



NEWS HOME CLASSIFIEDS OBITUARIES LOTTERY WEATHER PERSONALS SEARCH SHOP

- ▶ Local
- ▶ Nation/World
- ▶ Vital Statistics
- ▶ Business
- SPORTS**
- ▶ SBT Coverage
- ▶ ISR Coverage
- ▶ Sports Talk
- OPINION**
- ▶ Viewpoints
- ▶ Letters
- ▶ Speak Out
- ARTS/LIVING**
- ▶ TV Listings
- ▶ Lifestyles
- ▶ Entertainment
- SERVICES**
- ▶ Advertise
- ▶ Archives
- ▶ Classifieds
- ▶ Newspapers in Education
- ▶ Online Shops
- ▶ Subscriber Services
- ▶ Contact Us

# South Bend Tribune

February 25, 2000

## Study: U.S. out of sync with European applause

By WAYNE FALDA  
Tribune Staff Writer

SOUTH BEND -- You can listen to the rhythm of the falling rain, as a Golden Oldie song exhorts. Better yet, you can witness the syncopated flashing of Asian fireflies that suggests a subtle pattern at work.

But for true synchronization, there is nothing like an Eastern European theater-lover applauding after a stirring performance, points out a bona fide Eastern European, Albert-Laszlo Barabasi.

What's more, they're probably not even aware of it, says Barabasi, a University of Notre Dame associate professor of physics whose forte is statistics.

But Barabasi and his colleagues from Romania, Hungary and France wrote in Thursday's edition of the journal *Nature* that they believe they have uncovered -- via mathematics -- the set of conditions by which people in an audience applaud in phase.

They have dissected the physics of rhythmic applause to the point where they have detected a self-organized spontaneity that can be mathematically described.

"Just like the way we stand up and walk, we don't think much about how we do it," Barabasi said Thursday at his office at Nieuwland Science Hall. Just as we walk essentially in a natural way, an audience that develops a synchronous pattern of



**Notre Dame physicist Albert-Laszlo Barabasi and his colleagues described the conditions for rhythmic applause in the research journal *Nature* on Thursday.**

Tribune Photo/PAUL RAKESTRAW



clapping doesn't "think much about what they are doing."

The same effect is at play even in complex social systems, Barabasi believes.

The study of applauding Romanians also shows that audiences are capable of discordant clapping. Americans are prime offenders.

It seems that Eastern Europeans have this harmonious clapping down -- well, to a science.

"What happens in the theater is that they start out clapping completely randomly," Barabasi said. "And then suddenly they start clapping in phase."

This synchrony oscillates. It ebbs and flows. It disappears and reappears maybe five, maybe 10 times, during the applause.

But more importantly, this spontaneous phenomenon happens whenever the clapping slows down so that everybody naturally puts their hands together in unison, Barabasi said.

To demonstrate the effect, Barabasi slipped into the compact disc player of his computer a CD of a live concert featuring a popular Hungarian group, Zoran.

In seconds a pattern of applause emerges. The rhythm is not unlike the clapping impatient Americans make *before* a tardy headliner appears on stage.

"It happens all the time," Barabasi said with satisfaction.

But not in America. Americans -- notorious individualists all -- are completely out of sync compared to our European counterparts.

We cowboy concert-goers obliterate the mathematical conditions that must be met for synchronization to occur. When it comes to applause, Barabasi finds Americans to be independent mavericks bent on clapping rapidly. Hence we ruin the perfect chance for synchrony.

It's only when the pace of clapping slows down that everyone brings their hands together in unison. It is as if the audience had become part of a performance as elegantly orchestrated as a Beethoven symphony.

Barabasi believes Eastern Europeans have probably reached this state of blessed nirvana simply because the same core of theater-goers are culturally conditioned to applaud in sync. In essence, they have reached an unwritten -- and probably unwitting -- pact among themselves.

"I was at a concert in Budapest just a month ago," he said. The rhythmic clapping appeared spontaneously. "Ah, it was a beautiful thing," he sighed.

Not so for us impetuous Americans.

If we happen to harmonize our applause, it's only by chance.

You know it when you hear it, Barabasi said. And he didn't hear it last week at Saint Mary's College following the performance of "The Vagina Monologues."

Big crowd, he said. Everyone was enthusiastic. Everyone was clapping very fast and very loud. The result? Ugh! Disharmony.

But could a few good Hungarians in the audience sway the Americans?

"We tried that," Barabasi said. In a performance some time ago, he and a friend tried to steer the Americans into clapping in a slow synchronous pattern. "It didn't work," he said. They were outnumbered -- and drowned out.

Underlying all of this studious investigation of applause is a belief that ultimately all of human behavior can be described mathematically. With a properly complex mathematical model, certain elegant patterns would emerge, Barabasi said.

Such instances of unconscious self-organization may manifest themselves biologically as when the menstrual cycles of women living in close quarters seem to occur with synchrony.

For all its complexity and seeming randomness, the universe may have an orderly self-replicating pattern, many cosmologists now believe.

Barabasi halted at the thought.

"Ah, the universe." He paused. "Now that's too big for me."

To reach Wayne Falda: [wfalda@sbtinfo.com](mailto:wfalda@sbtinfo.com) (219) 235-6326

Jump to a day:

### **[Our Privacy Policy and Direct Notice To Parents](#)**

Contact the [southbendtribune.com Web staff](#).  
News coverage and editorial content provided by  
the [South Bend Tribune](#) unless otherwise specified.  
[Copyright © 1994-2003 South Bend Tribune](#)