

## Human-Factors and Digging



Submitted by Doug Chabot on Wed, 12/31/2014 - 05:33

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Published in the February 2015 issue of The Avalanche Review.

As an avalanche forecaster and educator I pay close attention to teaching the recreating public about heuristic traps, aka human-factors, and their role in avalanche accidents. A powerful voice is *Powder Magazine's* riveting five-part Human-Factors series which did a great job of pointing out those traps.

Doug Fesler and Jill Fredston put human-factors squarely in the middle of the avalanche triangle in the 80s in their first edition of *Snow Sense*. Ian McCammon broadened this in 2002 by formalizing the six most common traps skiers encounter, easily remembered by the FACETS acronym (Familiarity, Acceptance, Consistency, Experts, Tracks/Scarcity, and Social Facilitation). Once we know these traps exist we can avoid them most effectively by having an open conversation with our partners raising everyone's awareness about impending human-factor disasters. But this alone is not enough. As responsible backcountry skiers we miss something very important if we do not dig a snowpit. Identifying human-factors in conjunction with gathering relevant data is a winning combination.

There has been a recent push from some educators, forecasters and other professionals *away* from digging. We often hear, "People do not dig and there's no way can we get them to." We disagree and, more, have found the opposite. By developing a culture of digging pits, people dig. We emphasize the importance of digging in our advisories, videos and classes, which results in many people pulling out their shovels and learning what is under their feet. This behavior change is not anecdotal. It is real and measurable. *Mark Staples writes about a survey on avalanche education and stability tests in an [accompanying article](#).*

Another excuse for failing to dig a pit is, "Stability tests are an advanced skill and too complicated to interpret." Again, this is false. In our Avalanche Awareness field classes we teach new backcountry skiers to use an Extended Column Test (ECT) and only pay attention to whether the column propagates or not. Propagation equals instability and students grasp the simplicity of the message.

When we stop and dig a few important things happen: we pause, take a breather, come together and look at the snow. Everything slows down. Communication becomes possible again instead of being spread out and checked out with ear buds pushed in. On a few days the instability is obvious and a decision to not ski is easy. Other times the danger is so low and the snowpack so strong that you can go anywhere and ski anything. Unfortunately, most of our days do not fall into these extremes, days when the dangers are more ambiguous, days when it's easy to fall into heuristic traps, days when a stability test is extremely valuable.

Digging is a reliable and quick way to search for instability when the signs are not obvious.

Most skiers have already made the decision to ski or not by the time they reached the top of their run, but a critical question is still unanswered: what is under our feet? We can guess or we can know. *Knowledge is a powerful tool and personal responsibility requires due diligence.* Introducing the human factor into decision making will remain a large part of our avalanche education efforts, but we are now pushing people to take one more step and perform an ECT before descending because sometimes the snowpack surprises us with her answer. In our classes and videos we teach students how to execute this test in under three minutes because we know it can save your life. After skinning for an hour or more and reaching a decision to ski, a few more seconds, 180 to be exact, is a small price for valuable information. We have investigated far too many accidents where a quick pit and test would have revealed a show-stopper instability. For a person new to avalanche country we keep the analysis simple: *if it propagates do not ski the slope.* This forces the most adamant in a group to do serious mental gymnastics to justify skiing a slope when the column snaps clean. There are nuances with the test and scoring that more advanced users can debate, but people do not die from nuances. They die from an ignorance of what lies under their feet and an adamancy about that ignorance.

A quote in the fourth part of *Powder Magazine's* Human-Factor series sums up their importance. "If the 504 deaths [in the study] tell us anything," McCammon concluded, "it is that the six heuristic cues have the power to lure almost anyone into thinking an avalanche slope is safe."

Any of the six heuristic traps can lure us in, but one stability test can snap us out.