

## Talk to open Walterfest, June 6, 2011

There is an unusually complicated and wonderful web of human interactions in today's gathering. First and foremost, we are honoring Walter Neumann, on his 65th birthday. He has been a truly wonderful scholar and teacher, and many of us gathered together here have learned from him, both about mathematics and life. Going beyond that, we are also honoring his many connections to the world of mathematics, past, present and future.

Starting with the past: Walter's parents, Bernhard and Hanna Neumann, played fundamental roles in the early years of combinatorial group theory. Their theorems are a basic part of what most of us learn today in graduate school. One of our first speakers will be Walter's older brother Peter Neumann, and he's chosen a very appropriate topic – the origins of group theory in the work of Galois. And, as it turned out, our final speaker on Friday will be Gilbert Baumslag, who wrote his PhD under the supervision of Walter's father, Bernhard. Gilbert was a postdoc at Courant Institute when I did my own thesis work under the direction of Wilhelm Magnus, in the mid 1960's, and he has been a major leader in the New York Group Theory community ever since that time. Three other speakers are Walter's mathematical children, and several other students have played key roles in the planning of this conference. So the threads that connect all of us to Walter reach backward and forward.

My own first knowledge of Walter dates from my days as a graduate student with 3 young children at home. Since there weren't very many women grad students in Mathematics in those days, many people who wanted to encourage me by showing that it could be done, told me about Walter's mother, Hanna Neumann, who had not only made fundamental discoveries in Combinatorial Group Theory, but also, with Bernhard Neumann, had raised 5 children, 3 of whom went on in Mathematics and 2 of whom chose careers in Mathematics. As a side remark, I note that Hanna Neumann's Oxford PhD thesis advisor was Olga Tausky-Todd, another member of the

tiny community of women mathematicians from days gone by.

The extended Neumann family has had an enormous impact!

Walter's father, Bernhard Neumann, was born in Germany and received his PhD there in 1932, but was forced to leave when the Nazis came to power, escaping to England. His mother, Hanna, began her graduate studies in Germany, but left Germany in 1938, joining Bernhard and finishing her PhD at Oxford some years later. Walter grew up in Manchester, England, moving with his family to Canberra, Australia when he was 17 to finish his BA and MA. He went to Germany for his doctoral training, receiving his PhD in Bonn in 1969, under the supervision of Hirzebruch. After Bonn he began 13 years at the University of Maryland, advancing from an Assistant Professor to a tenured Professor. But then he left Maryland for a new Professorship at Ohio State University, where he stayed for 5 years. In 1993 he moved to Melbourne Australia, where he was a Professor at the University of Melbourne. Seven years later we had an opening at Barnard-Columbia, and were very happy when Walter applied, joining the Barnard faculty in 2000. The speakers at this conference include Walter's colleagues from Bonn, Maryland, Ohio State, Melbourne, Columbia, and more!

I first met Walter at a conference at Maryland, in the early 1980's. He gave a talk about his work with Don Zagier, on estimating how the volume of a hyperbolic 3-manifold changes under Dehn surgery. It was a beautiful talk, and it deepened my own interests in 3-manifold topology and geometry. The open questions that he told us about that day have been and continue to be a rich source of research. I also recall from that conference a party at the home of Walter and Anne, in College Park, and in particular have a picture in my mind of a conversation in their kitchen. That's when I began to understand that Walter was not just a fine mathematician, but also an exceptionally gentle and modest human being. I had no idea that our personal interactions would deepen in many ways, and go on for so many years.

Walter's strong interest in coming to Barnard-Columbia certainly had to do with the research environment, but it went way beyond that. He has taken a major and lively interest in helping Barnard's mathematics majors to excel, and in improving the dialogue between the humanities and sciences at Barnard. Walter and I didn't always agree about departmental issues, but I certainly learned from his gentle and non-confrontational ways that much could be accomplished by quiet leadership. He has played a major role

in keeping the Columbia Geometric Topology seminar alive and flourishing, even as he travelled all over the world giving talks.

Finally, there is GT, an enterprise in which Walter and I, as in so many other things, share a deep interest. It originated when, as electronics became more and more important in the world, the heavy hand of corporate profit-making was felt by math library committees. Visit Walter's home page, and you'll see immediately that being forced to decide which journal subscriptions to cancel at OSU and Melbourne made a deep impression on him. We all knew that the content and quality of journals was controlled entirely the work of mathematicians, therefore it seemed as if, maybe, we did not have to sit back and let it happen. Under the strong and truly inspired leadership of Rob Kirby and Colin Rourke, 23 of us, a group of Editors-to-be that included Walter, Dave Gabai (who will give the first talk, in a few minutes), Danny Caligari and Benson Farb (both of whom will also speak) and me, banded together with Rob and Colin to launch a new journal which would be top quality at bottom prices. I think I can speak for all of us when I say that it's been the most rewarding professional experience imaginable to be part of this enterprise, as GT grew into one of the top journals in the area. Walter's serious commitment to GT grew too, and in July 2005 he was offered and accepted the position of GT Managing Editor. That is a major (unpaid) responsibility which he has handled and continues to handle like a true pro, every single day. I recall one day when we talked at Columbia in the morning, and later that day letters came to the Editorial Board from Heathrow airport, then from Oberwolfach! A short time later he wrote to the EB from Bonn, and then from Guanajuato Mexico. Soon after that, if my memory is correct, his editorial responsibilities were being carried out from Tokyo!

And with all of that – Walter's scholarly research has continued and deepened.

It's a great pleasure to me to welcome all of you to this wonderful research conference, arranged by CUNY mathematicians Jason Behrstock, Ilya Kofman, Abhijit Champanerkar and Phillip Ording, together with Walter's former student Stephan Tillman, to honor Walter Neumann and celebrate his 65th birthday.