

HOW DO LEADERSHIP STYLES COPE WITH THE IMPACT OF HUMAN FACTORS IN DECISION MAKING IN RISKY TERRAIN?

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ABSTRACT: As people are a major source of risk and the least predictable, it seems important to look at the different ways how we can cope with this risk. Several scholars set up checklists and tools in order to better evaluate the physical risk of mountaineers, delivering a clear procedure to stick to and hence hope to limit casualties. The aim of this paper is to study whether there is another way to reduce risk in working directly with the people and their interactions. We all know different characters of mountain guides; distinguishable through their leadership styles. The core question of this paper is whether there are leadership styles, which may deal better with the human factors' related risk. If yes, is it already taught somewhere? If no, can any training for these leadership styles be set up and adopted in the mountain guide business? At the end it must be said, that this paper is not giving any results yet, as the study just starts and the author would like to discuss possible orientations of the project with the numerous mountain professionals attending this workshop.

KEYWORDS: Leadership, human factors, risk, decision-making, training, gender.

1 INTRODUCTION

Human factors' influence in decision-making in backcountry skiing was studied by Fredston et al. (1994). After their identification of the human factors, remains the question how can professionals and lay people cope with their influence.

The proposed study looks therefore at the leadership behavior of professional mountain guides. What does really influence the future leadership style of the guide: Is it personal character, social environment, critical incidents, tragic losses? Do tutorship and advanced training courses contribute to personal evolution of leadership styles?

The ulterior motive behind the investigation of leadership styles is the hypothesis that transformational leadership (see Table 1) may cope easier with the human factors as considering the individual and not only the task.

2 LEADERSHIP & DECISION

First crucial fact is that groups without an identified leader have trouble making sound decisions in a risky situation. It is reported that in groups with members of equal level of experience, there is often no clearly stated leader, even if each member of the group may make an unconscious choice of the leader. Nevertheless it is difficult for him/her to act as such, among peers, without a clear statement.

What kind of competencies should a leader have in order to cope with the multiple information and risk factors? Rational decision-making requires proper integration of two modes of thought: analytical reasoning and emotional intelligence (or affect) (Slovic, 2002).

Do leaders (professionals, volunteers or unconsciously chosen by peers) have the competence or awareness to deal with these human factors? Knowledge about the physical environment can be trained, but what about the psychological component? Can people be trained or just have the gift to be very communal, whereas others don't?

Epstein (1994) says that "there is no dearth of evidence in every day life that people apprehend reality in two fundamentally different ways, one variously labelled intuitive, automatic, natural, nonverbal, narrative and experiential, and the other analytical, deliberative, verbal and rational". There is no reason why mountain terrain should differ from every day life, therefore you would expect that both ways are taken in account in leadership and decision-making in risky terrain.

3 LEADERSHIP STYLES & GENDER

Most commonly leadership styles are connected to social gender roles. Rarely the assumed link underwent a critical view like in Eagly & Johnson (1990). They studied managers in actual work organizations and concluded that the leader role overrode any pre-existing gender effects and that women and men behaved much the same, due to the requirement of the job or the role expectations shaping their behavior.

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Table 1: Leadership styles with relation to social gender roles

<i>Linked to female gender role</i>	<i>Linked to male gender role</i>
Democratic (participative)	Autocratic (directive)
Early and narrow description of leadership styles by Lewin & Lippitt (1938) and Vroom and Yetton (1973); directive style links to the male gender role, as men are considered more controlling and dominant, whereas women seek for consensus and harmony.	
Communal	Agentic
Classic work by Bass (1990) and Cann & Siegfried (1990):	
Interpersonally-oriented approach	Task-oriented approach
Tending others morale and welfare	Accomplish tasks by organizing task relevant activities
Distinction introduced by Bales (1950) and further developed by Hemphill & Coons (1957):	
“Consideration”	“Initiation of structure”
Helping others, doing favors to subordinates, explaining procedures, being friendly and available	Encourage subordinates to follow rules and procedures
Transformational	Transactional
Initially inspired by Burns (1978) who found that former descriptions lacked important aspects and further developed by Bass (1998). A third style is known as laissez-faire leadership, which is general refuse to managerial responsibility (not of further importance for this study).	
Leader set high standards of behavior and establish role model for subordinates through gaining confidence and trust; forward looking (develop plans to achieve the goals); sceptical of status quo therefore continuous innovation; mentoring and empowering followers in order to develop their full potential.	Based on exchange-relationship with followers; clarify subordinate responsibilities; Monitoring their work; Reward met objectives and correct failures

Even if most leadership behaviors can easily be linked to gender roles (see below), it is not clear yet for scholars whether the difference between male and female leaders is a real difference or merely perceived difference influenced by biases and stereotypes of men and women evaluating the leaders (see Table 1 for further details of the different leadership styles).

Under these circumstances one would not expect to use still the notion of feminine and masculine leadership styles, but rather a perception of different components of leadership behavior with a complete disconnection from gender.

Transformational and transactional leadership styles are less related to the social gender roles, but Bass (1985) shows that women are rated higher on transformational leadership components and even more: these aspects relate positively to leaders effectiveness (meta-analysis comparing women and men in leader situation realized by Eagly et al. (2003).

Hence transformational leadership might become over time a leitmotiv for leadership in general and so add a communal component to existing transactional leadership behavior. Society evolves and so do leadership styles.

Transformational behavior cannot purely be attributed to female leaders even if it might be coherent with the stereotypical female role, as it is a fact that (male) mountain guides practice this leadership style, too. One would have troubles to find a more male dominated profession applying transformational leadership than mountain guides.

4 ADOPTION OF COMMUNAL COMPONENT

The chosen example of mountain guides could not be more typical for transactional leadership: male dominated profession known for autocratic and task-oriented leadership. But nevertheless a small percentage of professionals practice an interpersonally-oriented leadership, contradicting the sector's reputation. This proves that a communal leadership can as well cope with the inherent risk of the profession and shows that a communal style is adopted, despite a performance and task-oriented professional curriculum.

4.1 Potential target group (leaders)

In the US literature the target public of risk management and outdoor articles are most often staff members of professional outdoor organisations, training students the skills in the

wilderness. Interestingly they focus on transferring know-how to their students.

Whereas this paper is looking at professional mountain guides, taking out clients to some specific goal, but knowledge transfer is not a primary objective and depends on the guide-client relationship.

Third possible target are the volunteer guides trained by the federal sports associations in Europe. There is no notion of client or student, but knowledge transfer is clearly part of the associative life.

4.2 Client

What about the relationship with the client? Is communal leadership better accepted by the clients? Do clients come back and spread the word more easily? Or do some clients prefer the autocratic leader, as this may induce confidence and security (e.g. association with father figure, hero etc)? There are still many questions about the impact of communal leadership on an agentic environment to answer.

For some clients detailed planning and preparation is part of the experience, whereas for others this process may represent an unacceptable drain on time and resources, so they delegate to professional guides (Powell, 2007).

Whereas other clients do not only seek a simple outdoor adventure, but also the skill set the experience requires. This may be an unconscious demand due to the constant changes in the modern world, accompanied by uncertainties. This skill set acquired in outdoor experience may help to cope in every day's life (Cline, 2004).

5 ACTUAL DECISION-MAKING IN RISKY TERRAIN

The leader concentrates on the risk of the physical environment and relies on his practical experience. In case of lacking information for analytical decision-making, McCammon (2001) speaks of heuristic decision-making, based on former situational experiences. Heuristics can be useful in situations where fast and frugal decision-making is vital, but McCammon introduces also the term of heuristic trap, which may bias decision-making and lead to failures.

Looking back we wonder sometimes why decisions (assumed responsible for the accident) seem not rational at all. One explanation is given by Dörner (1996) describing ballistic reasoning: Practitioners tend to protect the perception of their own competence and will negate any contrary evidence, explaining so irrational behavior. This behavior has a reason, it is simplifying a highly complex environment and creat-

ing confidence, which enables the individual to advance further and cope with new challenges.

The accidental statistics show that in cases, involving professional mountain guides, it is sometimes difficult to clearly identify "the error". Often group dynamics or individual behavior influenced risk appreciation. In some cases, this was later on confirmed by the involved (see e.g. feedback from avalanche victim of the avalanche in Galtür 28.12.1999).

The NASA Human Factor Research, studies how human beings make critical decisions in the face of uncertainty. They developed the "Error Management", supposing that errors are human and cannot be completely avoided. They teach their teams to highlight errors in order to collectively learn and look for remediation. This attitude changes completely the perception of individual errors.

In other words, we interact with uncertainty with a combination of affective and cognitive response (Cline, 2004).

6 RISK REDUCTION THROUGH THE COMMUNAL LEADERSHIP COMPONENT

The choice of a coherent group (on physical and social level) reduces already the risk potential. This is part of the prevention and can be done upfront to the outings. It frees up the guide's capacity for information in situ. During the outing he has to consider the individuals and also be directive for security reasons. Therefore mountain guides need to know both leadership behaviors: the transformational with regards to the "individual consideration" and the transactional by "initiating structures" or rules.

The communal component of leadership behavior can contribute to the reduction of risk as it helps detecting and considering the individuals in the group and supports them to exploit the full potential of each of the participants. The guide can eliminate or alleviate risk prone factors like sudden fatigue and sometimes even injuries or anticipate overreactions caused by fear or fatigue.

A communal attitude is proactive to human problems as it considers the individual more as part of the endeavor and allows more easily avoidance and mitigation of risk prone situations.

This may lead to the shortcut that communal behavior has less risk propensity, as it is more congruent to the "feminine" gender role. Studies from Booth & Nolen (2009) say that preferences for risk taking are sensitive to the gender mix of the experimental group. This means that gender differences under uncertainty found in previous studies reflect possibly socially learned roles rather than inherent gender traits.

Knowing the individual means being able to predict his/her behavior. In general professional guides do not know their clients very well. He/She needs to check the individual risk propensity in situ as every individual has its own perception of risk, which can on top be influenced by additional security equipment (see risk compensation behavior by John Adams, 1995). Motives for participation and skill level can vary, "...which makes a blanket approach inappropriate. For some experienced participant a controlled environment with failsafe back up ... may negate the reasons for participation and may result in the introduction of alternative behavior" (Powell, 2007)

As the human element comprises the largest portion of the accident equation (Ajango, 2000), it seems a logical consequence that the decision cannot only be based on rational choices. Studies have demonstrated that analytical reasoning cannot be effective unless it is guided by emotions and affect (Slovic, 2002).

Decision-making as cognitive activity is influenced by time pressure, complexity, risk propensity and external context (and others less relevant here). Every single variable can modify the decision-making process and hence the outcome. Time pressure may lead to ignoring some choice alternatives - making information more efficient, information selectivity may change the threshold for responding etc.

Transformational leadership behavior covers pretty well the requirements on the human factor side and completes the transactional behavior, where structures have to be given and rules to be followed.

7 TRAINING METHODS

In the US outdoor programs are taken very seriously, famous Universities have them on the schedule and professional training organization develop curricula for outdoor leaders. The Outward Bound® Instructor Judgement Training Curriculum (Garrett, 2008) is based on case studies just like business schools use the well known Harvard Business School case studies to teach students how to spot insights and develop a strategy to cope with the detected problem. The avalanche database developed by Alain Duclos may be a first step towards a case study database.

Knowing about individual specificities in terms of learning and memorizing processes of participants is crucial in order to assure good assimilation of the training content. Attract attention of young people or adults, or making women and men speak out their feedback, needs adoption of specific clues (Schenck, Cruickshank, 2008). They also draw attention to one

specific point, that people having the ADHD (attention deficit disorder) are attracted to physical activities: *"It is not surprising that many climbers, extreme sport junkies, guides tend to be ADHD. The activities help satisfy their need for movement. Yet impulsivity and inattention is a hallmark of ADHD, combined with action or fierce concentration in boys and excessive talkativeness in girls."*

This background information might be taken into account in setting-up trainings for professional guides as well as for volunteer guides on association level. It should be possible to learn from the US experience and put some best management practices in place in European training courses and develop them further.

8 PLANNED METHODOLOGY

The methodology is based on qualitative interviews just like an inductive study departing from field observations and trying to find structures which might support the set up of additional training programs for different target groups.

Information gathered during interviews may give a new turn to the study, hence it is difficult to predict the exact structure at that stage.

- Interview teacher at ENSA and responsible for advanced training organized by the SNGM (Syndicat des Guides de Montagne)
- Interview (on voluntary basis) mountain professionals having had tragic incidents which then influenced their leadership style (via psychological support group)
- Analyze the motivation, the effectiveness, the degree of adoption, evtl positive marketing effects of the practice of a more communal leadership style through qualitative interviews
- Describe their personal techniques or logic how they prevent or how they cure human factor related risk.

9 PLANNED DISCUSSION POINTS

- If an adoption of communal oriented leadership style is possible in this male dominated profession, why not in other professional organisations? What is preventing adoption?
- Is a risk prone environment supporting or even indispensable for triggering a paradigm change?
- What kind of training has proved to be effective and can it be adapted to other professions (e.g. emergency doctors, firemen etc)?

- Could this training be also adopted for non-professional mountain guides (sport federations) guiding groups on a voluntary basis?
- Analyze impact of transformational leadership behavior on decision-making process (qualitative interview with guides adopting this leadership style)

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10.1 Further links

Witness report of Galtür avalanche (in German language):

http://www.geocities.com/janrehm/Jamtal_Frauke.html

Duclos, Alain : <http://www.data-avalanche.org>

NASA Human Factors Research :

http://human-factors.arc.nasa.gov/awards_pubs/hf101.php