FOR THE CLASS OF '68

The search for truth is more precious than its possession *Einstein*

Paul's memory for dates always amazes. "It was in the Journal of the London Math Society, 1949, " he'll say, and there it will be. For one anecdote though I too recall the date, April 1970, as my firstborn had a fetal role. Paul was the principal lecturer at a meeting of the New York Academy of Sciences. He and his nonagenarian mother had a suite at a New York hotel. When my bride MaryAnn and I arrived there was already a goodsized group of mathematicians hard at work. Paul's mother, diligently learning her fourth language, English, took MaryAnn into the other room and I joined the mathematical conversation. Or rather, conversations, as the ten of us formed three distinct subgroups in (if memory serves) Number Theory, Set Theory, and Combinatorics. Three discussions were occuring simultaneously, conjectures and theorems were flying thick and fast. Paul was at the apex of this trialogue, leading and contributing to all groups at once. It was, one well recalls, a heady moment for a budding young Combinatorialist. We'd been at this for perhaps half an hour and I confess to having forgotten the ladies in the other room. But Paul had not. He suddenly turned and called to his mother in rapid Hungarian. In her conversation with MaryAnn there was some problem with her English and Paul was explaining the correct usage. It appears there was yet a fourth simultaneous conversation.

Those were tumultuous times. In my land the Vietnam war enraged: Amerika the villain. The revolution of 1989 arrived in Eastern Europe but history slipped for a generation, our generation. French youth had the gall to try to change the world. "Do your own thing" was the admonition that resonated so powerfully. Resist Authority. Nonconformity was the supreme virtue. This was the backdrop for our first collaborations with Uncle Paul. But while others spoke constantly of it, nonconformity was always Paul's modus operandi. He had no job; he worked constantly. He had no home; the world was his home. Possessions were a nuisance, money a bore. Paul lived, lives, on a web of trust, travelling ceaselessly from Center to Center spreading his mathematical pollen. "Prove and Conjecture!" was, and is, his constant refrain.

Were we, in those halcyon days, students of Uncle Paul. I think the word inadequate and inaccurate. Better to say that we were *disciples* of Paul Erdős. We (and the list is long indeed) had energy and talent. Paul, through his actions and his theorems and his conjectures and every fibre of his being, showed us the Temple of Mathematics. The Pages of the Book were there, we had only to open them. Did there, for every $k, r > 0$, exist a graph G which when r-edge colored necessarily yielded a monochromatic K_k and yet had clique number merely k itself? We had no doubts - the answer was either Yes or No. The answer was in The Book. Pure thought, our thought, would allow its reading.

With maturity we've learned that The Book did not open at random. Paul was showing us the way. The conjectures were structured, the Pages were forming Sections and Chapters. Now its custodianship passes to us. " Future Directions of X Theory" are our choice to make. Can we give to our students the passion that Paul gave to us. Paul is a unique point, imitation will necessarily fall short. We can give our ϵ, it is an effort well worth making.

Now Paul: let $A_i \subset \{1, \ldots, n^2/2\}$, $1 \leq i \leq m$, be random n-sets. With $m = cn^2 2^n$, in your Acta. Math. Hungarica paper in 1964, Property B almost surely failed. Suppose instead $m < c_1 n^2 2^n$, c_1 small. Can you show $\ldots$

Joel Spencer
April 1993
New York