TOM LIGGETT, SOME BRIEF REFLECTIONS

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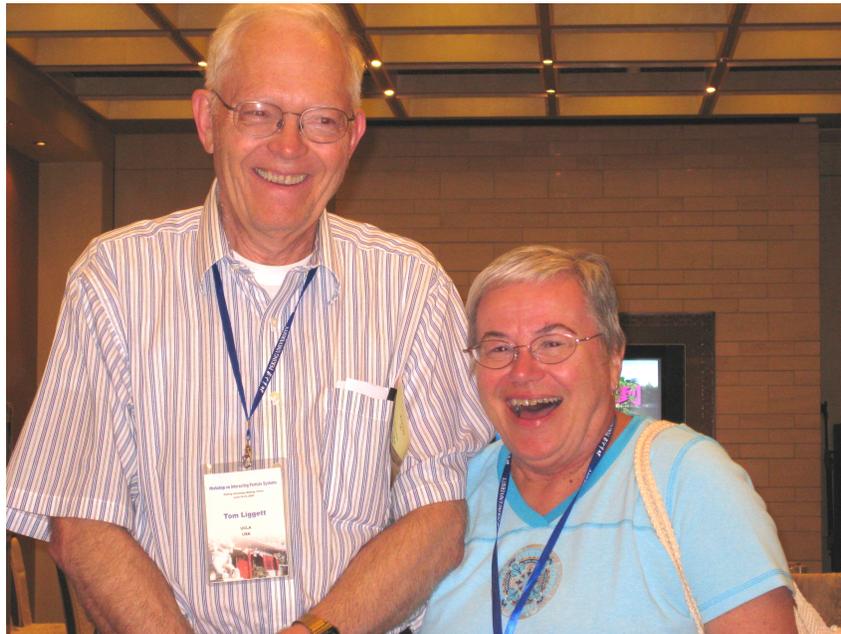
Tom and Chris Liggett in Beijing, 2009.

The 1970s and 1980s were exciting years for spatial probability models. Few people were as involved in all that as was Tom, and his name will always be associated with interacting particle systems. His 1985 monograph [Liggett 2005] was a milestone — a systematic account of a theory, initiated in the US by Frank Spitzer and developed by Tom and others, that spanned certain probabilistic models arising in physics, in fact around five such models. It had an invigorating effect on probability worldwide, and it remains one of my bibles. I claim to have been the first paying customer for Tom's volume, in a private viewing arranged by Springer New York.

Tom and I came to know one another much better in later years. Our friendship began in the lecture room, where else? Each sat through a number of lectures by the other, and this led to exchanges of views, and ultimately a warm and (for me) a greatly valued friendship. Tom was a masterful lecturer in the chalkboard tradition. Of a lecture of his that I attended at Cornell in the early 1990s, I recall absolutely

nothing beyond the compelling sense of theatre as the mathematics unfolded. The board was the stage, the mathematical objects the players, and the intellectual strands provided the plot — this was such skill with a stick of chalk.

Tom visited Cambridge in 1993 for a program at the then recently established Newton Institute. A number of aspects of life in Cambridge (including the bathing arrangements) caused some bemusement to visitors from the New World, as we pondered hard on the mathematics of interacting particle processes and random media.

To mark Tom's 65th birthday in 2009, Dayue Chen invited a number of students, friends, and colleagues to a very enjoyable meeting in Beijing. The timing was slightly unfortunate owing to the H1N1 influenza epidemic then afflicting China. There were a small number of mysterious incommunicado absences, attributed to compulsory quarantine on arrival in China, but Tom and Chris made it. It was an exciting week, especially for dinners. Tom's legs survived the Great Wall hike at Jinshanling by courtesy of the zipline descent at Simatai. Vladas Sidoravicius flew in just for the group photo.

In more recent years, Rosine and I were very happy to visit Tom and Chris (on one occasion with Amy) at their house in Santa Monica. Their domestic life was warm and loving, and their garden gave them special pleasure (and gave us black-eyed susans).

Tom was a sociable, frank, and modest person with strong expectations of himself and others. He had the highest of mathematical standards, supported by a natural ability that extended over both general theory and complex calculation. He was generous with his time and respected by all, and much loved by those close to him.

Of his many works beyond interacting particle systems, I want to mention two that I especially like. The first is his beautiful paper of 2009 with Julius Borcea and Petter Brändén on the elusive and fascinating topic of negative dependence, in which they introduce the concept of a strongly Rayleigh measure [Borcea et al. 2009]. The second is his surprising article of 2016 with Alexander Holroyd clarifying the relationship between stationary sequences that are finitely dependent and those that are block factors [Holroyd and Liggett 2016]. Each is refined and deeply clever.

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References

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[Holroyd and Liggett 2016] A. E. Holroyd and T. M. Liggett, "Finitely dependent coloring", *Forum Math. Pi* **4** (2016), e9, 43 pp. MR 3570073

[Liggett 2005] T. Liggett, *Interacting particle systems*, Springer, Heidelberg, 2005. Reprint of the 1985 edition (Grundlehren der mathematischen Wissenschaften, volume 276).