



AAC Publications

Human Factors

Six Cognitive Traps Behind Climbing Accidents

A shared lexicon like ANCHORS can help all climbers to recognize and discuss patterns that can lead to climbing accidents. Photo: Bryan Miller

THE ANCHORS FRAMEWORK

Most climbing accidents are not random. In ANAC 2025, I reported grounded theory findings from two decades of accident data. There were five recurring themes:

1 - Risk normalization and gym-to-crag overconfidence: Familiarity or misplaced confidence eroded vigilance.

2 - Errors in system transitions: Moments of anchor reconfiguration, lead swapping, and rappel setup proved disproportionately dangerous.

3 - Fatigue, pressure, and the descent: Commitment bias and time pressure narrowed decision-making late in the day.

4 - Magical thinking about fixed gear and objective hazard: Social proof substituted for independent assessment.

5 - Partner dynamic: Hesitation to speak up; the tendency to defer to a more experienced partner.

Behind technical errors are predictable, recurring behavior patterns. Since 2025, we have done survivor interviews, field visits to GTNP, the Gunks, and Red Rock Canyon; and developed the **ANCHORS** acronym.* **ANCHORS** translates six themes—**Acceptance, Normalization, Commitment, Halo, Others, and Rush**—into a shared language, grounded in the data and refined by survivors' own words. ANCHORS is not a checklist; it is a language for recognizing and discussing the patterns that lead to accidents.

***Editor's Note:** Researcher Ian McCammon developed the FACETS model for backcountry skiing. ANCHORS borrows his approach.

ACCEPTANCE: The cost of image management. **Examples:** Climbers skip clips, push past the point of no return, and attempt terrain beyond their experience. **Effect:** To avoid looking scared, inexperienced, or uncommitted before others. **Countermove:** Name the pressure before it shapes a decision. **Question to ask:** Does anyone feel pressure to skip an important safety-related step?

NORMALIZATION: The erosion of vigilance through repetition. **Examples:** A route done a dozen times, a descent taken every season, pro that's always held. **Effect:** Familiarity produces a sense of safety divorced from the reality of conditions, equipment status, or team capacity. **Countermove:** A fresh check every time: Run the rope through your hands, inspect the gear, verify your rope length for rappel. **Question to ask:** Has anything changed since we last did this?

COMMITMENT: The sunk cost on a climb. **Examples:** Hours traveled, effort spent, proximity to the

top. **Effect:** It's hard to turn back from the summit—"We'll just keep going..."—even when there are clear cues to stop. **Countermove:** Set a hard turnaround time before leaving the ground; define success as trying hard—not the summit or chains. **Questions to ask:** If we keep going, will we die? Is this pitch worth risking my life?

HALO: The deference to perceived authority. **Examples:** A more experienced, credentialed, or confident climber inhibits dialogue and/or verification with a partner. **Effect:** The leader decides to rappel off a questionable anchor, while the partner stays silent, even having identified a danger. **Countermove:** Agree upon a social contract; create an agreed-upon time to discuss key issues. **Question to ask:** Does anyone object to the anchor or systems we're using?

OTHERS: Following non-definitive cues versus independent assessment. **Examples:** Letting cairns, chalk marks, fixed gear, and another party above replace the topo and the team's own judgment. **Examples:** "There was chalk up there, so that's where I went." "This anchor looks bomber—it must be the rappel." **Countermove:** Confirm before committing; check the topo. **Questions to ask:** Do we know this is the right way? Is this anchor solid? Who are the climbers above us?

RUSH: Time pressure in any form. **Examples:** Fading daylight, bad weather, car shuttles, the need to get to work. **Effect:** External deadlines create tunnel vision and/or tempt the omission of critical steps. **Examples:** "I was thinking about the drive and I forgot to tie in." **Countermove:** Slow down; name the step being skipped—and then do it. **Question to ask:** Which step are we skipping, and why?

ANCHORS tend to stack: An accident can start with one element and be compounded by another; avoiding these incidents requires a shared lexicon and awareness. Below are two ANCHORS Analyses from this year's ANAC. The climbers was interviewed; each analysis identifies active traps, where they compounded, and what might have interrupted them. The goal is not to second-guess—it is to make a pattern visible. A pattern named, is a pattern that can be changed.

LEADER FALL | Fixed Piton Broke

West Virginia, Seneca Rocks, Southern Pillar—West Side

Kennedy Miller was leading the second pitch of Climbin' Punishment (3 pitches, 5.8+). He moved confidently until he ran out of the correct gear. He saw a fixed piton and clipped it. Not knowing its reliability, he reasoned that something was better than nothing. Kennedy tested it by feel, knowing he should probably back it up. Moments later he fell. The piton broke and he dropped 65 feet. [See report [here](#).]

Risk Normalization was central through institutional trust, the tendency to treat fixed gear as imbued with a "magic" reliability. This was reinforced here by Others: A piton placed by the route's first or early ascensionists read as an "endorsement" of the placement.

Commitment was present at the pitch level. Kennedy had a full rack of nuts but didn't place any—the terrain felt awkward, and stopping seemed to increase his fall risk. He chose to continue rather than place a nut or build an intermediate anchor and bring his second up with more gear.

TRIPLE FATALITY | Single Fixed Piton Pulled

North Cascades, Washington Pass, Liberty Bell Group, North Early Winters Spire

Four climbers were retreating down a non-established rappel route. Toward the bottom, they could not locate a good anchor and chose to use a single fixed piton. It failed. Three died and the single

survivor walked out with severe injuries. [See report [here](#).] The human factors leading to this tragedy were identifiable, compounding, and interruptible.

Commitment—after 11 hours, the team retreated, long after making the decision would have been prudent. The invested cost was compounded by Rush. One climber lacked an adequate jacket and was getting cold. Snow had begun to fall. Daylight was fading. Fatigue crept in. A USFS accident report notes that urgency may have contributed to choosing the single-piton anchor. Other options, such as digging for solid placements in the snow or bypassing the piton in search of better gear lower down, were both seen as time-consuming. This was a fatal oversight.

Normalization followed from the success of three prior rappels. The third station's bolt-and-fixed-piton anchor may have built their confidence in fixed pitons.

Halo was explicitly documented in a USFS report. The sole survivor was the least experienced member and later stated that he had assumed one of the more experienced climbers had assessed the piton. No discussion occurred. Deference to perceived authority filled the gap where a safety conversation should have been.

Commitment and Rush narrowed the options the team was willing to consider; **normalization** made the piton feel more trustworthy than it was; **halo** prevented the question from being asked. By the time all four climbers were clipped to a single weathered piton with no backup, each factor had done its work.

—Valerie Karr, Ph.D.

Citations

McCammon, I. (2022) Evidence of heuristic traps in recreational avalanche accidents. In Proceedings of the International Snow Science Workshop (pp. 244-251) Penticton, BC, Canada.

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Images



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