in life

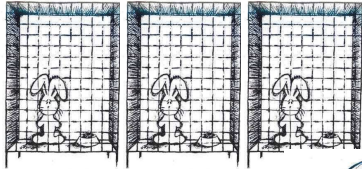
More often healthy

IMPORTANT: Prevent Burn Out

- Listen to the needs of your body
- Be with others, get other's thoughts
- Good enough for stakeholder, is good enough for you
- Make "work contracts" with colleagues
- Change the changeable .. accept the other
- Reconsider your values
- Be kind to your body
- Learn your own pace
- Laugh at yourself
- Just laugh!

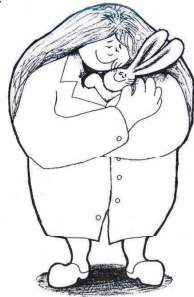


How food affect the blood vessels
Biological test on rabbits



All got food rich in colesterol.
Most of them got worse health
Some were completely healthy

The healthy rabbits were huged every day by the caretaker



Take care of each other

Take care of the planet and yourself

Good luck in your career

Have a good life

Thank you
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