Evaluating the Success of 'Safety Culture' Interventions

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The Study

- Scientific evaluation of 17 projects involving 29 companies + 1 industry
- Financed for 50% by Dutch Ministry of Social Affairs & Employment 2003-2008 as part of a programme to improve occupational safety
- Designed as demonstrator projects
- Targets for accident reduction (at least 10-15%)

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Data collection & analysis

- Interviews & company visits, documents & statistics, questionnaires on safety climate (before, during & after intervention)
- Establish starting point + SMS description
- Describe the interventions on a time line
- Establish measurement instruments for comparison:
  - input (organisation, resources),
  - intermediates (reports from monitoring, behaviour change, actions, meetings) and
  - output (accidents, absence, costs)

Process: how do we control risk?

Technology

- Design, build, purchase, install, layout, adjust
- Monitor, inspect, maintain, replace

Human

- Select & train
- Motivate/commit

Organisation

- Risk analysis & decision making on risk control measures
- Procedures, rules & goals
- Communication & coordination
- Learning, change & improvement

Culture: believe in and contribute to the implementation & steering of processes

- Understand why and how risks exist and can be controlled
- Believe that control is possible and has priority
- Collaborate with fellow workers/managers on the basis of this belief
- Be open for learning and improvement (suggestions, praise, correction, change, investment)
- Never be content (creative mistrust)

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First observations

- The subsidised intervention was only one of many (safety-related) changes taking place over the years studied and those before.
  - Starting point for evaluation is problematic
  - Cannot expect clear discontinuities in measures
- The 17 projects carried out 300 interventions (range 3 – 32) of 29 different types
  - Mix depends on maturity of SMS filling gaps
  - Success of individual interventions cannot be established.

Measures of success

- Significant downward trends in undesired outputs
- Significant upward trends in desired intermediates
- Patterns of change & time of onset
  - Agreement between different measures
  - Explainable (e.g. reporting vs. safety changes)
  - Clearly successful = several positive changes
  - Possibly successful = 1 positive change
  - Not (yet) successful = no significant change (yet)
  - What happens more often in successful than not successful companies?

Company	Start date	Target reduction
Concrete element construction	02.04	Minus 10-15%
Corrugated cardboard (assⁿ 13 co.s)	06.04	Minus 25%
Storage & distribution	06.04	Minus 10-15%
Meat products	09.04	Minus 20%
Waste disposal & treatment	09.04	Minus 10-15%
Steel maintenance dept.	01.05	Minus 100%
Disabled work provision 1	02.05	Minus 10-25%
Air freight	04.05	Minus 60-75%
Forklift truck manufacture	06.05	Minus 50%
Agricultural sector	07.05	Minus 10-15%
Brewery	09.05	Minus 50%
Disabled work provision 2	01.06	Minus 10-25%
Disabled work provision 3	02.06	Minus 10-25%
Disabled work provision 4	06.06	Minus 10-25%
Academic hospital	07.06	Minus 25%
Construction	08.06	Minus 20%
Disabled work provision 5	Withdrawn	Minus 10-25%

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Success factors

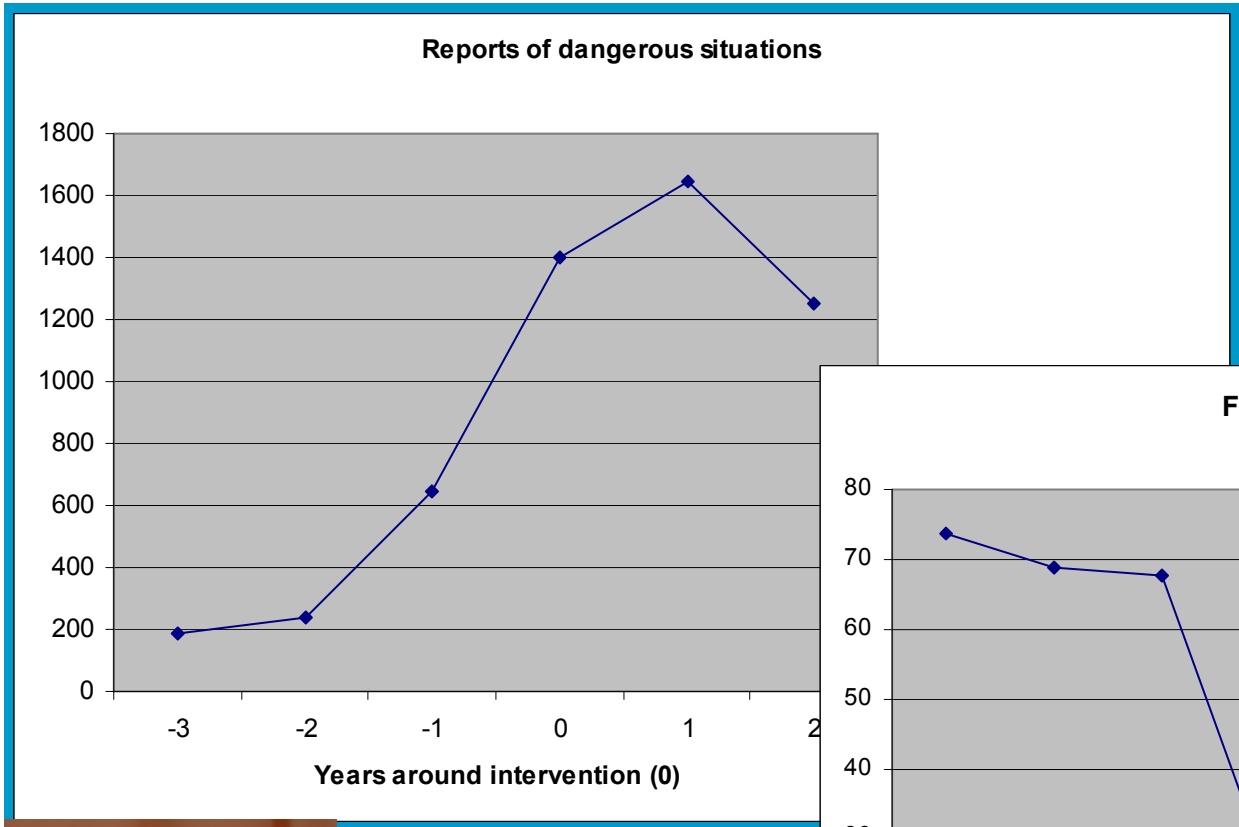
- Active involvement of shop floor (STOP-GO, behavioural audit with discussion/confrontation)
- Improved monitoring, reporting, learning, feedback
- Top management workshops en motivation to give active (or at least passive) support
- Enthousiastic, creative, determined coordinator
- Training of line managers in SMS, coaching, behavioural audits with confrontation, toolbox meetings
- Make SMS more systematic (update procedures)
- Systematic planning of interventions (themes, steering group)
- KPIs for managers – intermediates as well as outputs
- Improvements in physical aspects (workplace, logistics, PPMs)

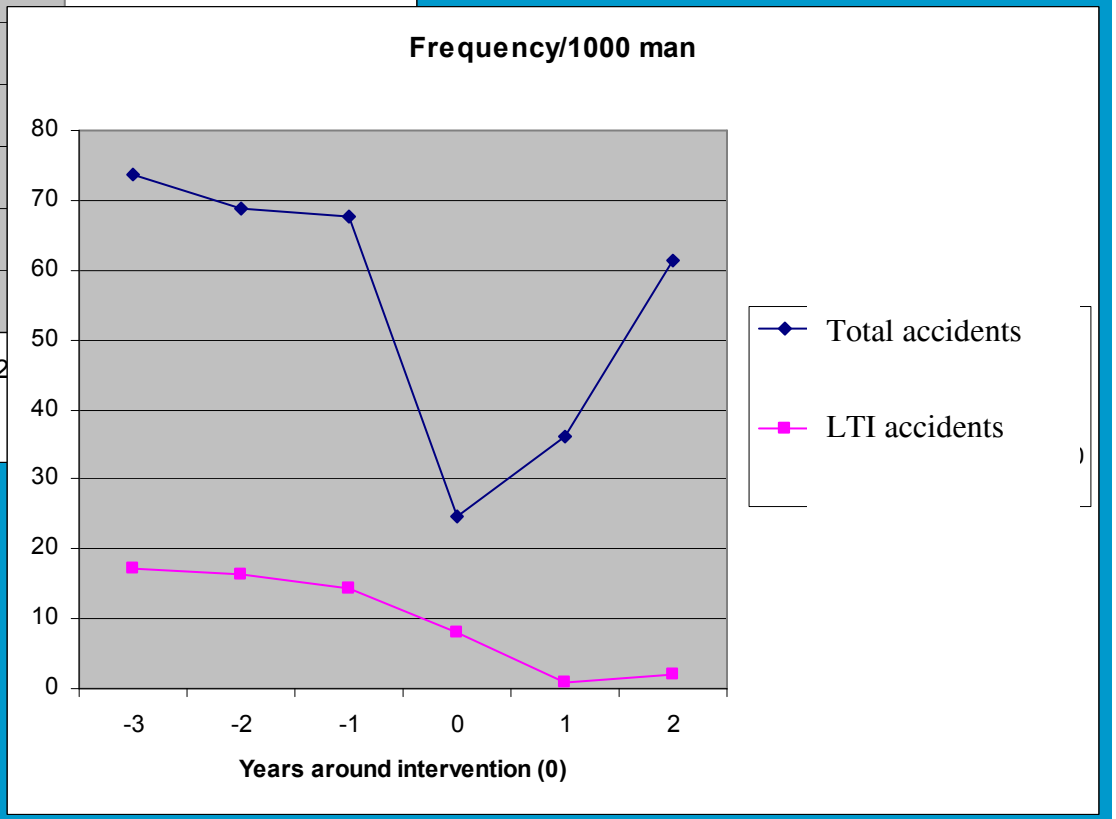
Non-discriminating factors

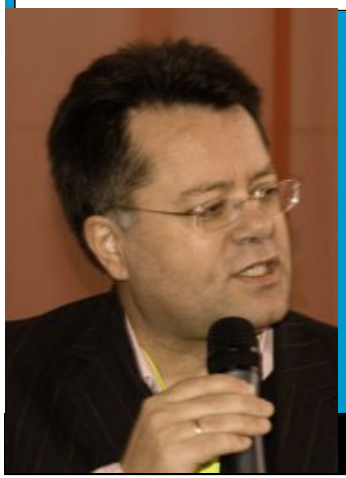
= as likely by successful as not successful

- Reorganisation, bad economic times, redundancies, investement stop
- High workload
- Change of directors
- Training of shopfloor
- Publicity
- Improved access to information about SMS

Steelworks maintenance division







Peter
Booster

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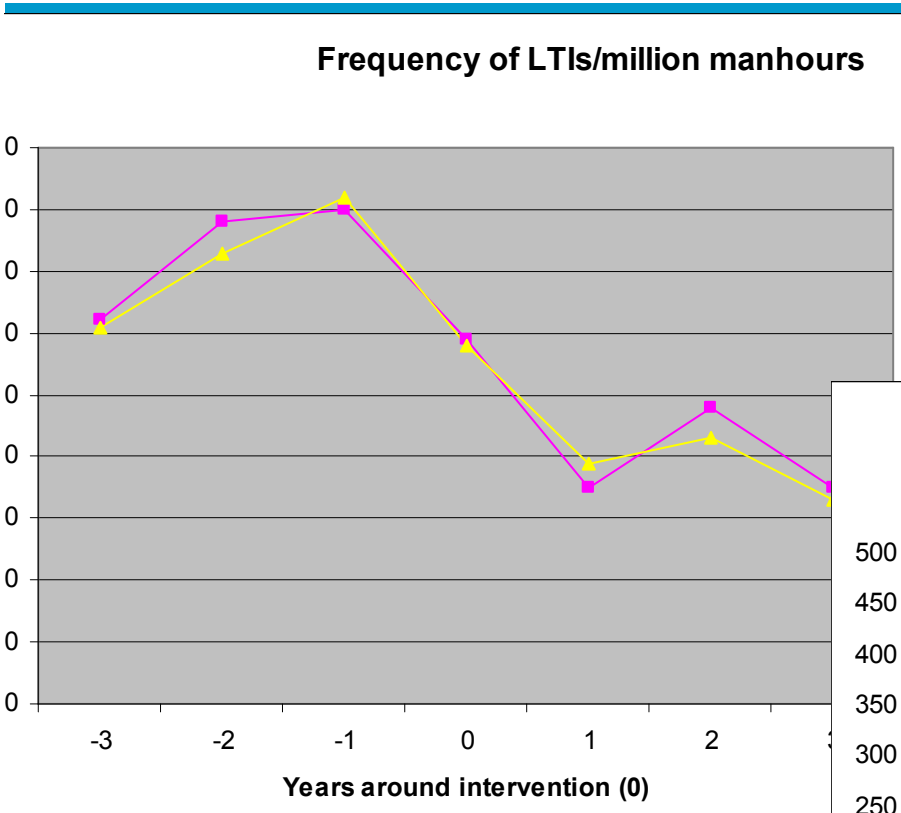
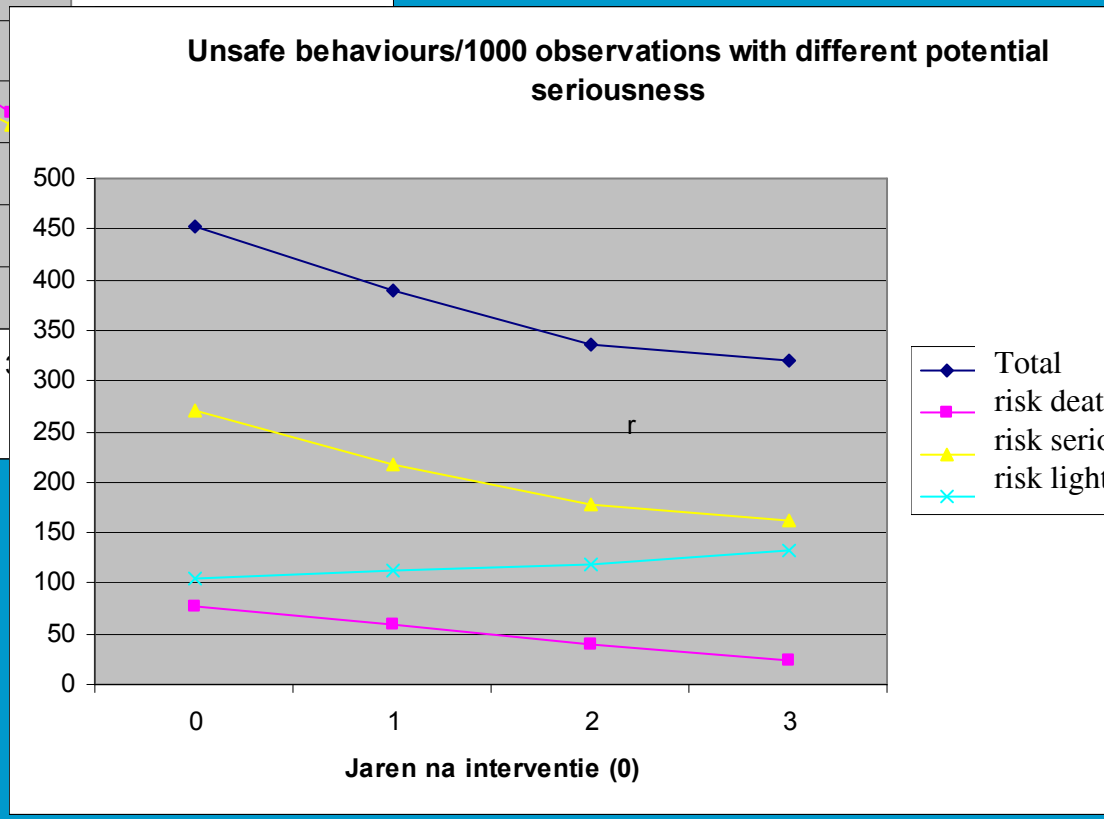
Steelworks maintenance division

- Charismatic safety manager (terrier) with a history of success in another division,
- Brought in, and supported in his battles with department heads, by a new director who wanted to improve the image and morale of his division
- Dashboard of KPIs – combination of compulsory and choice
- Big emphasis on training and communication
- 'Stop & Go' card to empower shop floor + observation/discussion/confrontation audits of behaviour

Concrete element construction





Jan
Jacobs

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Concrete element construction

- Charismatic safety manager
- Supported by 2 product group directors (but they took no active initiatives)
- Main focus on training in risk perception: use of emotion & involvement coupled with an explicit final commitment of each individual to action
- Involvement of family – information + holiday gift
- Reporting of dangerous situations + corrective action
- Observation rounds + visibility on shop floor

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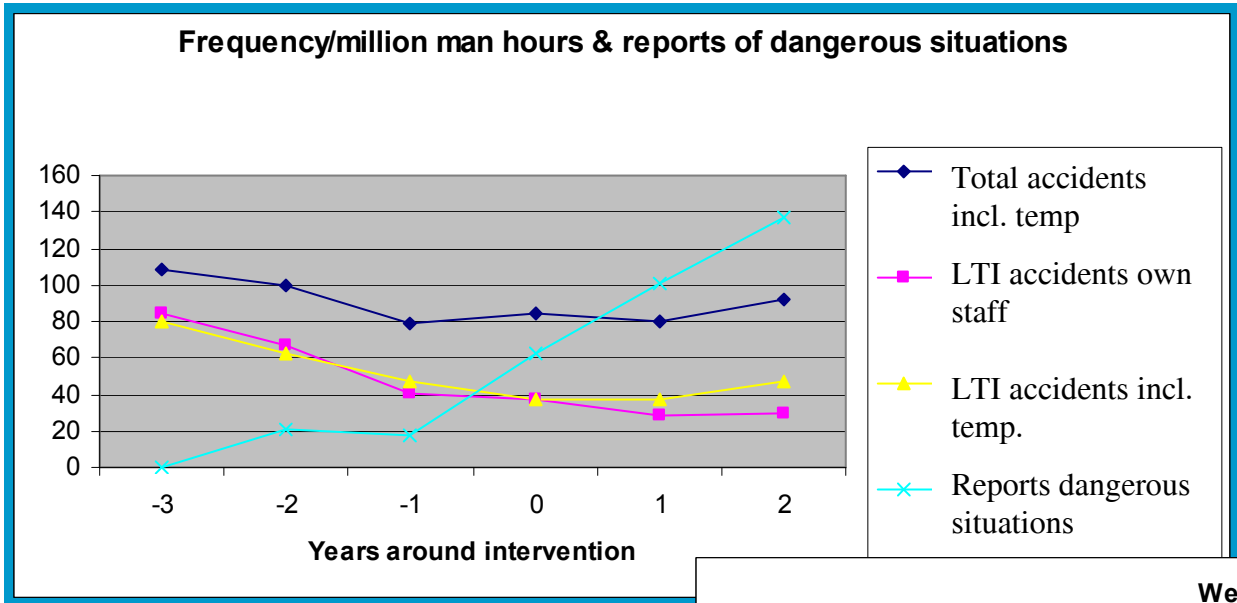
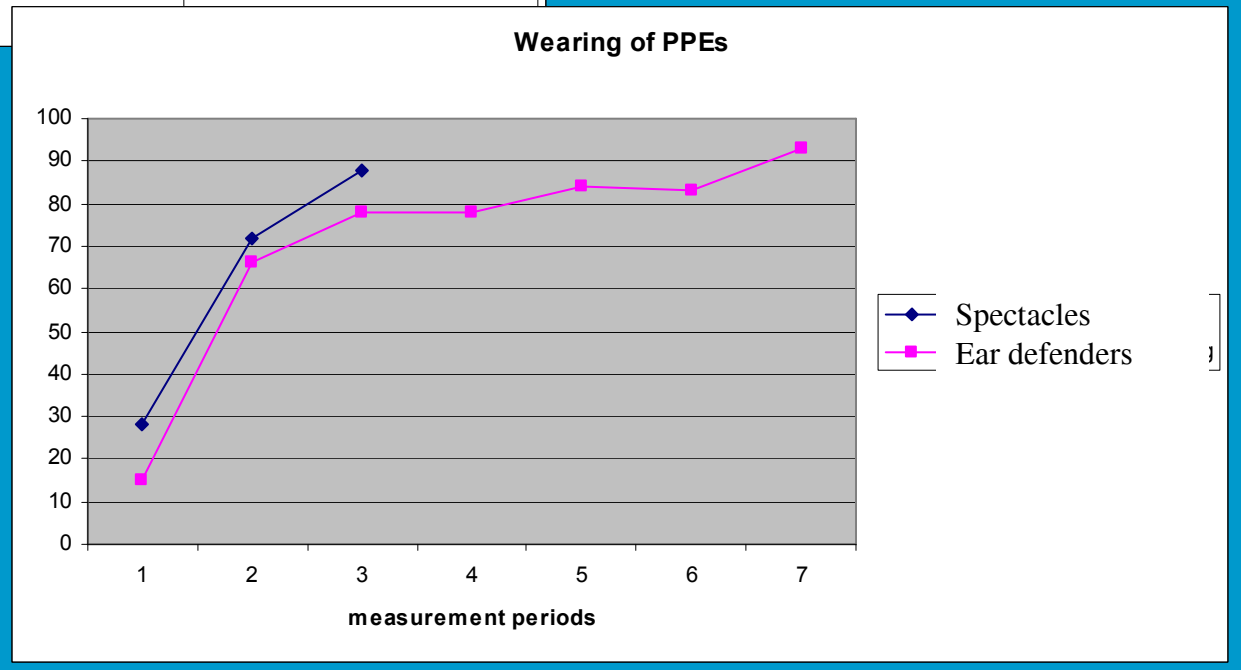
Forklift truck manufacture



Maryke Oor



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Forklift truck manufacture

- Very active steering group to support activities, give energy, – senior managers + line managers from all departments define themes
- 'Terrier' of a safety manager providing a high profile of information & activities, with a lot of involvement of the shop floor
- Much use of reporting of dangerous situations & improvement decisions by line managers
- 'Stop & go' cards to empower the shop floor

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Requirements & challenges for evaluation

- Instruments to measure improvements:
  - Output/performance = injury, sickness & absence
  - Intermediates = hardware, behaviour/knowledge, documents
  - Inputs = set processes in motion (meetings, training, risk analysis, registration)
- Distinguish the effects of interventions & those of other changes
- No bias in measures through 'hindsight', wish fulfillment, change in thresholds of registration