

TEMPERED MINDSET NAVIGATION FOR AVALANCHE RISK DECISION-MAKING INTERNATIONAL SNOW SCIENCE WORKSHOP 2026, WHISTLER, CANADA

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ABSTRACT: In 1900, no one died in an avalanche because of a buried surface hoar layer; the language to describe that problem did not yet exist. People often treated avalanches as acts of God. Over time, however, careful observation and the naming of processes and behaviours of snow—advanced by pioneers such as André Roch—transformed avalanche understanding and reduced risk. Human factors present a similar challenge. The opportunity is to observe the mindset conditions that shape behaviour and embrace the language that emerges so that we can manage our mindsets, and by extension, our choices more effectively.

The difficulty, of course, is that describing human behaviour is far more painful than describing snow-pack behaviour. Surface hoar does not grieve after a fatality. We do. Naming the patterns in ourselves can feel uncomfortable, even threatening. Yet once we speak something into existence, it becomes manageable. Agency over mindset creates the possibility for more nuanced control over action. This represents a significant step forward in avalanche education: beyond seeing ourselves as victims of human behaviour and toward becoming active stewards of tempered mindset decisions. All of us can make sound decisions in avalanche terrain. Yet culture, time pressure, peer influence, ingrained habits, insecurity, economic stress, or antique survival mechanisms can pull us off course. When we allow these pressures to go unrecognized, our mindset shifts away from balanced functioning, toward unhelpful extremes.

This presentation introduces the language of limiting mindsets, over-expansive mindsets, and a balanced middle path or tempered mindsets (Figure 1). It also presents eight mindset trios that provide a practical language for recognizing both optimal and non-optimal states in avalanche decision-making (Figure 2).

Figure 1.0 Mindset Calibration for Avalanche Risk Decision Making

Limiting Mindsets		Tempered Mindsets	Over-Extended Mindsets
		The Middle Path	

Balanced Mindset = Better Decisions= Better Outcomes

These trios offer a very high-resolution framework for identifying mindset patterns, naming them, and working with them before adversity distorts judgment in avalanche risk decision-making.

KEYWORDS: Human Factors, Adversity, Agency, Mindset, Balance, Sound Decisions.

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1. INTRODUCTION

A feature of working in snow and avalanche terrain is understanding that both snow and human behaviour are profoundly complex. Snow is complicated because it constantly changes with variables like wind, additional precipitation, and temperature, which is adversity. Humans are complex for many reasons, including that we can be unpredictable in how we respond to situations, especially adversity.

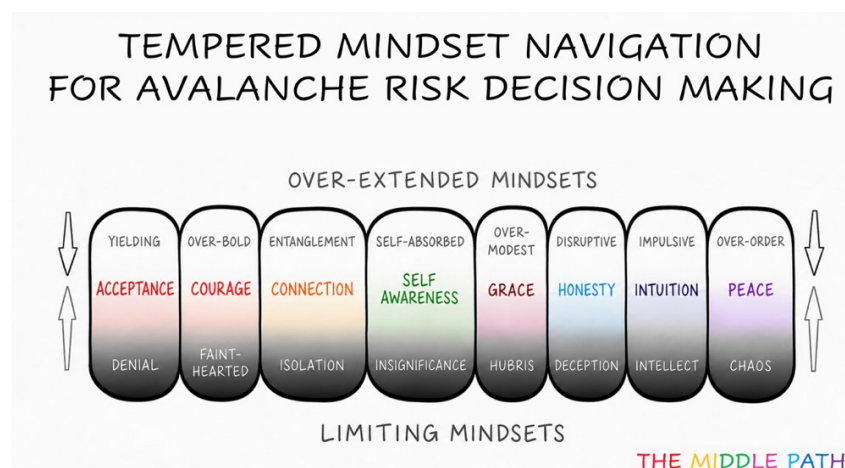
Avalanche risk decision-making with dynamic snow conditions calls for us humans to align with the best version of ourselves. Professionals sometimes make the hazardous assumption that an idealized human exists, assuming a base level of maturity and competence based on position. Fisek, M.H, et al (2005). In reality, human decision-making capacity is pulled off course by culture, biases, time pressures, individual or organizational unconscious habits, insecurities, economic stresses, or ancient survival mechanisms. Human decisions and the actions they initiate can become less stable when exposed to these adversities if we are not aware that we can choose our mindset and direct our actions. Unlike snow, humans can choose our response when situational pressure or adversity is applied. Psychologist Viktor Frankl wrote, *“Everything can be taken from a man but one thing: the last of the human freedoms—to choose one’s attitude in any given set of circumstances, to choose one’s own way”*. This is critical because allowing adverse pressures to go unmanaged shifts our mindset away from a balanced, tempered optimum and toward unhelpful extremes, negatively affecting decision-making. Dweck (2006) identifies what she calls fixed and growth mindsets. A fixed mindset defends, avoids, rationalizes, and resists. Her growth mindset seeks feedback, admits uncertainty, learns from mistakes, and remains open. I have observed, however, that any mindset, when taken too far, can become hazardous (Figure 2.0). An optimum tempered mindset, Courage, for example, can become overboldness, which increases risk exposure, and while in the grip of faint-heartedness, paralysis or panic can foster poor judgement. The opportunity is to recognize when adversities pull us away from the optimum tempered mindset, name the limiting or over-extended mindset and work to rebalance.

This active choice is called agency, a form of cognitive self-control and healthy personal autonomy. The definition this paper uses for agency is from Bandura, A. (2006): *“Agency is the capacity to make choices and to act on those choices in ways that make a difference in one’s life.”* Agency, therefore, is critical for avalanche risk decision-making because defaulting to circumstances does not equate to making sound decisions. Agency is the recognition of the opportunity to claim elevated responses to adversity and choose the most effective course of action. Without claiming agency in decision-making, we forfeit control over random thoughts, emotions or even seemingly rational economic demands, rendering every effort avalanche educators, forecasters, and snow scientists make inconsequential by minimizing or ignoring every warning, best practice or tool they espouse. By exercising structured agency, the individual is further empowered by the knowledge avalanche educators, forecasters, and snow scientists render, harkening to a symbiosis between knowledge of snow and knowledge of human behaviour. The words and language presented in Figure 2 help us become aware of a menu of challenges and responses we have access to and allow us to author our own story from what is being experienced. This is the fundamental choice we have the opportunity to claim.

2. METHOD AND BACKGROUND

The Tempered Mindset Navigation for Avalanche Risk Decision Making (Figure 2.0) (Tempered Mindset Model) presents language created through phenomenological research of my lived experience of the 2003 La Traviata avalanche tragedy, which claimed the lives of seven clients. The research began by writing and publishing Buried, Wylie, K. (2014 & 2020). This publication was a humble first step in understanding the human factors that contributed to that disaster. Continued research and development since 2020, with “Buried” as a nucleus, has resulted in the Tempered Mindset Model. I developed this model because the obvious departure from professional avalanche hazard mitigation best practices demanded an understanding of the human processes at play. It is now clearly understood that limiting and over-expansive mindsets dominated every aspect of the decision-making processes that led to the La Traviata tragedy. I do not explicitly unpack La Traviata in this paper because of the limits of this publication. The Tempered Mindset Model (Figure 2.0) captures categories of mindsets I have identified as influencing key decision-making moments throughout the Traviata experience. Later research and case studies have affirmed the relevance of these mindsets for other industries and the stories of the human journey of transcendence.

Figure 2.0



A several-year study conducted of major accidents across numerous industries, as part of my phenomenological research using a version of the Tempered Mindset Model, illuminated two things: First, there has been a conspicuous lack of language to describe human factors in a way that articulates intrinsic processes that are consistently at play. For example, the Rogers Commission Report (1986), published after the Space Shuttle Challenger disaster, is very articulate in describing technical issues with “O-rings.” Yet the language used to describe errors in judgment lacked the same nuance and provided little resolution for understanding the profoundly flawed launch decision-making process. Secondly, limiting and overexpansive mindsets have been hiding in plain sight in well-known case studies across many industries. For example, *limiting* and *over-expansive* mindsets clearly played roles in the Space Shuttle Challenger launch decision. For example, “*Denial*” of the professional observations and opinions of contractor engineers was a key factor in the tragedy, along with other limiting and over-expansive mindsets. The Commission's chronology states that, “Thiokol's recommendation was not to fly Challenger until the O-ring temperature reached 53°F.” Limiting and over-expansive mindsets provide a language for understanding the mindsets that played into the Titanic, Tenerife airline disaster, Chernobyl, Deepwater Horizon, and, most recently, the Boeing 737 Max 8 disasters.

Tempered mindsets have been hiding in plain sight within human stories of transcendence. The journey to find balance from denial to acceptance can be found in the Johnny Cash biography. The journey from Hubris to balance with Grace is the narrative of both Oskar Schindler and John Nash. Transforming a life by landing on honesty is the children's story of Pinocchio. In these (biographical) stories, the Tempered Mindset process appears to be implicit, and they clearly identify the process of human developmental change.

Ian McCammon (2002) ISSW paper on heuristic traps explores the fact that humans make shortcuts in decision-making that are at times vulnerable in changing and dynamic environments. His work provided some insight into my experience. Yet the notion of Heuristic Traps fell short of capturing the language for the intrinsic complexities I experienced within myself, as a guiding team, and within the larger ski touring group. The language did not travel as deeply as the situation I experienced. Yet, seeking acceptance resonated, as well as I do remember pondering the true competence of the “expert” before the calamity.

James Reason (2000), in *Human Error: Models and Management*, writes that accidents typically emerge from overconfidence and deference to authority, among other things. He argues that you can't change the human, but you can change the conditions humans work in. Reason's work was important in helping us craft better work environments, but its vulnerability is that the systems humans create are built and maintained by humans. Human failing can be and is baked into the strategies we use. Also, the notion that the human can't change is fundamentally untrue.

3. PROGRAM DESCRIPTION

While likely incomplete, the Tempered Mindset Model (Figure 2.0) offers the beginning of a language by which individuals can track, workshop and debrief what mindsets are at play in their winter mountain practice, especially when situations become laden with adversity. Within this framework, Ac-

ceptance, Courage, Connection, Self-Awareness, Grace, Honesty, Intuition, and Peace represent balanced mindset capacities that support effective avalanche risk decision-making. At either extreme, these capacities become distorted. Courage can drift to over-boldness or slip to faintheartedness. Grace can drift to over-caring or slip to hubris. The model provides practical language to help individuals and teams recognize when they are drifting toward mindset extremes that compromise judgment and increase risk exposure. It allows the individual to claim agency in their avalanche risk decision-making practice by choosing to engage with a balanced mindset. The model encourages us to move beyond typical binary thinking. It recognizes that every mindset has a purpose that serves us, like faintheartedness or fear, yet can become maladaptive when underdeveloped, allowed to run amok, or pushed too far. The process is one of awareness, so that the freedom to choose our response is the core practice.

3.1 Not Rule-Based Decision Making

The Tempered Mindsets Model is not rule-based decision-making. Rather, it preserves the idea that we can choose. For avalanche risk decision-making, the challenge is not merely avoiding poor decisions. The challenge is maintaining mindset balance while uncertainty, emotion, and antiquated patterns continually pull decision-makers toward extremes. Awareness and the willingness to workshop to reduce human reactivity are key to maintaining our freedom to choose. The language allows us to see patterns in our behaviour, so we can reflect and make necessary adjustments and changes. The Tempered Mindsets process honours the dynamics of being human and potentially draw out the best possible decision-making input quality from us.

Figure 3.0 outlines Limiting, Tempered and Over-Extended mindsets trios and the decision-making input quality I have observed in my lived experience and through study of numerous case studies across industries. Each trio is to be explored left to right.

Figure 3.0

Limiting Mindset	Limiting Decision Input Quality	Tempered Mindset	Balanced Decision Input Quality	Overextended Mindset	Overextended Decision Input Quality
Denial	Ignores observations, evidence, responsibility, or changing conditions. Perception is bent to fit desires.	Acceptance	Acknowledges self, others, data and situational realities. Creates the strongest platform for sound decisions.	Yielding	Surrenders agency to others, circumstances, or hazards. Passive compliance replaces judgment.
Faint-Heartedness	Fear inhibits effective action, communication, initiative, and action. Important information remains unspoken.	Courage	Balances fear with action. Encourages intellectual, social, emotional, physical, and intuitive participation.	Overboldness	Underestimates hazards, overstates certainty, and increases unnecessary risk exposure.
Isolation	Reduced access to information from self, others, nature, facts, or experience. Decision quality deteriorates.	Connection	Facilitates information transfer and nuanced understanding. Improves situational awareness.	Entanglement	Emotional attachment clouds objectivity. Personal investment obscures emerging hazards.
Insignificance	Valuable observations and insights are withheld. Agency and contribution decline.	Self-Awareness	Recognizes both personal value and limitations. Supports responsible participation.	Self-Absorption	Ego-driven decisions distort judgment. Identity becomes tied to outcomes or status.
Hubris	Entitlement, excessive pride, and lack of self-control increase vulnerability to error.	Grace	Balances confidence, humility, stewardship, gratitude, and care.	Over-Giving	Excessive accommodation weakens boundaries, mentorship, and personal responsibility.
Deception	Distorts information about self, others, or conditions. Weakens risk assessment.	Honesty	Supports accurate interpretation of conditions and authentic communication.	Disruptive Honesty	Information is delivered without utility, timing, or sensitivity, reducing effectiveness.
Intellectualization	Rationalizations replace authentic awareness. Discomfort is avoided rather than addressed.	Intuition	Integrates information beyond conscious analysis. Supports wise judgment under uncertainty.	Impulse	Desire masquerades as insight. Decisions become reactive and reward-seeking.
Chaos key	Reactivity, agitation, and emotional volatility impair judgment.	Peace	Maintains centred awareness amid uncertainty and adversity.	Control Freak	Excessive control reduces adaptability and constrains appropriate responses.

Below, I provide more detail on three of the mindset trios and give specific examples.

3.2 Courage: Between Faint-heartedness and Overboldness.

The second trio in the model is faint-heartedness, courage and overboldness. The balance between faint-heartedness and overboldness leads to authentic courage. This follows Mert's (2025) *Courage-Based Motivation Theory*. His work presents courage as the "Essential Core of Human Motiva-

tion.” Mert’s paper harkens back to Aristotle, who found courage as the balance point between cowardice and recklessness. In this paper and in all of my work, I present this idea and many facets of courage; intellectual courage (or the sharing of our ideas), social courage (the ability to speak in challenging social situations), physical courage (the ability to use our bodies effectively in situations), emotional courage (the willingness to communicate information that is coming through our emotions), and finally intuitive courage (the ability to share when our intuition is providing important information that has no measurable basis). A tempered, courageous mindset is the best position from which to make decisions. A dash of faint-heartedness or fear plays an important role in decision-making. When balanced with courage, faint-heartedness or fear helps us respect the potential consequences of a situation.

It is self-evident that when fear runs amok, it does not lend itself to sound decision-making. A person can be afraid to share their ideas, reticent to communicate needs, unable to share emotional information, and silent about important intuitions. Physical faintheartedness may affect athletic performance, which may amplify hazards. Furthermore, in profoundly frightened states, a person’s decisions come from the brain’s primitive aspects rather than the prefrontal cortex.

Overboldness is the near absence of fear in a potentially consequential situation. Over-boldness shows too little respect for the power inherent in a situation, which can lead to undesired outcomes. In this state, ideas are shared too confidently or arrogantly, which may erode receptivity; social over-boldness can undermine sensitive situations. Emotional overboldness centers on the emotion and not the information the emotion is pointing out, which can derail a situation. Physical overboldness can easily lead to injury or a poor choice, like dropping onto a hazardous slope. Intuitive over-boldness tends to claim intuitive insight inappropriately without the requisite sensitivity.

3.3 Connection: Between Isolation and Entanglement.

True connection with another human being, as Brené Brown (2010) articulates, that true connection requires vulnerability. The willingness to communicate about oneself authentically. Expanding on her ideas, we can add connection to self, the facts, nature, action, and animals, all of which require various forms of vulnerability. Connection very simply facilitates relationships that foster the transfer of information. Information is essential for making the best possible decisions in complex situations. When we connect with ourselves, others, nature, facts, and even animals, we can make the best possible decisions because relationships allow informative nuance to show through in ways that would otherwise be impossible. The act of digging a snow profile can expose us to the vulnerabilities of the snow, and ourselves, because it can hopefully expose our hopes and desires.

Conversely, isolating undermines the flow of information that connection brings. We can and do isolate ourselves from others, nature, the facts, action and animals, especially under adversity. Divorced from intimacy, effective decisions elude because when isolated from others, humans are also distanced from information. For example, I can isolate myself from a colleague who has important information to share about their observations of snowpack in our area. Isolation is very different from solitude. Solitude is a vulnerable state that allows us to connect with ourselves and is a powerful practice for making important decisions. Time and space allow for the reflection and insight we need.

Entanglement, on the other hand, means that we are too close to ourselves, others, nature, action, and animals to be able to see things as they are. When entangled, an unhealthy ego or emotional connection blinds the individual to obvious, sometimes hazardous realities. A person can become entangled with a set of goals, such as backcountry skiing, to the point where they lose all objectivity in decision-making.

3.4 Grace: Between Hubris and Over-giving.

Grace is a perfect balance of Hubris and Giving. Hubris is the birthplace of bold ideas and action. Hubris is the ability to envision something that pushes the boundaries of a situation. When a hubristic mindset is balanced with the gifts of humility, self-control, gratitude, empowering others, stewardship and right action, a situation finds its healthy, grace-filled balance. The vision to see a ski descent line is, in some sense, hubristic. The wise temper this vision with care, humility-centred planning. When the athlete has a bold vision and waits for their readiness, the right conditions, and the right forecast, grace follows. This tempered mindset is a beautiful place to find oneself because it empowers both self and others. We can do bold things safely when we do them with care.

However, when a hubristic mindset (excessive pride) is completely running the show, humility and self-control are absent. Gratitude morphs into entitlement, others are disempowered, and there is a lack of the care that is required for stewardship, all of which undermines right action. Decisions that stem from

this mindset can be downright hazardous. Unfortunately, this mindset and the hazards and consequences it produces are not limited to the hubristic individual. Others can suffer from the decisions of a hubristic individual.

On the other hand, an over-giving mindset is akin to martyring oneself. A person can be too humble, too controlled, too grateful; they can also empower others inappropriately, undermining their own wisdom. In this mindset, a person can be too centred on taking care of others and too concerned about helping to the point of smothering what is truly needed.

4. DISCUSSION

For this paper, I have chosen three prominent trios most common for the avalanche practitioner. Courage, Connection, and Grace. The environments avalanche practitioners travel in require Courage, Connection and Grace as healthy mindsets to engage effectively in these hazardous environments. Their limiting and overexpansive counterparts render avalanche risk decision-making particularly vulnerable to undesired consequences.

4.1 Agency and Avalanche Risk Decision Making.

As mentioned before, the definition of Agency from Bandura, A. (2006): *“Agency is the capacity to make choices and to act on those choices in ways that make a difference in one's life.”*

Tempered courage, the ability to move with faintheartedness or fear to exercise intellectual, emotional, social, and physical courage, fosters freedom. The idea that the environment (The Mountains) provides the freedom we seek is an error. If we fail to claim decision-making autonomy through courageous action, we forfeit the freedom regardless of where we work. Individually and in teams, it is of critical importance to understand the real role courage plays when working in the winter mountain environment. One of the risks associated with avalanche risk decision-making is not only the risk of being in an avalanche, but it's the risk of being traumatized by being in an avalanche. Trauma is linked to a feeling of helplessness Herman, J. L., (1992). Taking courageous action is critical for agency and for mitigating avalanche risk and its own downstream consequences

Tempered connection and the skill of allowing oneself to connect by nurturing vulnerability with self, others, nature, the facts, and taking action. These all require us to be vulnerable or to have some skin in the game. Connection makes a powerful difference in our lives, and choosing to connect allows for this brand of agency. In avalanche risk decisions, this means that we can speak about and for ourselves, listen to others and nature and take authentic action. We do this because we know that teams perform better when there is a social environment that allows for authenticity. Edmondson, A. C (1999). I see authenticity as connecting with all elements in the situation

Grace is the tempered mindset that disperses power and gifts agency to others. The interesting thing about Avalanche Risk decision-making is that, as with most hierarchical social structures, there is a tendency to concentrate decision-making power in a team leader. Some hubristic leaders prefer to have power. These individuals are encouraged to know that they can centralize power, but they can never centralize consequence. Everyone is immediately exposed to an avalanche, and everyone connected to them experiences consequence. Weick and Sutcliffe (2001) in their work with HROs, or high-reliability organizations, encourage resisting concentrations of power. They espouse deference to expertise rather than deference to authority. This produces individual agency for the people on the front lines, most exposed to consequence.

5. CONCLUSION

This work has great potential to give avalanche practitioners a language for understanding themselves and the mindsets at play in their decision-making processes. Words are powerful, and they offer profound leverage to empower ourselves. The tools presented here can be used effectively before, and after an avalanche involvement for managing the associated risk.

There are three big issues to consider. First, language empowers understanding but the effort to shift behaviour is still required from us individually. That will always be the case. Second, this tool is for individuals and well-connected teams. In the wrong hands, it can be used as a weapon to judge others. The encouragement is to use the tools for self-improvement. Third, what exists in the individual typically resides in the culture and vice versa. Therefore, the challenges we see are best addressed in ourselves, and our teams because they affect the products of our efforts. We live in a world of fractals, and that is important to remember.

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