

Seeking connections

Summarize yourself in the form of a title of a paper in Nature.

Uncovering information in fluctuating systems and understanding unifying principles linking fluctuation phenomena in different systems.

What was your first experiment as a child?

Learning the effect of connecting myself (and my little brother) to electrical sockets in our home, which are 110 volts in the United States, and not so very dangerous.

Who has been the most important mentor in your career?

My first graduate student adviser, Max Delbrück.

What single scientific paper or talk changed your career path?

The private talk Max Delbrück gave to me the day I arrived in his lab in June 1962.

What makes a good scientific mentor?

Teach, by example, how to identify significant scientific problems that are worth addressing. We only live once, so cannot afford time to follow up every interesting idea. We must learn to select problems with the highest probability of a big scientific pay-off.

What gives you the most job satisfaction now? What are your major frustrations?

Satisfaction lies in the search for significant scientific problems. The frustration is the difficulty of making progress with these problems, and the failure of *Nature* to recognize their importance and significance...

Given your interest in the behaviour of economic phenomena, do you have any hot tips for getting rich quick?

Pay attention to the cross-correlations between the movements of different stocks in your portfolio, and update this information regularly. This activity is not unlike those of statistical physicists, where we must pay great attention to statistical correlations between variables, and how these evolve over time.

What is your favourite conference destination, and why?

The Enrico Fermi Summer School at Varenna sul Lago di Como in Italy, because of the emphasis on interactions between conference attendees, both during and after lectures (at meals, at parties ...).

What was the worst/most memorable comment you ever received from a referee?

One referee dismissed a paper as "an incom-

plete derivation of an unimportant result". It turned out to be one of my most important papers (Spherical model as the limit of infinite spin dimensionality *Phys. Rev.* **176**, 718–722; 1968), since cited in many texts on statistical mechanics.

You have the audience in your hands, but some smart-alec asks you the killer question you have no idea how to answer. What's your response?

I would simply admit that I had no idea how to answer the question, throw it open to the audience and invite participants to discuss it later on. After all, the right question can lead to something new.

What book currently resides on your bedside table?

None. I do not read books. Especially not in bed.

What music heads the playlist in your car or laboratory?

Brazilian music, especially from stars such as Daniela Mercury and Maria Bethania.

Assuming the dead can be raised and/or time travel exists, who from the world outside science would you most like to have dinner with?

Jacques (né Jakob) Offenbach, composer of *La Vie Parisienne*, because he loved to laugh and make fun of society.

You are on a plane behind two students obviously going to the same conference, who start to talk about your work. What do you do?

Listen and take notes so that I can remember their perspective: it's a pity that we have no way to know the honest perspective of others on our work. And after they finish, I would identify myself.

The Internet is the bane of scientists' lives because...

The Internet is the opposite of a bane. It is especially vital for interdisciplinary research because it allows us to learn things about other fields without going through the hierarchical authority tree. It also levels the playing field, treating all ages and countries more or less equally.

What would you have become, if not a scientist?

A car thief. I like the idea of doing something that is a challenge, and stealing a car is not unlike stealing secrets from God — that is, from the vast body of scientific law that we do not yet know about. First you must select the car, which requires taste and judgement, weighing up the desirability of the car against



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the chance that you can steal it without getting caught (nicer cars have alarm systems, and so on).

What discovery, invention or innovation would most improve your life?

A pill to make me kinder to those I interact with; another to allow me to focus more closely on a single problem; and a third to enable me to see the solution to the problem.

Name one extravagance you can now get away with because of your eminence.

I am sorry to say that physics has no extravagances. I guess the only thing we get away with is not being told we are jerks to our faces, but this is a pity because we lose valuable feedback (so that we have to rely on sitting on planes behind graduate students who are unaware of our identities).

What music would you have played at your funeral?

Romantic soul music, the Black American music of the 1960s.

What's just around the corner?

Better ways of uncovering the useful, 'hidden' scientific information that seems to be carried in fluctuations; to see the connections between the different fields in which fluctuation phenomena are important, such as my recent work on connections between fluctuations in economic systems and fluctuations in systems near special 'critical points' (V. Plerou, P. Gopikishnan and H. E. Stanley *Nature* **421**, 130; 2003). ■