**Totally and Completely Random**

Not just for cowboys.

Known as an element in Bavarian, Alpine, and Hungarian cultural, as a performance art, as an element in US rodeos, and as a competitive sport in Australia, whip cracking has also for nearly 100 years been the intrigue of physicists. Just what, why wondered, makes the whip actually crack?

In fact, the crack produced by a whip is achieved when the tip exceeds the speed of sound, breaking the sound barrier, and producing a sonic boom, much like a Concord airplane. More precisely, the crack comes from a loop which travels along the whip, gaining speed until it reaches the speed of sound. Recently, mathematicians and physicists have recorded accelerations of the tip at 50,000g [1g is the acceleration of a falling object (think PS1)], but these observations have produced a greater mystery: the tip at this speed was moving at twice the speed of sound at the time of the crack. Why hadn’t the crack been heard at the moment when the tip broke the barrier?

Professor Goriely and his graduate student Tyler McMillen believe they have the answer. According to Goriely, though the loop travels at one speed along the whip, some parts of the whip, including the tip at the final stage of motion, travels at twice the speed (this is similar to the observation of a car tire, in which the uppermost point on a tire travels twice the speed of the car). Though some parts of the whip move twice as fast, it is the loop itself that generates the sonic boom.

Today the Goaßlschnalzer (whipsnappers) of Bavaria perform in concert. Whipsnapping is also a traditional sport in Bavaria and there are many whip-cracking associations.

**Get out of Here!**

**Events in Boston**

- **Downtown Crossing Holiday Market**: Mon, Nov 30 11a-7p, Downtown Crossing. A diverse selection from artists: handcrafted jewelry, clay, blown glass, home furnishings, paintings, photography, pet items, Christmas ornaments and specialty food.
- **Tree Lighting on Boston Common**: Thurs Dec 3 6:00p, Boston Common

**Food for Thought**

- Honeybees never sleep
- Venus is the only planet that rotates clockwise.
- The Himalayan goji berry contains, weight for weight, more iron than steak, more beta carotene than carrots, more vitamin C than oranges.
- Two phone books with interlaced pages require more than 8000 pounds of pressure to separate
- Cranberry Jell-o is the only kind that contains real fruit.
- “Jaws” is the most common name for a goldfish.
- Jack is the most common name in nursery rhymes.
- The shortest English word that contains the letters A, B, C, D, E, and F is “feedback.”
- Kermit the Frog is left-handed

**Questions to Ponder**

- What is the best combination of two foods?
- If you could change one (and only one) part of your appearance, what would it be?
- If you could only read one book for the rest of your life, what would you choose?
- Do you believe in love at first sight?
- Is this the real life? Is this just fantasy?

**Command Center**

Don’t put it off.

---

**Upcoming Lev Events**

- **Pre-Formal Champagne reception**: 8:30-9:30p, (JCR)
- **Four: A Winter Formal**: Thurs, Dec 3rd
- **Holiday Tree Decorating**: Fri 4th (dhall)

**Winter Formals**

- **Sat. Dec. 5**: Adams - "Winter Wonderland" – (in-house)
- **Eliot (in-house)**
- **Kirkland Incest-Fest (in-house)**

**Sun. Dec. 6**

- **Winthrop, Currier, and Mather - "An Epic House Winter Formal"** – Faculty Club
- **Lowell’s Yule Ball** – (in-house)

**Mon. Dec. 7**

- **Dunster (in-house)**

**Events on Campus**

- **Red Cross Blood Drive**: Tues & Weds, 10:30-3:30, Harvard Hillel
- **Summer Opportunities Fair**: Th, 12-4p, Gutman Conference Center
- **Kuumba Christmas Concert**: Fri 8p; Sat, 11p, Memorial Church

---

**Good Luck on the LSAT!**
Deadline for Leverett House Newsletter submissions is Thursday at 11:59pm. Please e-mail Leverettnews@gmail.com. Thanks!

**Important Campus Dates**
- Friday, Dec 4th: First Day of reading Period
- Saturday, Dec 12th: First Day of Finals

**The Little Things**
- Taking the stairs beside somebody taking the elevator
- Being so excited you forget to take your bike helmet off
- Realizing you’re going to be in the background of someone else’s picture and smiling at the last second
- When your laptop or cell phone is just about to die but you manage to run and plug it in before it completely shuts off
- Vacuuming a dirty carpet and hearing all the tiny rocks going through the hose
- Giving people what they want
- Driving from a rough road onto a smooth one
- Stomping dry crunchy leaves on the sidewalk
- When you suddenly remember it’s a long weekend
- When you meet up with a group of friends and they stop talking to celebrate your arrival

**Best of Harvard FML**
- This is the first page of the book I have to read by tomorrow: “If the relation that relates itself to itself has been established by another, then the relation is indeed the third, but this relation, the third, is yet again a relation and relates itself to that which established the entire relation.” FML
- I am incapable of reasoning morally. FML
- I put (instant) coffee in my coffee so I can stay awake while I’m awake. FML
- I have the urge to tape my fingers together and run around Cabot Science Library pretending I’m a Velociraptor. FML
- The self-defense class meeting in my dorm common room has been yelling “NO! NO! NO!” at the top of their lungs for half an hour. I can’t tell them to shut up because they’re teaching girls not to get raped, but I also can’t concentrate on my Expos paper. FML

Submit to the Hare Today
Deadline for Leverett House Newsletter submissions is Thursday at 11:59pm. Please e-mail Leverettnews@gmail.com. Thanks!