

Human Factors in White Water Kayaking

I find the history of how Safety and Rescue concepts in white water kayaking have evolved and developed over the past 30 years or so really rather interesting. It fascinates me to see how equipment and thinking has transformed and yet, despite this, mishaps, injuries and even fatalities still occur with sad regularity.

I believe these incidents are down to the effects human factors have on a situation. The study of human factors in both aviation and surgical safety is long established, yet they are not specifically considered in our sport. The closest parallel is the work done by researchers like Ian McCammon and Bruce Tremper in the field of avalanche safety. Their concepts transfer very easily to our context indeed.

McCammon refers to the idea of **Heuristics**. Heuristics are best understood as rules of thumb that enable us to tackle repeatedly occurring similar or identical situations without the need for laborious re-evaluation. Essentially, they're mental evaluatory short cuts. The problem arises when we use these Heuristics unthinkingly to make decisions in a risky, changeable environment. They then become **Heuristic Traps**. In his work, McCammon identifies six Heuristic Traps that off piste skiers are prone to; Familiarity, Consistency, Acceptance, The Expert Halo Effect, Scarcity of Resource and Social Facilitation. While the research was conducted in the specific context of off piste skiing, the factors transfer to white water kayaking all too easily. Let's look at each in turn:

Familiarity

'Never run anything blind' states one of the fundamental rules of white water kayaking. Yet how many of us do precisely that on runs that we know particularly well? Probably more than would care to admit. We do this precisely because of familiarity. This allows us to run the section efficiently without having to jump out and have a look at every turn. However, we are possibly making a huge assumption that nothing has changed. Consider the following statement; 'There's never any trees wedged in this drop'. How do we know? Do we actually mean 'I've never known of any trees to be stuck in this drop'? A very different thing indeed. Interestingly, it tends to be the more experienced who fall into this trap.

Consistency

I'm sure that most people would agree that it's a good idea to make a plan of where we're going before we head off kayaking. However, that plan has to be flexible to take unanticipated changes in the environment into account. If we treat the plan as sacrosanct, we run the risk of falling into the trap of consistency – layering bad decision onto bad decision in order to fit with the plan, rather than adapt the plan itself. It's easy to fall into this trap, particularly if you are organising a big club trip and booking accommodation months in advance – the whole enterprise gathers a certain momentum towards that point.

Another type of consistency that needs to be considered is what Tremper terms 'consistency with self image'. There is a tendency in adventure sports for the activity to be sub divided into niches that company marketeers sell aggressively as a mini lifestyle in themselves. Mountain biking is a perfect example of this. There is a real chance that someone who identifies strongly with one of these niches and the behaviours attached to them will place themselves in higher risk situations in order to remain consistent with that image.

Acceptance

The desire to be accepted is a fundamental human trait. There is a strong chance that someone in a group will unthinkingly expose themselves to a high level of risk if they feel it will gain them acceptance in that group. Interestingly, McCammon's research focussed on gender acceptance, showing that mixed gender groups would place themselves in riskier situations than all male groups.

The Expert Halo Effect

Another human trait is the tendency to follow a leader. It helps simplify our decision making processes. Problems arise, however, when this leader doesn't have the expertise to formulate a safe plan or the maturity to realise that they lack that expertise. This is compounded by the other group members not being able to differentiate between expertise and 'bluff and gusto'. It needs to be remembered that expertise is transient; Steve may be expert at knowing where the put in for the section is but not at working out if there are likely to have been any changes in that section.

Scarcity of Resource

If we perceive something as rare, we will value it more highly. In white water kayaking, this is best illustrated by those who live further away from the rivers. People with limited access to white water will place themselves in higher risk situations because they perceive that the resource is scarce.

Social Facilitation

'Here, hold my beer...' starts many a tale of tomfoolery and it's not really surprising. We tend to be more likely to expose ourselves to risk without consideration if we feel others may be watching. Insidiously, social media tends to exacerbate this effect as our exploits are now easily broadcast to a wide audience via some GoPro footage (other action cameras are probably available).

These Heuristic Traps are influential but that influence is effected by other variables such as group size, training and group dynamics. We've seen the negative effect they can have on our decision making processes on the river, so how can we mitigate them?

Good planning. A solid planning process is our first step. The concept put forward by Colin Zacharias of the three option plan (Ideal, Safer and Safest) builds in an element of flexibility. For example on a trip to Dartmoor, the ideal may be to run the Upper Dart. However, if it is too high, the Loop offers a safer option. If everything is biblical, maybe not going at all is the safest option.

Good planning needs to use as varied a range of up to date information sources as possible and everyone involved in the trip needs to be involved in the planning. This may sound laborious but if everyone is involved, the group stands a far better chance of formulating a plan that works for all the members. This leads us neatly to...

Good communication and teamwork. There needs to be a culture of questioning within the group. Everyone, regardless of experience needs to be empowered to ask questions and make observations at all stages of the trip. The more experienced group members need to actively ensure this happens and no one is shouted down. If everyone is engaged, poor decision making is more likely to be exposed and can be tackled.

By adopting these simple approaches, we can start to reduce the likelihood of us or our friends falling into Heuristic Traps with potentially very bad consequences indeed.

If you fancy some further reading on the subject, *Staying Alive In Avalanche Terrain* by Bruce Tremper, is an excellent source, specifically the Human Factors chapter. There's also a good article here: www.summitpost.org/human-factors-in-avalanche-incidents/188636