Even experienced backcountry travellers succumb to these decision making traps. Regardless of avalanche knowledge or experience, watchful team members can identify human factor traps and take deliberate steps to enact solutions and correct errors. This section outlines a list of *Common Human Factor Traps* that lead to accidents. In the field, catch developing situations early and mitigate them using the *Human Factors Solutions* offered in the next section.

1. **Social Pressure**
2. **Overconfidence and/or Low Self Confidence**
3. **Closed Mindedness**
4. **Shortcuts**
5. **Impaired Objectivity**

Social Pressure
Social pressures exert an invisible and powerful force on perception and mentality. Several common Human Factor traps are related to these pressures.

- **Peer Pressure**: People are susceptible to peer pressure. It can be difficult to be the lone dissenter. Professionals such as ski patrollers and guides have additional status within the group and potential to affect decisions.

- **Social Proof / Risky Shift**: Social Proof (McCammon, 2002) is the idea that an action is correct because other people are doing it (seeing skiers on a slope of concern). The *Risky Shift* (Stoner, 1961) is a phenomenon identified where a group may accept a higher level of risk than each individual might choose alone. These two traps relate to what has been called the "herding instinct" - the illusion of safety in numbers. Avalanches are commonly triggered by the 3rd, 4th or 5th person rather than the first one down.

- **Scarcity**: Also identified as a common trap by McCammon (2002), Scarcity is a trap related to the pressures of a window of opportunity or a diminishing resource. The most common example of this is "powder fever" seen in popular backcountry areas with limited terrain. The desire to capitalize on a special, limited opportunity can cause people to make poor terrain choices.

- **Acceptance**: McCammon (2002) calls this the tendency to engage in activities that we think will get us noticed or accepted by our peers, or by people whose respect we seek. Alain de Botton (2004) refers similarly to "Status Anxiety," or the desire for status in modern society and the anxiety resulting from a focus on how one is perceived by others. It is easy to see how this pressure can become a trap that influences people to make poor backcountry decisions.

- **Individualism**: People sometimes have a compulsion to feel uniquely individual. (Skiing alone is one example). Those who do not embrace a team mentality often show an inability to communicate effectively, a lack of empathy for other group members, and an unwillingness to listen to the group. This leads to a lack of cohesion in the team and can influence group decision making adversely.

Overconfidence and Low Self Confidence
According to one study by Atkins (ISSW, 2000), overconfidence was the leading human factor attributed to fatal avalanche accidents by people with some level of formal avalanche training. Overconfidence is a dangerous trap as it generally results in more risky behavior.

- **Overconfidence Effect**: This effect is a well-established bias in which one's subjective confidence in their judgments is greater than their objective accuracy. Numerous studies demonstrate that this bias can adversely affect backcountry decisions.

- **Actual vs. Perceived Risk**: There is a gap between perception and reality. Since decisions can only be based on perceptions, this trap can leads to miscalculation of risk and poor terrain choices.

- **Technology**: In the modern world, technology has made possible the inconceivable. People sometimes demand more from their avalanche safety equipment, electronics, and snow study tools than that technology is actually able to provide. This can lead to a misperception of risk.

- **Education**: "*A large percentage of people caught in avalanches had formal avalanche training*" – McCammon (2000). A little knowledge can offer just enough confidence to overreach on decisions. It takes a lot of experience on top of training to make consistently good decisions, and what experts come to realize is that it is rare to be very confident when it comes to forecasting avalanches.

- **Abilities Outperforming Experience**: Skiers and snowboarders can become expert riders as teenagers in the boundaries of a ski resort. Sometimes, it is hard for them to imagine that they might only be beginners at backcountry decision making, even though they are capable of great feats of mountain athleticism. Confidence in physical abilities has a tendency to transcend to overconfidence in terrain decisions.

- **Low Self-confidence**: Low self-confidence can lead people to distrust their instincts and allow them to agree with a decision that they intuitively feel is wrong. In some cases, people with little formal training or group members with less experience than the leader, may observe or become aware of significant data that are crucial to the decision being made. These people are often unwilling to challenge or question the "experienced" leader or status quo in the group even when they have information or knowledge that others do not.

Closed Mindedness

The filters listed below affect the ability to observe, process, and respond to information, resulting in a deceptively incomplete picture. (These excerpts come from the Avalanche Handbook, 3rd Ed., 2006)

- **Conservatism**: "Failure to change (or changing slowly) one's own mind in the light of new information or evidence" – Avalanche Handbook (2006). There is inertia changing from what was known, to what is known now following new information. Before the adjustment is made, poor decisions may result.

- **Recency**: In one's mind, recent events dominate those in the past, which may be downgraded or ignored. This trap can allow more recent information to override more relevant information from the past. For example, this trap might lead one to base terrain choices on recent habits, rather than modifying the approach to match a successful strategy used in similar snowpack conditions not seen for 3 years.

- **Frequency**: Again, in one's mind, more frequent events dominate those that are less frequent. This is a trap because smaller storm events tend to be more frequent than larger ones, but larger ones can present higher danger.

- **Availability**: This trap involves making decisions based on past events easily recalled by memory, to the exclusion of other relevant information. The availability of memories to be recalled may cause unusual or exceptional events to be treated as more common and may bias the decision maker to disregard other important data.

- **Prior Experience**: People tend to see problems in terms of their own background or experience. For example, one can imagine that a snowboarder with experience gained riding a resort terrain park might have a different approach to terrain use than an experienced backcountry snowmobiler.

Shortcuts

Decision making shortcuts are ways to simplify complex scenarios. Humans tend to find the most energy efficient path, and it is generally easier to abandon or shortcut the complex process and just go for it.

- **Stress and Logistics Pressure**: Feelings of stress and pressure can complicate decision making. Uncorrected errors often result in increased stress, as do unanticipated conditions or scenarios. Time applies pressure. When stressed or under pressure the tendency is to take shortcuts to change the immediate scenario.

- **"Rules of Thumb" or Habits**: Habits tend to shortcut thoughtful evaluation. Independent rules of thumb may be functional at times, but they often oversimplify the problem. Good terrain selection is a complex process that demands unique assessment for each situation. Dependence on rules will lead to a decrease in accuracy, and errors can be fatal.

- **Decisions from Few Observations**: Observations take time and energy to gather. Consider if the quality/quantity of observations represents reality, or simply convenient support for the group's desire to not find instability. For example, "I don't see any avalanches; it must be good to go!"

- **Back to the Barn**: The urge to simply "get it over with" and return to safety, food, and shelter is powerful. Commonly, people make poor decisions late in the day, when people are tired and nearly home.

- **Expert Halo**: People with more experience or knowledge tend to be perceived as experts. Group members often shortcut their own cognitive processes and allow someone they perceive as more competent to dominate the decision making.

Impaired Objectivity

These examples illustrate circumstances where people fail to objectively perceive reality, but rather see the world through their own subjective filter.

- **Search for Supportive Evidence**: Tremper (2001) says that people often say, "I'll believe it when I see it," when actually it is the other way around. People tend to see what they already believe to be true. People tend to gather facts that lead to certain conclusions and disregard facts that threaten them.

- **Familiarity / Non-event Feedback Loop**: McCammon (2002) pointed out that many accidents happen in familiar terrain. People often feel comfortable in familiar areas. They let their guard down or base their current decisions on past experience. The trap here relates to the "Non-event Feedback Loop" in decision making. When backcountry decisions result in no avalanche, people may believe that they made the best choice. The traveler may have been simply "lucky." It may be only a matter of time before acquired habits that seem adequate result in an accident.

- **Blue Sky / Euphoria**: Avalanche accidents tend to occur during blue sky days following storms (Tremper, 2001). When experiencing such a day with great snow conditions the hormones released during the throes of euphoria can cloud judgment.

- **Optimism**: This is a bias also known as "wishful thinking," and has been referred to as "Commitment" by McCammon (2002). The more one prefers an action, the stronger the bias toward deciding to do it. Optimism to the exclusion of disappointing information can lead to the equivalent of rearranging the deck chairs on the Titanic.

Case histories and knowledge describing common misperceptions and traps that lead to avalanche accidents can help improve self-awareness. This alone may prevent a poor decision with serious consequences. On the other hand, it may not.

Consider the following:
"A review of fatal United States avalanche accidents in the 1990's shows terrain, weather, and snowpack conditions are generally contributory factors to fatal avalanche accidents; human factors are the primary factor" (Atkins, 2000).

A choice to recreate in avalanche terrain is choosing to enter a potentially hazardous environment. Choosing to participate in this course is an effort to learn methods to actively manage risk in avalanche terrain. Ironically McCammon's 2000 ISSW paper "*The Role of Training in Recreational Avalanche Accidents"* showed that **a large percentage of people caught in avalanches had formal avalanche training**. It is true that at best, "we are estimators of snow stability." **Faced with uncertainty one can experience emotions that destroy self control that is essential to rational, constructive decision making** (Kahneman *and Tversky, 1979*). One should "think about how we think" in the backcountry.

The previous section discussed and identified human factor "traps." In addition to being able to identify these traps it's even more important to have a strategy in place that can "derail" these early. The Human Factors Solutions are a good way to manage and avoid Human Factor traps.

In the AIARE 1 Avalanche Course, we give you the framework for making good decisions in the backcountry.
In the classroom and in the field, this course offered the opportunity to learn about or practice:

- The types of avalanches and the problems they create.
- How to recognize avalanche terrain and the terrain factors that make snow more or less prone to avalanche.
- How snowpack layers form and change over time.
- Obtaining the local avalanche bulletin and making it relevant both during trip planning and in the field.

- The importance of observing critical avalanche activity, snowpack & weather factors that effect Avalanche Danger
- A process to plan for travel in avalanche terrain and how to create useful trip plans with alternate route options
- How to work as a team to benefit from group interaction and experience; and how human factors play an important role in quality observations, terrain choice and risk reduction
- How to integrate your observations of the avalanche danger factors, the human factors, and the planning and preparations into terrain choices
- How you can use teamwork, communication, group management, and travel techniques to reduce your exposure to risk and/or the consequences of an error
- How to effectively rescue your companions in case you make a terrain selection error.

Armed with this new knowledge and experience, you will be better prepared for the complex decisions ahead. But remember:

"The avalanche doesn't know you have taken an AIARE 1 Avalanche Course!"

In fact, more people are caught after taking an avalanche course. Perhaps it gives people a false sense of confidence, or the idea that they know all there is to know, or maybe they let their human factors override all that they learned in their course. The AIARE course instructor played a big role making your journey into the backcountry a safe one. He or she will probably not be with you the next time you head in to the backcountry. Applying what you've learned in this course will take time. When you're unsure, don't travel in avalanche terrain. You can always find terrain to recreate in that is not in avalanche terrain and still have a blast.

The bottom line is that no course can keep you from being killed in an avalanche. In the end it is the decisions you make about the terrain. Remember to always go with caution and err toward a margin of safety. When confidence is low, maximize your observations but minimize your risk exposure. This will assist your learning over time and keep you from making a poor choice with serious consequences.