A snapshot of John Stallings, in graduate school

(B. Mazur)

June 12, 2009

On John Stallings' University of California Homepage there are two photos of him, one where he is clasping a sheaf of papers among a group of mathematicians, a picture taken during his graduate student days at Princeton;

and the other a much more recent one. John asks us—on his web page—to compare them.

The older Stallings in a grand white beard is engrossed in something off-camera, his interest in whatever it is, sparks a questioning look; there is movement in that still photo, with the hint of smile coming on. The younger Stallings has the more composed smile I remember vividly from our graduate student days: both diffident, and at ease.

I remember, when we were graduate students at Princeton, many occasions, when John would stride into a room, intoning something or other with a kind of playful irony in his resonant Arkansas accent. Once, after thinking that he had solved something, but found a hole in his argument, he sang out these lines of Keats:

> And Joy, whose hand is ever at his lips
> Bidding adieu.

His response accomplished—in my eyes—the magical trick of converting the common experience of finding a hole in one's proof—a sure, but minor, downer, one would think—into a joyous testimonial of the ephemerality of joy. And this was typical, I think, of the grounded, self-ironic, and always-amused way he walked through the world (with his successes, or his setbacks, with his foibles and his gifts).

Stallings was the center of a group of graduate students (Jim Stasheff, Han Sah and I were part of that group) hellbent on piercing the mysteries of a subject that goes, nowadays, under the not very glorious name of *point set topology* but at the time I would often call it *pure topology* where the adjective *pure* had for me—I'm now amazed to say—a moral force: all other versions of topology were, I thought, in some sense adulterated—adumbrated by crutches such as *polyhedral*, or *smooth*, or—heaven forbid—*complex analytic* or *algebraic* structures that would alloy—would sully—the topological essence of the spaces being studied.

I can't imagine that my companions in this group had the same puritanical view as I did, but we all shared the drive to understand what we considered to be the primal objects of topology (notably the real line, the closed interval, the circle, the disc, etc.) and to protect them from the various encroaching monsters and chimeras such as solenoids, Cantorian concoctions, impacted sine curves, and that deep sea serpent: the long line. This latter creature John would always deferentially refer to as *the long long line* alliteratively drawing out the music of those slow syllables in honor of the immensity of the referent. There was something strident in our engagement in this pursuit: we would fall over ourselves dreaming up more and more arcane criteria that distinguished, say, the classical unit interval from one of these behemoths, and when we failed, we—joyously—would stomp and proclaim: "We don't even know *the unit interval*!"

But John was at home with—and comprehended—the creations of geometry that struck our fancy in a clearer, more vivid, and more original way than any of us did, whether it was an exhibit from the *cabinet of counter-example wonders* that I described above, or was one of the even more wonderful constructions of Alexander, Antoine, or Bing. It was an extraordinary experience to watch John talk so slowly and visualize things so fast.

Of course, in the more official world of studies we were taking in the standard fare of graduate studies in topology, with heavy doses of Spectral Sequences, H-spaces, and other equipment of the

epoch. And surely our professors would have looked askance—or maybe even 180 degrees away—had they known how much time we spent cataloguing the ways we "didn't even know the unit interval." But I don't recall that the landscape of my graduate student life was studded—outside courses—with very many professors. We were largely shaping our own interests; a good thing, after all, for there are ways of becoming educated that are worse than that. It was mainly fellow graduate students—John Stallings and others, along with various visitors to the university and the Institute For Advanced Study—that set the tone of graduate studies—for me—and vitally important, made it a joy.