

are sold. In his spare time Bonifay enjoys spinning records, surfing, and snowboarding.

Megan Popovic

See also Wakeboarding

Further Reading

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Bouldering

Bouldering literally means climbing boulders. But what boulders should be climbed? The term *bouldering* encompasses the safest as well as the most extreme and dangerous ways of climbing. One definition states that bouldering is done on relatively small rocks that can be traversed without too much risk of harm if the climber falls. While doing this type of climbing, the climber does not make use of ropes and cannot climb higher than a few meters. In fact, climbing higher than 7 meters is often considered free soloing or free climbing. However, since many climbers still prefer to call free climbing an extreme variant of bouldering, and since it involves many similar techniques, this article will cover both ends of the continuum between absolute safety and extreme risk.

Human Urge to Boulder

Bouldering is one of the fastest growing variants of climbing. Some reasons explaining this popularity are that it can be done safely, there are rocks for every age and level of climbing, it can be simple and cheap, and not much equipment is required. The popularity of climbing can also be viewed from an anthropological and historical perspective. Why have all human beings, of all ages, and at all times found it joyful to climb and to boulder? When mountaineers are asked why they climb a mountain, they will often reply: "Because it is there." This answer refers to both the "purposelessness" of the activity (that is, there is no reason beyond the climbing itself) and to the human urge to climb,

to "conquer" a mountain, a piece of rock, or a glacier just because it is there and "asks" to be climbed.

The human urge to climb starts at a young age with the playful urge to keep the feet off the ground. Babies show a certain instinct to hang on to objects in their environment. Before they fully understand the concept of "falling down," they try to master the ability to climb. Games of not touching the floor give the child some feeling of magic. Climbing ropes and ladders and swinging from one apparatus to another remain some of the more popular kinds of games that are part of physical education.

When adult boulderers are asked to reflect on their passion, they often refer to a special or "pure" experience with nature. Bouldering is called the purest form of climbing or even the "essence of climbing." This description not only refers to the experience in nature itself, but also to the climbing techniques and particularly the unaided grips that are basic to all forms of climbing. To put it in sport psychological terminology: Bouldering ideally results in some kind of *flow experience*, in which the body takes over and knows what to do and where to go.

Although boulderers can be very competitive and are always comparing their achievements with those of others, the activity itself is very much an individual experience; it is usually bouldering alone that is the attraction. As female boulderer Bobbi Bensman describes it: "Climbing with others is great, but you can go bouldering solo—no partner, no gear, just you and the rock, and a pair of boots. I love the purity of the sport" (Bensman 1999, 8).

History and Evolution

Although bouldering became an international sport around the early 1970s, the origin of bouldering itself can be dated much earlier. Climbing boulders continues a long tradition of climbing, in particular gymnastic climbing. Ropes, ladders, masts, and poles have been used in physical education for centuries. Some of the early-nineteenth-century handbooks of the European pioneers of physical education contain illustrations of equipment similar to modern indoor climbing walls. Friedrich Jahn organized climbing competitions within his famous Turnplatze at the beginning of the nineteenth century. Rope climbing was even an athletic event at the Olympics between 1896 and 1932.

Some climbers will argue that the history of "artificial climbing" is unlike that of bouldering, which is all about the direct experience with unspoiled nature. Within the



A man bouldering showing close up of his bare fingers gripping a hold. Source: istock/Matt Theilen.

History and evolution of bouldering, several phases can be distinguished in which the “natural” and “artificial” play different roles.

Bouldering on actual rocks, without the use of special gear, can be considered the first phase. Although initially not necessarily meant as a playful activity, this way of climbing probably is as old as human existence. Phase two, climbing on artificial walls, also has a history going back more than two centuries, but it didn't become really popular worldwide until the late twentieth century.

A third phase within the evolution of bouldering can be distinguished with the modern manufacturer of artificial boulders that are then introduced into public spaces. Realistic-looking rocks of different sizes and levels of challenge are now made suitable for bouldering in suburban environments. For experienced boulderers indoor climbing is often considered a good way of practicing.

One can even define a fourth phase, namely climbing

on buildings—“building”—which has become an extreme sport activity in itself.

Equipment, Ethos, and Technique

The question of what equipment you need to boulder depends on the definition of the activity. Boulderers usually need climbing shoes, chalk, a chalk bag, and a crash pad that functions as a cushion when the climber falls. Some protection can also be provided by a spotter—a person who accompanies and assists the boulderer. Sherman (1997) mentions “the four essentials,” including a toothbrush to clean chalk and dirt from holds and a carpet patch to wipe the shoes.

Some purists of the sport not only refrain from taking any safety measures, but also resist using modern shoes or

chalk. The use of ropes is a controversial within the bouldering community. According to John Gill, who is one of the main pioneers of bouldering and who began practicing and promoting bouldering in the mid-1950s, a defining characteristic of contemporary bouldering is that ropes are not to be used. Although bouldering has become in some ways very much a "grown-up" sport (including grades of difficulty, measurements of performance, and lists of elite practitioners), there are still several controversial aspects to it. Chipping holds within the rocks is even more controversial than the use of ropes. Doing so can fundamentally change the rock as an existing problem. (Boulder routes are perceived immediately as puzzles or "problems" to be solved.)

Another controversial "trick" is the use of "cheater stones," placed on the ground to allow a climber to reach the first hold of a problem. Although climbing is often described as an individual experience, climbers can be fanatical about what they consider as the cheating of other climbers. The ban of "cheater stones" is however no fixed rule, and if it was, it would in the first place favor taller climbers. Many climbers agree with Bensman (1999), who states that being taller (and therefore being better able to reach the first hold) has not much to do with being a more talented climber.

It is evident that free climbing involves taking more risks, or, as one climber puts it, being "prepared to risk dying." The risks the climber experiences when climbing big rocks without ropes give the achievement a more outstanding and spectacular character. The knowledge that making a mistake can result in death requires an outstanding and well-suited psychological state of mind.

Climbing technique itself, however, does not so much depend on the height, but rather on the texture and difficulty of the rocks. Every rock, and every climbing area, has its own character and specific difficulties and challenges. Only the highly experienced climbers can explain what the particularities and differences are when climbing in famous boulder places, like Fontainebleau (France), Yosemite (U.S.), the Buttermilks (U.S.), Stanage (U.K.), Dover Island (Canada), Peak District (U.K.), or Hueco Tanks (U.S.).

It is impossible to discuss all the climbing techniques here, but what follows is a review of at least a few:

Crimping is an essential technique to grab the rock with the fingers bent. It is a technique that requires much strength in both the arms and hands. A few other hand techniques are the pinch grip and the open-handed grip.

The ways in which the hands, fingers, legs, or feet are able to carry the weight of the climber can vary and will of course depend on available holds and grips. Eventually, the

coordination of the whole body is crucial. One technique in which the whole body is directly involved is called a dyno, one of the most spectacular, free aerial moves. A dyno is a specific technique that enables the climber to get to a hold that is beyond his or her reach. Using the power of the legs, the climber "jumps" to the next hold. With the so-called double dyno it is even possible that both arms and legs come off the wall at the same time.

Since leg muscles are usually stronger than the muscles of the arms, it is important to have the legs do most of the heavy work. Some footwork techniques are smearing (putting the rubber of the foot sole against the rock to create friction), edging (putting the edge of the boot onto a rock ledge), or heel-hooking (raising your foot over your head and using it as a claw). Again, the experienced climber will know many more of the technical nuances that are required to solve specific problems. Some of the more demanding techniques will also require specific, and sometimes lengthy, hand training. Given the enormous amount of weight that boulderers carry with only a few fingers or a single hand, it is not hard to explain why the most common lesions are on the arms and hands, in particular on the flexor pulley system of the fingers. Climbers with much dedication to climbing and, surprisingly enough, those with the most ability, are most at risk.

Levels and Qualities of Climbing

There are several grading systems that are used to indicate the difficulty of a climb. The most widely known systems are the V-grade system (ranging from V₀ to V₁₆) created by John Sherman, and the Fontainebleau system, ranging from 1 to 8+. There is always a human element in these systems of grading, so they are dynamic, and there can be variance in the grading of a specific climb.

The inexperienced climber might think that bouldering has much to do with strength and will climb accordingly, that means in a relatively static way, searching at each position with one arm or one leg for the next hold. This technique will do for an easy climb, but the harder climbs require complex coordination, anticipation, flexible strategies, and thinking. The elite boulderer becomes more or less one with the boulder, while solving the problem presented by the climb.

An elite climber needs the right balance of strength, agility, and flexibility, combined with certain mental abilities

that enable the climber to stay cool under extreme circumstances (in particular when free soloing). Good climbers are characterized by well-developed muscular endurance and great strength (especially of the high upper body) related to body mass. Although many good climbers are often small and have low body mass, research indicates that the variance in climbing performance can largely be explained by trainable variables. That means that an elite climber must not necessarily possess specific anthropometric characteristics in order to excel.

Not all requirements for becoming a good boulderer are the results of training. Watching and listening to the climbers themselves are good ways to get acquainted with some of the special and complex talents that are needed to climb the difficult rocks. The documentary *Stone Monkey*, for example, gives a nice portrait of British top climber Johnny Dawes. When talking about climbing the Indian Face (one of the most dangerous climbs in Great Britain), Dawes emphasizes the intense memory of the climb. "I can still feel the movements, the rocks are still under my hand." According to Dawes, "You don't get it by thinking, you get it by being instinctive." Dawes compares climbing with dancing. When you dance you enjoy the music, with rock climbing you enjoy the rocks and the wind. Dawes, and other top climbers, may indeed be considered "Nureyevs of the rock." In some respect climbing a rock is like performing. Boulderers are composers and performers at the same time.

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See also Bouldering: North America; Buildering

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Bouldering: North America

Bouldering, like other forms of climbing, can be defined as an extreme form of sport. Bouldering is a type of rock climbing in which the athlete performs short, powerful, gymnastic-type movements on rocks or cliff bands 7-8 meters high (Donnelly 2003), and it has become increasingly popular in the United States, with climbers scaling the granite rock outcroppings in the Northeast, to the sandstone arches and boulders in the Southwest. While bouldering was once used as a means to gain strength for other types of climbing, it is now a unique and distinctive form of the sport with its own subculture. Unless performed in a competitive setting, bouldering requires no rulebook, no formal venue, and no judge or official. This lack of formality earns bouldering its definition as "extreme."

The sport of bouldering is often described in relation to other types of rock climbing such as sport climbing, traditional climbing, and mountaineering. These four forms of the same activity (i.e., rock climbing), however, are much different in terms of technique, subculture, and safety. While sport climbing, traditional climbing, and mountaineering often require the use of ropes and other safety measures such as carabineers, pitons, coming devices, bolts, hangers, belay devices, harnesses, and quick draws, the sport of bouldering involves none of these items. Bouldering is a sport in which no fixed safety gear is necessary except for a crash pad (a large mattress-like pad that cushions a fall) and the use of