

How to Win Hearts and Minds: The Theory Behind the Program

Intrinsic Motivation

A review of the academic literature on motivation, with an emphasis on intrinsic motivation (Hudson et al, 1998) summarised the main psychological theories that can be fit in a number of broad categories:

- need theories
- learning theory and operant theory
- social-cognitive theories
- attribution theory
- cognitive evaluation theory
- current thinking on the role of rewards and incentives, often felt to be motivating

The main conclusions were that the scientific literature is extensive and often contradictory. Many of the experiments used to measure intrinsic motivation are trivial and have no long-term component. Nevertheless there is a number of consistent conclusions that could be drawn

- Highly motivated people feel in control or feel powerful, competent and high on self-efficacy. These people are intrinsically motivated to do their job. The downside is that these feelings may be biased ('unrealistic optimism'; 'illusion of control').
- Less motivated people don't feel in control or feel powerless, less competent and low on self-efficacy. These people show less initiative. These feelings may be biased too ('learned helplessness').
- Extrinsic rewards can move the locus of control from internal to external, praise and reward for quality of performance may increase the internal locus of control.
- Under certain circumstances rewards and incentives may change behaviour, but it is also true that intrinsic motivation may be hampered. Simple application of rewards may be attached to the wrong behaviours.
- Although behaviour may be changed, underlying beliefs may remain unchanged. This suggests that reversion to old behaviour patterns is very likely.
- Belief is a crucial factor in determining how and why people will behave. Values may be acceptable but expectations will be driven by beliefs.

What is clear from this is that people need to feel that

- they have a sufficient degree of control over their environment and actions
- their beliefs have to be consistent with their values and
- inappropriate rewards may actually turn out to be counter-productive in the creation of an intrinsically motivated individual.

Readiness for Change



A critical review of the change literature, mostly from the management literature (Lawrie, Parker & Hudson, 2000) highlighted a number of requirements but did not provide a substantial foundation for the management of change within organisations that had any serious scientific validity. Most of the models were common sense but had never been validated independently. There was, however, a model for change of belief and subsequent behaviour, Prochaska and DiClemente's Transtheoretical Model (Prochaska, DiClemente & Norcross, 1992) available in the field of Health Psychology. This model allowed for a drug-dependence metaphor for HSE behaviour while being well-established in a number of areas of application. People are 'addicted' to unsafe behaviour which looks as if they have no intrinsic motivation for HSE.

Step	Action	Issues to be resolved before proceeding	How is this issue to be tackled? Method Action Party When
1	Consciousness raising	Are all involved fully conscious of the existence of the problem?	
2	Creation of need in individuals	Do they have a clear personal need to achieve a new state, the goal?	
3	Making the outcome believable to all concerned	Do they all believe the goal is realistic and obtainable in their work?	
4	Making the outcome achievable	Is the desired goal believed to be achievable under current conditions?	
5	Information about successes	Are people aware of successes elsewhere and do they know who to contact?	
6	Personal vision	Has everyone developed an idea of what achieving the goal means for them and their work unit?	
7	Plan construction	Has a feasible plan been designed?	
8	Measurement points	Is there a set of realistic evaluation indicators for success?	
9	Commitment	Has everyone publicly committed their plan?	
10	Do	Has the plan been carried out?	
11	Review	How far the plan indicators been reviewed?	
12	Review	Have any necessary alterations to the plan been implemented? Have missing elements been identified and resolved?	
13	Review by management	Has the whole process been carried out as agreed? Has it been kept as long enough to become a habit?	
14	Outcome	Has the target group internalised the habits and values so that the intended goal is reached and maintained without constant supervision?	

HSE Culture

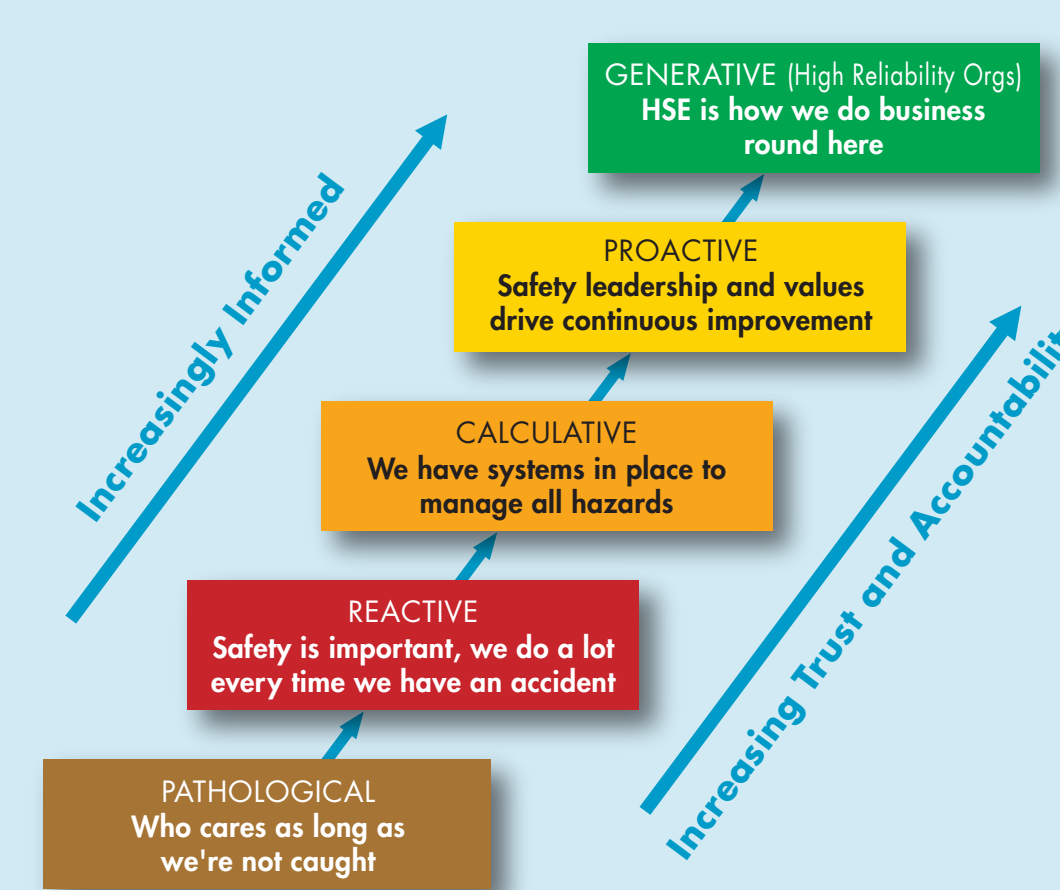
The concept of intrinsic motivation is a complex one, known to be hard to develop head on, so the program concentrated upon the development of a cultural maturity model based upon an original model of Westrum (1992). This model described three stages in development of an organisation's culture, based upon Westrum's observations in the auto industry in Michigan and the aviation industry's response to accidents. This original model had three stages: The Pathological, the Bureaucratic and the Generative. There was no psychometric validation and most scientific work had been carried out in the area of safety climate or static descriptions of the safety culture (Guldenmund, 2000).

Testing the culture model

The maturity model was field tested for its psychometric validity in a number of settings, and went through a number of phases. After an initial series of structured brainstorming with a small number of highly experienced individuals, the descriptions were reduced under a five-step ladder scale, adding the Reactive and Proactive stages and changing the name from Bureaucratic to Calculative.

The initial field test demonstrated that a Readiness to Change test, based on the Prochaska & DiClemente model (a climate model of satisfaction) and the culture test did not correlate. The implication was that it was tapping a cultural rather than a climate measure.

The original test was not detailed enough to serve as more than a measurement tool, so a large set of descriptive

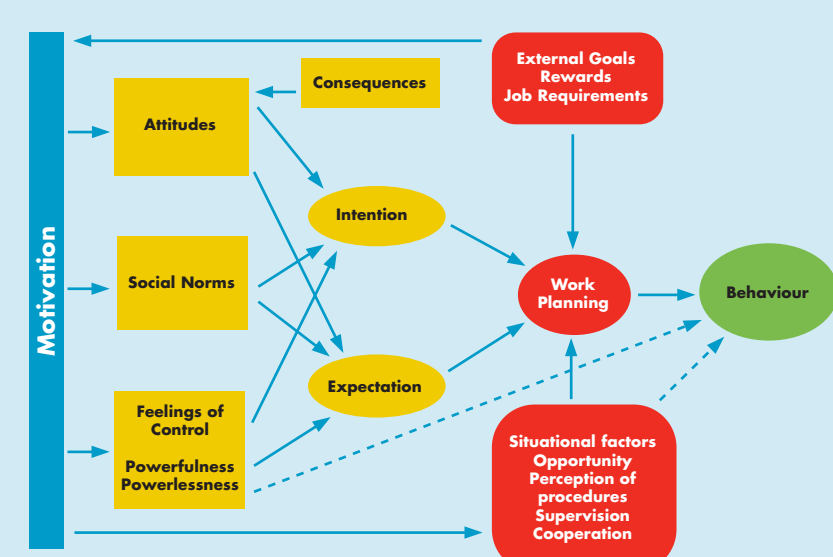


statements was created, matching the original elements proposed to cover HSE-culture. This was tested using five-point scales in an air force squadron in the Netherlands (Croes, 2000) and the data collected was used in a factor analysis to define a limited set of reliable factors. These factors were then used in a series of structured interviews with content specialists in Houston, Aberdeen and The Hague to fill in detailed description of the 18 factors that had been uncovered (Hudson & Parker, 2002).

Managing Rule Breaking

The brochure 'Managing Rule Breaking', is based upon empirical work derived from Aizen and Fishbein's Theory of Planned Behaviour and doctoral work on the types and causes of rule violations in railway shunting operations (Free, 1992). The basis for the tool was a large-scale study of North Sea offshore workers and supervisors, in both the UK and the Netherlands. Analysis of the responses found what has been labelled the Lethal Cocktail, predicting reported past violation behaviour (on a five point scale) at 64% of the variance (Verschuur, 2004).

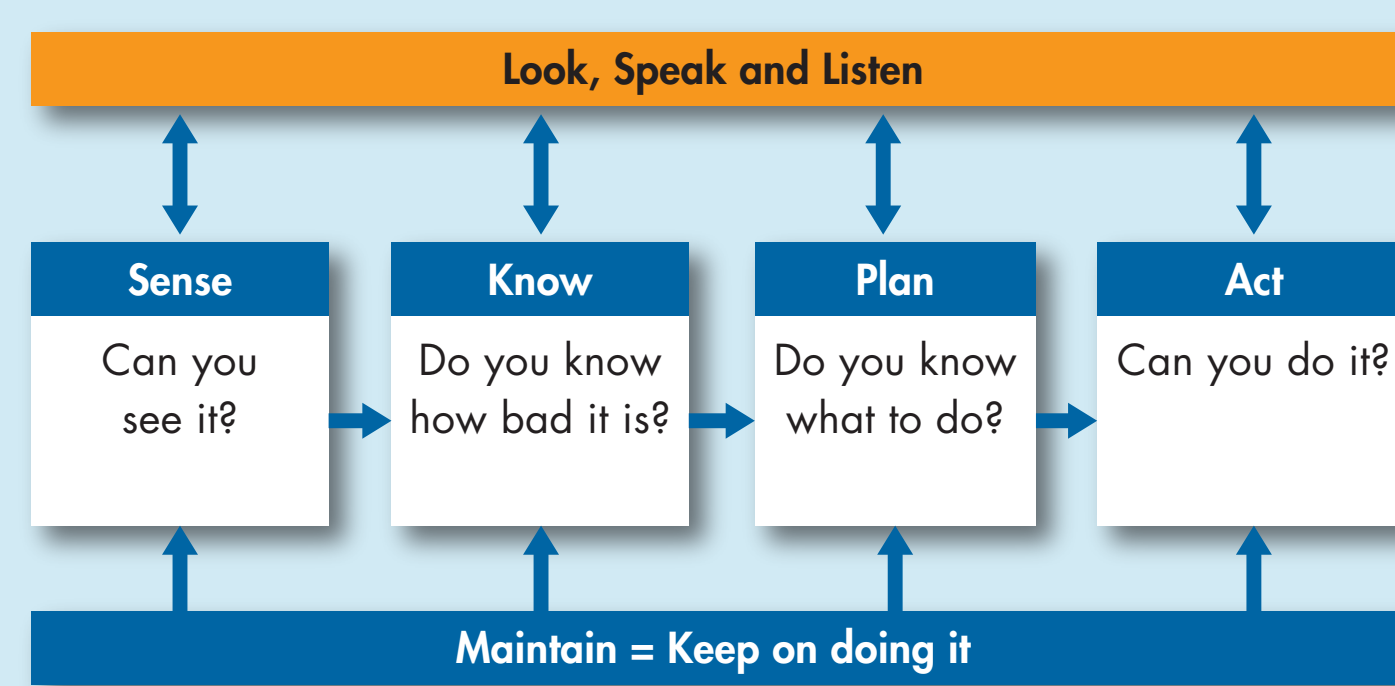
An earlier study found the popular distinction between Sheep and Wolves types of



rule-breaking personalities as a result of a structured analysis of the responses. The results are extremely solid and this provides a guarantee that the factors identified are real and that preventative and remedial measures will, therefore, be meaningful and effective. These studies used more advanced statistical techniques than simple means and standard deviations, involving factor analysis and PRINCALS analyses for non-parametric data.

References
Croes, S. (2000) Safety Culture at Volkel Air Force Base. Leiden University Department of Psychology
Daniels, Aubrey C. (1994) Bringing out the Best in People Use the Power of Positive Reinforcement: An Executive Book Summary. (ISSN 07472196).
Free, R. (1992) Bending the Rules. Ph.D. Thesis, University of Manchester
Geller, E.S. (1991). If only more would actively care. Journal of Applied Behaviour Analysis, 24, 607-612.
Geller, E.S., Gilmore, M.R., & Roberts, D.S. (1992). Achieving total safety management through employee involvement. Newport, WA, Nokes-Diffrence, Inc.
Guldenmund, F.W. (2000) The nature of safety culture: A review of theory and research. Safety Science, 34, 215-237

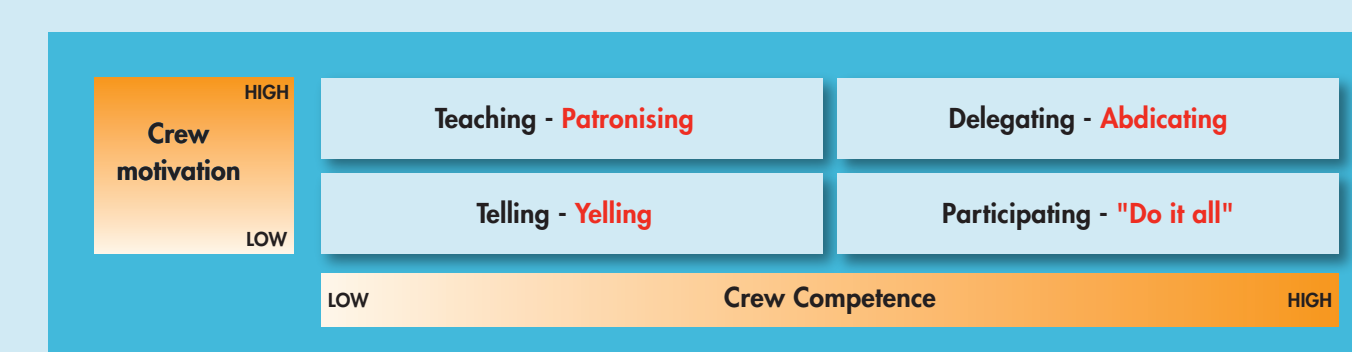
Working Safely



There is a considerable literature in the area of Behaviour Based Safety Management, concentrating upon getting people to behave safely. Much of this is based upon the behaviourist tradition (Daniels, 1994) or on social psychological work on self-efficacy (Geller, 1991; Geller et al, 1992). The Hearts and Minds Working Safely brochure is, however, intended to be more generic and covers a wider range of issues, starting with the assumption that people intend to be safe, but may fail for a variety of reasons. This means that a well-established literature on perception and decision making can be called on to justify the first two boxes identified.

References
Hale, A. (2000) Editorial: Culture's confusions. Safety Science, 34, 1-14
Hudson, P.T.W. (2003) Applying the lessons of highrisk industries to medicine. Quality and Safety in Health Care, 12, 1-4
Hudson, P.T.W. & Parker, D. (2002) Profiling safety culture: The OCP interview study. Report to OGP. London. Leiden University, Department of Psychology
Jorke, H. (2000) Cockpit decision making: How the Rule of Three can help making go-no-go decisions. Leiden University, Department of Psychology, report.

Improving Supervision



The brochure 'Improving Supervision' makes use of a well-established model of situational Leadership developed by Hersey and Blanchard. All supervisors have their own style of managing their job and people Unfortunately, a successful leadership style in one situation will not guarantee success in another and, taken to extremes, each style can become undesirable. We distinguish four styles that supervisors adopt:

- Telling** a strongly directive style.
- Teaching** a style that encourages people and adds explanation todirection.
- Participating** a style where leadership is shown by providing an example.
- Delegating** a style where the leader demonstrates trust in the competence and motivation of the crew.

References
v.d. Merwe, K. (2003) Cognitive strain in the cockpit: The influence of threatening future events on performance. Leiden and Ohio Universities Department of Psychology, report
Reissos, J.T. (1997) Managing the risks of Organisational Accidents. Aldershot: Ashgate
Prochaska, J.O., DiClemente, C.C., & Norcross, J.C. (1992) In search of how people change: applications to addictive behaviours. American Psychologist, 47, 9, 1102-1114.
Tversky, A. & Kahneman, D. (1974) Judgement under uncertainty: Heuristics and biases. Science, 185, 1124-1131.
Verschuur, W.L.G. (in press) Bending the Rules: A Psychological Evaluation of Non-compliance. Ph.D. Thesis Department of Psychology, Leiden University.
Waisman, R. (1991) Cultures with requisite imagination. In: J. Wais, P. Stager & J. Hopkin (Eds). Verification and validation in complex man-machine systems. New York: Springer