



Bernoulli News

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A VIEW FROM THE PRESIDENT



In the previous issue of Bernoulli News, this column was aimed at a somewhat extensive overview of the many activities and issues involving the Bernoulli Society. In the present issue, this column is being limited to a single topic, **The International Year of Statistics 2013**, <http://www.statistics2013.org/>, as a timely opportunity to communicate the bold mission of the Bernoulli Society to the world:

"The advancement of the sciences of probability (including stochastic processes) and mathematical statistics and of their applications to all those aspects of human endeavour, which are directed toward the increase of natural knowledge and the welfare of mankind."

In particular, the specific goals of **Statistics2013** include: increasing public awareness of the power and impact of Statistics on all aspects of society; nurturing Statistics as a profession, especially among young people; and promoting creativity and development in the sciences of Probability and Statistics. In particular, please note that Statistics is being used in the broadest historic sense that includes Probability in its many faceted roles as well.

The Bernoulli Society, <http://www.bs2013.org/>, in collaboration with the numerous other learned societies around the world <http://www.statistics2013.org/participants.cfm>, has initiated a number of special ways in which to celebrate the historic and continued impact of research and education in probability and statistics at conferences, workshops and special issues of journals. We owe a great deal of gratitude to the program committees, editors, and organizers responsible for these activities. As a result of their tireless efforts, we are sure to see numerous reminders of the major triumphs and challenges to research in statistics and probability over the course of 2013 at diverse conferences around the world.

But, what about the citizenry and students engaged in careers other than probability and statistics, but who are critical to the continued support of research and education in our local regions of the world? It should be clear from diverse economic pressures across the globe that this cannot be taken for granted anywhere.

While there is much to engage us at a professional level in planned activities at conferences and more specialized meetings in 2013, there is also much to communicate with regard to the significance of past and present research in statistics and probability that routinely impacts mankind. The support provided by government agencies, commercial companies, and private endowments of education and research in our field, as important as we know it to be, deserves an international voice that will resonate with many.

.... Continued on page 1

Deadline for the next issue: March 31, 2013
Send contributions to: victor.panaretos@epfl.ch

A View from the President (continued from front cover)

This is a time to be proactive and I invite you to at least raise the idea with a colleague or two over tea or coffee, to begin the brainstorming process. Senior colleagues are urged to encourage and support energetic younger researchers in efforts to obtain local resources to develop an exciting public event.

There is a rather simple recipe that can be applied to develop an event in your region of the world, conveniently reproduced at the end of this column. It does require the initiative of a couple people to get something started, but from there it is an exercise in networking and collaboration.

For example, in Oregon, my colleagues Yevgeniy Kovchegov, Oregon State University, and Peter Otto, Willamette University, have nicely agreed to co-chair a diverse committee of probabilists and statisticians from seven different universities located within a one-hundred mile radius in Oregon to sponsor a public lecture some time in 2013 aimed at legislators, teachers, students, professionals, and importantly, the news media.

Naturally, I am confident that Oregon will provide some strong competition in the video contest, <http://www.statistics2013.org/videocontest.cfm>. The objective for us all is to see statistics and probability "go viral" in 2013.

In Oregon, a reception is being planned to follow the talk to provide an opportunity for discussion and dialogue with community leaders and other professionals and students. This part will be simple. The hard part will be decorating a cake with 300 candles for Bernoulli and 250 for Bayes!

One of the biggest challenges to creating an event like this is speaker selection. If this presents difficulties, you may wish to consider using the simple voting process that we have from time to time used in Bernoulli Society deliberations. Here it is: After an agreeable pool of nominees is developed, each committee member ranks the nominees as 1, 2 and emails the ranking to a

designated monitor. Unranked nominees are assigned rank n by default, where n is the total number of candidates. A vote for k th place scores $n-k$, and a nominee's score is the sum of the scores from all committee members. Ties may be settled by coin tossing. The highest score is approached first, and so on in order until a nominee agrees.

Opportunities like this are few and far between. Let's not miss it.

Recipe for a Bernoulli Sponsored 2013 Regional Public Event

An event is normally a public lecture, reception, awards ceremony for local video contest entries to the international competition at:

<http://www.statistics2013.org/videocontest.cfm>

1. Form a local committee from universities in your area.
2. Develop a small budget for promotion of a 2013 public event to include local professionals, students, teachers, and civic representatives.
3. Secure official sponsorship of the Bernoulli Society at <http://www.bs2013.org/>, and join the list of institutions on the international web page <http://www.statistics2013.org/>. This can be helpful to fund-raising for an officially sanctioned event by learned societies around the world.
4. Develop a budget and request funding from local, participating universities.
5. Decide a speaker, location and time for your 2013 event.
6. Invite local news media to report on this historic moment.

*Ed Waymire, Corvallis, USA
President of the Bernoulli Society*

A Welcome to New Executive Members by the President-Elect

Four of our fellow society members have recently begun or soon will be beginning new terms of service with Bernoulli Society. These are:

- Maria Eulalia Vares, who took up the position of Chair of the Publications Committee in July, 2012;
- Lynne Billard, who will be taking up the role of Treasurer of the Bernoulli Society, and joining the Executive Committee, on 1 January, 2013;
- Mark Poldolskij, who will be taking up the role of Membership Secretary of the Bernoulli Society, and joining the Executive Committee, on 1 January,

2013;

- and Nakahiro Yoshida, who will be continuing a further term as Scientific Secretary of the Bernoulli Society, and continuing on the Executive Committee, on 1 January, 2013.

We are very happy to welcome them in their new or continuing roles, and look forward to hearing from them as they exercise their key responsibilities.

*Wilfrid Kendall, Warwick, UK
President-elect of the Bernoulli Society*

News from the Bernoulli Society

Travel Awards and Accommodation information, SPA 2013, Boulder, Colorado.

The 36th Conference on Stochastic Processes and their Applications (SPA) will be taking place at the University of Colorado at Boulder, between July 29 and August 2, 2013. The week of SPA is especially busy in Boulder, and the organizers strongly recommend reserving rooms as early as possible. Rooms are currently being held at a number of Boulder hotels. For further information, please see

http://math.colorado.edu/spa2013/?page_id=21

SPA is the premier annual international conference for researchers in probability, stochastic processes and related fields, and offers opportunities for young researchers to present their work in the form of short contributed (or invited) talks. The organizers anticipate being able to confer a generous number of travel awards to junior participants: graduate students, postdocs and

junior faculty without their own sources of federal funding. Highest priority will be given to members of underrepresented groups, including women.

Applications (CV, plus a letter of recommendation for graduate students or postdocs) can be emailed to Brian.Rider@colorado.edu. Please indicate whether you plan to give a contributed talk (include title and abstract), or (for cross referencing purposes) if you are an invited session speaker.

Awards will be announced by March 2013.

Brian Rider

Terry Lyons to give Second Schramm Lecture at the 2014 IMS Annual Meeting



Professor Terry Lyons

The 2014 Schramm Lecture will be delivered by Terry Lyons, the Wallis Professor of Mathematics at Oxford University, UK. His many awards and recognitions include the Rollo Davidson Prize, the Polya Prize, and elected fellowship to the Royal Society, and to the Institute of Mathematical Statistics.

The citation for the lecture is:

"Terry Lyons has made multiple deep contributions to stochastic analysis. In particular, he created, and further developed with his collaborators, the rough path theory, which provided both a new heuristic understanding of stochastic integrals and an effective mathematical tool".

Professor Lyon's lecture will be at the 2014 IMS Annual Meeting, which will take place in Sydney, Australia,

from July 7-11, 2014.

As previously announced, Itai Benjamini is the inaugural Schramm Lecturer in 2013. His lecture will be at the 36th Conference on Stochastic Processes and their Applications (July 29 August 2, 2013, in Boulder, Colorado.

Oded Schramm (1961-2008) was an extraordinary mathematician whose life was cut short in a tragic hiking accident. Collaboration between the IMS and the Bernoulli Society resulted in the creation of this new joint lecture in probability and stochastic processes, named in his honor. For further information see <http://imstat.org/Schramm/>.

Contributions to the fund that supports the travel expenses of the Schramm lecturer are welcome and may be processed at <https://secure.imstat.org/secure/orders/schrammcontribution.asp>

David Aldous Honoured on the Occasion of his 60th Birthday

On September 15th-16th, 2012, New York University held a conference, organized by Sourav Chatterjee, to celebrate David Aldous' 60th birthday. As readers of Bernoulli News will know, David has made several fundamental contributions to probability theory. His research has been recognized by many awards (too many to mention here), of which the one with the

highest scarcity index is his invitation to give a plenary address at the 2010 ICM.

Readers will also, of course, know that for the last few years David has contributed a regular column ("David's Musings") to Bernoulli News. In appreciation of David's work, the Bernoulli Society sent a gift to David, and (as



David Aldous (left) and Martin Barlow (right)

a member of the Society's Council) I was pleased to present it to David at this meeting. Very appropriately, the gift is a sculpture of a tree, though my first impression is that its statistics look different from a typical sample of David's Continuum Random Tree.

Martin Barlow
Vancouver, British Columbia

News From the Publications Committee

Since the latest General Assembly that took place at the 8th World Congress, the committee has the following composition: Tony Cai (USA), Frank den Hollander (Netherlands), Wilfrid Kendall (UK), Thomas Mikosch (Denmark), Gareth Roberts (UK), Holger Rootzen (Sweden), Maria Eulalia Vares (Chair, Brazil). The formation and operation of this committee follows working rules approved in 2011. We thank the outgoing chair, Michael Sørensen, for his dedicated work to all committee matters, since 2008. I take the occasion to thank him, also personally, for the many and long discussions we had over these years, seeking always the best for the publications sponsored by the Society. With big enthusiasm, we welcome the new member Thomas Mikosch (past editor of *Stochastic Processes and their Applications*). At this occasion, we also want to thank Thomas for his dedication and his excellent work as editor of SPA over the period April 2009--March 2012.

One of the responsibilities of this committee is to coordinate the search for new editors of the Bernoulli Society publications. We are happy that Eric Moulines has accepted our nomination, and has already been appointed by the Bernoulli Society to serve as the new editor for the journal *Bernoulli*, for a three-year term starting January 1, 2013. On behalf of the committee, I give him my best wishes for the next editorial term. It is also my joy to thank the current editor Richard A. Davis for his tremendous work ahead of Bernoulli, since January 2010.

Aware of the crucial importance of good access and price policies for the main publications, the Bernoulli Society charges this committee of keeping permanent contact with Elsevier, owner and publisher of the journal *Stochastic Processes and their Applications*. As announced in Bernoulli News, v. 18, 2, 2011, the latest SPA sponsorship contract (signed in 2011) between the Bernoulli Society and Elsevier, includes a plan of substantial successive annual price reductions of the full institutional subscription, leading to a future unification

with the current alternative institutional subscription. The committee is following this. We are pleased to inform the membership that there has been a further positive initiative from the side of Elsevier, in what regards the delayed open access. For the particular case of SPA, this extends the current open delayed free access (4 years after publication) to the full collection, since Volume 1, Number 1, 1973. Other general positive initiatives can be found at the website of Elsevier (<http://www.elsevier.com/mathematics>) in their 3rd letter to the mathematics community. Still related to the sponsorship contract, Elsevier offers annually 2000 EUR in travel grants for students to attend conferences. In 2013, these grants will be allocated to attendees of the 36th SPA Conference and the 7th Conference on Lévy Processes.

Regarding the activities of 2013 -- *International Year of Statistics*, the Bernoulli Society will have two special publications: a special issue of Bernoulli, guest edited by Richard A. Davis and Thomas Mikosch, and a special issue of SPA, guest edited by Rainer Dahlhaus, Nakahiro Yoshida, Per Mykland and Jean Jacod. Both issues will have open access since publication.

Finally, let me add a report from the joint BS-IMS Publications Management Committee (S. Lalley, S. A. Murphy, M. Sørensen, M. E. Vares -- chair). The nomination process for a new editor for *Electronic Journal of Statistics* (EJS) has been concluded. George Michailidis, University of Michigan, will be the new chief editor, starting January 1st, 2013. We take the occasion to transmit our recognition and sincere thanks to the current editor David Ruppert for his service and excellent work for EJS over the last three years.

Maria Eulalia Vares
Chair of the Publications Committee

News from the Committee on Probability and Statistics in the Physical Sciences, C(PS)²

In the past year of action since its re-assembly (August 2011), C(PS)² has set as a primary goal of its mission the enhancement and promotion of the Bernoulli Society's partnership in two major worldwide initiatives:

Mathematics of Planet Earth (MPE-2013),
<http://www.mpe2013.org>

International Year of Statistics (IYS-2013),
<http://www.statistics2013.org>

To that goal, C(PS)² has steered the proposal and organization of several Invited Sessions in a number of major forthcoming international conferences sponsoring either one or both initiatives. The current list of proposed Invited Sessions (including the session's title, organizer's name, hosting event and current status) is the following:

Probabilistic and Statistical Contributions in Climate Research,

Philippe Naveau (naveau@lsce.ipsl.fr),
59th World Statistics Congress of the International Statistical Institute,
 Hong Kong, China, August 25--30, 2013,
<http://www.isi2013.hk/>
 (Approved: Session IPS.001).

Statistical Theory of Turbulence,

Bjorn Birnir (birnir@math.ucsb.edu),
36th Conference on Stochastic Processes and their Applications (SPA-2013),
 Boulder, Colorado, USA, July 29 -- August 2, 2013,
<http://math.colorado.edu/spa2013/>
 (Approved)

Graph and Network Analysis in the Geosciences,

Jorge Ramirez (jmramirezo@unal.edu.co) and Ilya Zaliapin (zal@unr.edu),
1st Mathematical Congress of the Americas (MCA-2013),

Guanajuato, Mexico, August 5--9, 2013,
<http://www.mca2013.org/>
 (Approved)

Stochastic Downscaling Methods in Geosciences,

Julie Carreau (julie.carreau@univ-montp2.fr),
2013 Joint Statistical Meetings of the American Statistical Association-Statistics and the Environment Section (ASA-ENVR/JSM-2013),
 Montreal, Quebec, Canada, August 3--8, 2013,
<http://www.amstat.org/meetings/jsm/2013/>
 (Proposal under pending evaluation)

In addition to promoting the MPE-2013 and IYS-2013 initiatives in major international research conferences, C(PS)² is also involved through the scientific co-chairmanship served by Ilya Zaliapin in the organization of education and capacity-building workshop *Mathematics of Climate Change and Natural Hazards*, to be held in Guanajuato, Mexico, July 29--August 3, 2013 (<http://cams.usc.edu/mathgeo/>) as a satellite workshop to the *1st Mathematical Congress of the Americas (MCA-2013)*. The workshop is organized as a part of the MPE-2013 program and is co-sponsored by the International Mathematical Union, International Union of Theoretical and Applied Mechanics, and International Union of Geodesy and Geophysics.

Fresh ideas and initiatives for the organization of workshops and/or sessions/conferences under the auspices of C(PS)² in areas of pertinent interest (e.g. Astrophysics, Biophysics, Geophysics, etc.) are most welcome and strongly encouraged. For further consideration and communication of your ideas with C(PS)², please visit our website <http://www.aueb.gr/bs-cpsps/> where you may also find posted up to date information on current or planned activities.

Harry Pavlopoulos, Athens, Greece
Chairman of the C(PS)²

Opening Address at the 8th World Congress in Probability and Statistics, 8 July 2012, Istanbul, Turkey, by Arnoldo Frigessi, Chair of the Scientific Programme Committee

Excellences,
 President of the Bernoulli Society
 President of the Institute of Mathematical Statistics,
 dear participants to the 8th World Congress in Probability and Statistics

Our ambition, as researchers, is to make sense of events and phenomena in the real world, and by better understanding them, predicting and controlling them, to

contribute to progress knowledge and to bring about positive change.

Within probability and statistical science, the perspectives and methods that are suited to these purposes are many, as proved by the fantastic scientific programme of this world congress.

The Scientific Programme Committee is very proud of the programme of this world congress, where so many exciting innovative facets of our sciences will be presented. During this week, here in Istanbul, you will see how scientists from all over the world, both young and established, are pushing further the frontiers of statistics and probability. By following the 14 plenary lecturers, the 40 invited sessions, the 90 contributed sessions and the poster sessions, 635 contributions in total, you will discover the directions that modern statistics and probability are taking, so that our sciences are ready to face the challenges of our time, from climate change to cancer, from ecology to social sciences, from engineering to new communication technologies.

From the beginning of our work in March 2010, our aim has been to construct a programme with windows widely open on the grand contemporary research lines of statistics and probability, including new inferential paradigms, complex stochastic dependence and enchanting critical behaviours. But also, we wished to portrait the substantial impact that our disciplines have on science and innovation.

As Andrey Kolmogorov said in his opening address to the first world congress, in Tasjkent in 1986, the congress was devoted to “just one field of mathematics – probability theory and mathematical statistics” and this traditional view is still visible in the programme of the 8th World Congress.

But today the motor that pushes our disciplines further is in the applications. Molecular biology is one of the fields where modern statistics is developing, for example. New stochastic models and statistical methods play key roles in value creation, as measured in terms of Turkish lira, lives saved, or centigrades of global warming spared. Therefore, if you are working in statistical genomics, or in financial mathematics, or in climate change, to mention some examples, you will find every day a rich programme of lectures explicitly thought for you. And I encourage all others not yet working on these and other applications, to go to listen to these sessions -- you will find the study of the fitness of viruses in infectious diseases fascinating, I promise you.

In these days, we read on the front pages of the newspapers all over the world that experiments at CERN see strong indications for the presence of a new particle, which could be the Higgs boson and a key factor for critical behaviours which explain the world. Statistics clearly plays a key role here, as the way to battle against noise, to detect precious and minute signals in oceans of logged traces. Not only at CERN, but almost in all areas of science, technology, industry and society, we measure more and

more, lots of mostly uninteresting data, but within which a treasure hides, a discovery is concealed and stochastic models and inference are the instruments we need to find them, now often in the new context of hypothesis generation, and with the support of assumptions like sparsity or more structured Bayesian constructions. The role of probability theory and stochastic processes to describe the world in more and more detail is growing enormously, and soon even the most traditional biologist will understand the beauty of testing hypotheses without p-values and even without data.

On another axis, by integrating data at different scales and types, and with knowledge, we explain and predict, and quantify the uncertainty left over when all the information contained in data has been exploited. Uncertainty is an unfortunate reality but also represents a degree of freedom as it gives a clear space to other valuable points of view, other disciplines, or political decisions. We are generous!

I am very happy to underline two more aspects of the congress.

This 8th world congress is young: 30% of all participants are students. And it starts to become really a global congress, with all continents represented and with 36% of participants coming from developing countries.

Thanks to support from The World Bank, the Biometrika trust, the publisher Elsevier, Google, the European Mathematical Society, the International Mathematical Union and Statistics for Innovation in Oslo, as we have awarded travelling grants to 30 young scientists from countries in Africa, South America, Asia and Europe, to come to Istanbul. A total of 60 young statisticians and probabilists have participated to a pre-congress weekend, during which they have attended lectures given by invited speakers to the congress, and discussed freedom of science and the challenges of being students under different conditions worldwide.

Let me conclude.

We shall not lose sight of the fact that science must serve public interest. The world can count on us, on the critical and independent voice of the probability and statistics global scientific communities, also here represented.

I wish you a fruitful, exciting, motivating, innovating journey through statistics and probability, here in Istanbul, crossroad of cultures, during this week.

Arnoldo Frigessi

Young Statistician Benefitting from Travel Award Addresses 8th World Congress Participants at the Opening Ceremony, 8 July 2012, in Istanbul, Turkey.

Dr. Syeda Darakhshan Jabeen was granted one of the awards to participate to the 8th World Congress in Istanbul and to the pre-congress Young Statisticians and Probabilists weekend. She accepted to give a short speech at the opening of the world congress, which is reprinted below with her permission.

Dr. Syeda Darakhshan Jabeen, has a PhD from the Department of Mathematics, the University of Burdwan, West Bengal, India, in the year 2010. The title of her thesis was “Development of some Hybrid Genetic Algorithms and Applications” and the main supervisor was Professor Rathindra Nath Mukherjee. She received the Council of Scientific and Industrial Research award in 2008. Syeda has written 6 papers; the paper she particularly likes is “Real-coded genetic algorithm with variable rates of crossover and mutation -- A basis of global optimization for multi-modal function via Interval technique,” published in the International Journal of Computer Mathematics in 2006. She lives in Kharagpur, which has the longest railway platform in the world (1072.50 meters in length), located in the state of West Bengal. Syeda will start a postdoc period at the Institute of Indian Statistical Institute, Kolkata.



Her address at the World Congress was as follows:

Good morning everybody and a warm welcome to all of you in the world congress!

I feel great to be here in Istanbul, one of the most beautiful places in the world.

I also find myself lucky that I have been awarded full financial support to participate in the pre-congress

week-end workshop and the world congress. For this, I really thank the organizers for offering me the grant and the trouble they have taken in gathering support from various organizations. I also thank all the sponsors that have given people like me the possibility to be here. Without a grant, I would not be here.

The pre-congress young researchers 3 days programme, which was organized here was wonderful. To my knowledge I think such programmes are rarely set up. I participated in the programme and I found every invited lecture to be really very interesting. Apart from many important problems related to research, like how to write and publish good papers, the problems that researchers from developing countries face, like India, too, and how the young scientists from these countries can excel.

This is, in fact, my first visit abroad and the first that I do on my own, and alone. Initially, when I came to know that I am the only participant from India to the young event, I was very much afraid and worried about my journey, as this was my first flight on my own. My heart was forcing me to go and join the conference, meet people from all over, interact with them and know emerging research themes. My mind said “no it is unsafe to go alone to an unknown country where they speak Turkish.” I listened to my heart and started querying and disturbing again and again the organizers and Professor Arnaldo Frigessi with various questions. But they helped me. This developed confidence in me and I started my journey to Istanbul for the conference. It was surprising, and my journey was wonderful. When I landed here four days ago, the message that Frigessi mailed me was “Don’t be stressed, your journey will be fine” flashes in my mind and it was truly so.

Thank you again for inviting me and all other young statisticians and probabilists from many developing countries to the world congress. Since this is my first time in Europe, I find this to be very exciting and a source of learning of history, culture traditions of the country. Like me, I am sure all of you will enjoy being here because of the scientific programme but also because the historic beauty of the place.

We will listen to your talks with great attention and we will go home richer. Thank you.

Syeda Darakhshan Jabeen

Awards and Prizes

Nancy Flournoy Receives the Janet L. Norwood Award for Outstanding Achievement by a Woman in the Statistical Sciences.

Dr. Nancy Flournoy, Professor in the Department of Statistics at the University of Missouri College of Arts and Sciences, is the recipient of the Eleventh Annual Janet L. Norwood Award for Outstanding Achievement by a Woman in the Statistical Sciences. She accepted the award at a ceremony that took place at University of Alabama at Birmingham, in September 2012.



Prof. Nancy Flournoy

Dr. Flournoy received her BS and MS in Biostatistics from UCLA and her PhD from the University of Washington. Spanning four decades, her rich diversification in academic appointments range from Directorships at the Fred Hutchinson Cancer Research Center and NSF's Program in Statistics and Probability, to chairmanships with American University and the University of Missouri (MU).

Having recently stepped down as MU's Chair of Statistics, she is now returning from sabbatical as Professor. Her research interests in theoretical and applied statistics include: clinical trials, adaptive sequential designs, transplantation biology and infectious disease, specifically cytomegalovirus at a key point prior to the AIDS epidemic. Notably, her initial collaborative efforts on transplantation research with the team of Dr. E. D. Thomas led to that worthy receiving the Nobel Prize in Medicine in 1990. Dr. Flournoy is a long-standing member of many societies, including the Bernoulli Society, the Institute of Mathematical Statistics (Fellow, '90 & Council Member, '04-'07); Washington Academy of Sciences (Fellow, '93 & Board of Directors Member, '91-'92); World Academy of Art Science (Fellow, '92); American Statistical Association (Fellow, '92 & Council Chair, '93-'95); American Association for the Advancement of Science (Fellow, '93 & Statistics Chair, '01-'04).

SPA/Elsevier Travel Awards 2012 for the 8th World Congress in Probability and Statistics and for the Pre-world Congress Meeting of Young Researchers in Probability and Statistics

The 8th World Congress in Probability and Statistics was held in Istanbul from July 9 to 14, 2012, and the Pre-world Congress Meeting of Young Researchers in Probability and Statistics 2012, 6--8 July 2012.

The publishing company Elsevier and the journal *Stochastic Processes and Their Applications* -- An Official Journal of the Bernoulli Society -- support the conferences with four Elsevier Travel Grants. The amounts 2000 Euros are distributed to the winners depending on actual travel costs.

The grants were awarded to the following young researchers:

- Omar Boukhadra (Université de Constantine, Algeria)
- Jiang Hu (Northeast Normal University, China)
- Xinpeng Li (Shandong University, China, and Université Paris 1 Panthen-Sorbonne, France)
- Ali Mohammadian Mosammam (University of Zanjan, Iran)

Takashi Kumagai, Kyoto

David's Musings: On suspiciously precise answers to intrinsically imprecise questions.

These are notes for some potential future talk. The talk could be pitched anywhere on the non-technical to technical, or the humorous to serious, spectrum. The point is to encourage the audience think about assumptions and evidence behind assertions they might encounter. Readers should feel free to borrow these examples, or tell me their favorite examples.

A first category, not requiring much discussion, is

proverbs and sayings that are plainly not intended to be taken literally. For instance, "a picture is worth a thousand words". But this quickly segues into examples whose seriousness is unclear. Consider casual assertions of an 80-20 rule, e.g. like "80% of the work in any organization is done by 20% of the employees" or "80% of crashes are caused by 20% of bugs". One issue is whether there's any representative data at all to support a particular such generalization.

Another issue is that there are hundreds of possible contexts like the two above, and only a few round number splits (70-30 or 90-10 or 95-5 or) so for any prespecified split such as 80-20 one would expect to find many contexts where this approximate split did indeed occur. So, the 80-20 rule may serve as a proverbial expression of the idea "most things are not distributed equally" but relying on its numerical accuracy or significance is surely misleading. (The relevant Wikipedia entry, *Pareto principle*, strikes me as overly credulous.)

A second category is where the number does have a precise technical meaning, but that meaning isn't well expressed in the usual verbal formulation. It is sometimes said that the age of the solar system is 4,568 million years, implying one can pin down some founding event to within a million years. In this case, the event was the gravitational collapse of a small part of a giant molecular cloud. But the everyday meaning of *solar system* refers to the sun and major planets, whose initial formation occurred slightly later over an estimated period of some tens of millions of years. Within our own discipline, a well-known example is the assertion that "7 shuffles suffice to mix a deck of cards". This originates from a famous 1992 paper (<http://projecteuclid.org/euclid.aoap/1177005705>) of Bayer-- Diaconis and is a good first example one might discuss in detail in a talk. In brief (i) it is based on a mathematical model for riffle shuffles that seems reasonable; (ii) "7" does have a precise meaning (in terms of the variation distance to the uniform distribution dropping below $1/2$); but (iii) the idea of "a well-shuffled deck" is intrinsically imprecise and there is surely no one correct way to quantify it.

Here are more typical examples of what I have in mind. *Dunbar's number* (150) is an asserted "maximum number of people with whom one can maintain stable social relationships" (quoting Wikipedia), often more loosely asserted as the maximum size of a cohesive human social group. And Malcolm Gladwell, as a major point in his best-selling *Outliers*, asserts 10,000 hours as the time that exceptional individuals have needed to spend to master their skill. In both cases, one could spend time in a talk analyzing where these numbers actually come from.

Another example (suggested by Persi Diaconis) is a 1956 George Miller paper *The Magical Number Seven* (<http://cogprints.org/730/1/miller.html>), which has attracted almost 15,000 citations in Psychology. The paper used data and then-novel information theory to argue that, when subjects are presented with one-

dimensional sensory stimuli (sweetness; musical pitch; length of lines) and asked to categorize their level, "7" is the maximum number of categories for which individuals are fairly consistent in their categorization. But this author was prudent enough to include "Plus or Minus Two" in his title.

On the humorous side, the "42" from *The Hitchhiker's Guide* and I.G. Good's *46656 Varieties of Bayesians* both make interesting points that it's surely unnecessary for me to explain here.

At the end of the talk, I might take the opportunity to slip in two of my own "suspiciously precise" numbers. In sports matches between equally good teams (initially 50-50 chances) which end with one winner, how much (on average, over matches) of the uncertainty about the outcome is resolved in the first half, and how much in the second half? In an oversimplified but not ridiculous model, one can calculate that the conditional probability of a given team winning, given the events of the first half, is uniform on $[0,1]$. Then an analysis of variance decomposition says there is a $1/3$ -- $2/3$ split in the "resolution of uncertainty" between the two halves. Second, in designing an inter-city road network linking n cities in a country of area A , I assert that the optimum total network length will be about $2(nA)^{1/2}$. Here, the $(nA)^{1/2}$ arises by a scaling argument, whereas the constant 2 is an approximate point where a "law of diminishing returns" becomes apparent, in that adding extra network length would do little to reduce route lengths.

On an unrelated matter, I was sad to learn that the AMS is discontinuing the monthly printed editions of individual *Mathematical Reviews* sections. I have subscribed to section 60 (Probability) for the last 30 years and enjoyed browsing it each month. The fact that the July 2012 issue covered 322 papers whereas the July 1982 issue covered 138 papers testifies to the growth of the field of Probability (overall growth of *MR* is considerably less). Of course, there is nowadays the daily email from arXiv math.PR, which currently has about 150 new preprints per month. In principle, it may well be more desirable to see a preprint today, rather than a review several years in the future. But in practice we all find dealing with email to be a chore, so the result is that a perceived minor pleasure has been turned into a perceived minor chore. Oh well.

David Aldous, Berkeley

Editor's note: This is the sixth installment of a regular opinion column.

Past Conferences, Meetings and Workshops

Special sessions sponsored by Bernoulli Society at the 2nd IMS Asia Pacific Rim Meeting, July 2012, Tsukuba

The 2nd Institute of Mathematical Statistics Asia Pacific Rim Meeting (ims-APRM 2012) was held, with 507 participants, at Tsukuba International Congress Center, Tsukuba, July 2--4, 2012 (<http://ims-aprm2012.org/index.html>). The meeting was jointly sponsored by IMS, the International Chinese Statistical Association, the International Indian Statistical Association, the Japan Statistical Society, the Korean Statistical Society, the Institute of Statistical Mathematics and Bernoulli Society.

The Bernoulli Society organized two invited paper sessions Interface of Probability and Mathematical Statistics I (IP30 on July 2) and II (IP40 on July 3). The development of these special sessions partially arose out of a request from young researchers to develop initiatives that would help to encourage and restore some of historically strong ties between statistics and probability. The Bernoulli Society invited six speakers from the forefront of contemporary research fields. These talks covered moderate deviation, genetic variation in populations, high dimensional variable selection, high frequency data, discovery of disease causing mutations, nonparametric statistics on

manifolds and showed new methodologies interfacing probability and mathematical statistics in order to approach various problems in the real world.

IP30. Interface of Probability and Mathematical Statistics I. Sponsor: Bernoulli Society
Organizer: Edward Waymire (Oregon State University)
Chair: S.R.S. Varadhan (New York University)
Speakers: Qi-Man Shao (Hong Kong University of Science and Technology), Yee Whye Teh (University College London), Jelena Bradic (University of California, San Diego)

IP40. Interface of Probability and Mathematical Statistics II. Sponsor: Bernoulli Society
Organizer: Edward Waymire (Oregon State University)
Chair: Peter Hall (University of Melbourne)
Speakers: Takaki Hayashi (Keio University), Melanie Bahlo (Walter and Eliza Hall Institute of Medical Research, Australia), Rabi Bhattacharya (University of Arizona)

Nakahiro Yoshida

Random Networks & Environments Post-Congress Workshop, July 16--20, Istanbul, Turkey

This meeting was held in Istanbul, Turkey, on July 16--20, 2012, i.e. right after the 8th World Congress in Probability and Statistics. There was a total of 39 senior and junior participants from 12 countries (Austria, Brazil, France, Germany, Hungary, Israel, Italy, Russian Federation, Switzerland, Turkey, United Kingdom and United States). The invited speakers were:

- Noam Berger, Hebrew University, Israel
- Jean-Dominique Deuschel, TU Berlin, Germany
- Hugo Duminil-Copin, Université de Genève, Switzerland
- Nina Gantert, TU München, Germany
- Christina Goldschmidt, University of Oxford, UK
- Alan Hammond, University of Oxford, UK
- Dima Ioffe, Technion, Israel
- Elena Kosygina, Baruch College, USA
- Sebastian Müller, Aix-Marseille I, France
- Gábor Pete, TU Budapest, Hungary
- Firas Rassoul-Agha, University of Utah, USA
- Leonardo Rolla, IMPA, Brazil
- Timo Seppäläinen, UW Madison, USA
- Vladas Sidoravicius, IMPA, Brazil
- Alain-Sol Sznitman, ETH Zürich, Switzerland
- Adam Timar, Rényi Institute, Hungary
- Fabio Toninelli, ENS Lyon, France
- Bálint Tóth, TU Budapest, Hungary
- Laurent Tournier, Paris XIII, France
- Wolfgang Woess, TU Graz, Austria
- Olivier Zindy, Paris VI, France
- Nikos Zygouras, University of Warwick, UK



The talks and the discussions focused on the following topics: various models of percolation, polymers and the KPZ universality class, ballisticity of random walk models such as SAW and RWRE, CLT for random walks on graphs and groups, static and dynamic properties of the 3D Ising model, and other properties and scaling limits of various random discrete structures.

Abstracts of the talks are available at:

<http://www.math.boun.edu.tr/instructors/yilmaz/RNE.html>

The workshop was organized by Atilla Yılmaz (chair) and Serdar Altok from the Department of Mathematics of Bogazici University. The venue was the Istanbul Center for Mathematical Sciences (IMBM) located on the Bogazici University campus. The workshop was financially supported by the European Science Foundation (through its RGLIS program), IMBM, and the Bogazici University Foundation. It was officially sponsored by the Bernoulli Society as a related event for the 8th World Congress in Probability and Statistics.

Atilla Yılmaz

Feza Gursev International Summer School in Mathematical Physics III: Probabilistic Aspects of Contemporary Physics, 20 June—06 July 2012, Istanbul, Turkey

The third international Feza Gursev Summer School, entitled "Probabilistic Aspects of Contemporary Physics", took place between June 20 and July 6 in Istanbul, under the auspices of Bosphorus University and the Bernoulli Society.

The Summer School featured four invited lecturers, who gave between five and eleven lectures each. The speakers and corresponding topics were:

- Abdelmalek Abdesselam (University of Virginia, USA), on "Modern Methods of Constructive Quantum Field Theory";
- Philippe Di Francesco (Service de Physique Theorique, Saclay, France), on "Integrable Combinatorics";
- Roberto Fernandez (Utrecht University, Netherlands) on "Classical and Quantum Spin

Models: Correlation Inequalities, Critical Behaviour and Disorder";

- Takashi Hara (Kyushu University, Japan) on "Critical Behaviour of Stochastic Geometric Models and the Lace Expansion".

The lectures tied in well together, complementing each other, particularly those of by R. Fernandez and T. Hara. They speakers gave an in-depth study of the topics considered, to the delight of those participants, many of whom had not been previously exposed to such a detailed treatment. The lectures were attended by 20 students, half from institutions in Turkey, and the remaining from countries including Canada, the United States, the Netherlands, Iran, the United Kingdom, and India, among others.



Compared with the two previous summer schools, one novelty of this summer school, which was appreciated by everyone, was the organization of seminars given by the participants themselves. Tyler Helmuth (University of British Columbia, Canada), Ajay Chandra (University of Virginia) and Robert Fitzner (Technical University of Eindhoven) gave talks on their research

activities. Though having been organized under some difficult circumstances, the workshop was a success thanks to the support of Bosphorus University and the Bernoulli Society.

Arif Mardin

Forthcoming Conferences, Meetings and Workshops

29th European Meeting of Statisticians, July 20—25, 2013, Budapest, Hungary

The European Regional Committee of the Bernoulli Society for Mathematical Statistics and Probability, the community of Hungarian statisticians and probabilists and the organizers cordially invite their colleagues to participate in the 29th European Meeting of Statisticians, to be held in Budapest, Hungary, from 20 to 25 July 2013.

The European Meeting of Statisticians is uniquely the broadest and most prestigious regular meeting of the profession in Europe, having long history and well established traditions. Two distinguishing feature of the current occasion are worth being emphasized, however. Beyond providing a natural forum for exchange of ideas for European statisticians and probabilists, particular organizational effort has been made to represent both traditional and newly emerging ties of the European professionals with the whole World. Hence, we expect colleagues from India, China, South-East Asia, the Middle-East, North- and Latin-America to participate in greater than usual number. It is also the ambition of the organizers to stimulate the inseminating tie between probability and statistics by a balanced representation of intertwined topics of both disciplines.

The framework of these specialties is provided by the year 2013 itself as it brings a number of celebrating anniversaries, connected to our profession. The year

2013 marks the 300th anniversary of both the posthumous publication of Jacob Bernoulli's "Ares Conjectandi", and the St Petersburg Paradox. The 250th anniversary of the posthumous presentation to the Royal Society of Thomas Bayes' essay on the problem of "inverse probability" commences also in 2013. The Bernoulli Society sees EMS2013 as the perfect occasion to celebrate these events with due respect and consideration.

Organized discussion sessions may provide excellent occasions for talking over or debating on issues like free access to publications, assessment of the originality of scientific works, measurements of scientific accomplishments, and the access of the profession to the now changing European funding resources.

<http://ems2013.eu/site/index.php>

Abstract submission is now open. It is also possible to organize full contributed sessions "streams", of 4 presenters, please check the abstract submission page,

http://ems2013.eu/site/index.php?page=en/Abstract_submission

*Laszlo Markus
Chair of the LOC*

Perspectives on Actuarial Risks in Talks of Young Researchers (PARTY) Winter School, January 27—February 1st, Monte Verita, Switzerland

This international workshop is targeted to young researchers (PhD students and researchers, academics, practitioners within 5 years after PhD) working on current actuarial science topics. It focuses on two main areas of research of today's insurance risk, namely longevity risk and risk theory. These disciplines have developed independently for many years, but in the new life insurance context (i.e. variable annuities, unit-linked products) they start to converge in a rapid way. Thus, their independent tools and approaches need to be combined, forcing researchers to learn each other languages to answer the current insurance risk questions.

The Workshop will be held at the Centro Stefano Franscini, and is also financially supported by the University of Lausanne and the University of Liverpool, the ASA and the Institute of Actuaries. It is officially

sponsored by the Bernoulli Society.

Keynote speakers include:

- Hansjörg Albrecher (University of Lausanne)
- Steve Haberman (City University)
- Enkelejd Hashorva (University of Lausanne)
- Stéphane Loisel (University of Lyon 1)
- Philippe Maeder (Swiss Re)
- Annamaria Olivieri (University of Parma)
- Ermanno Pitacco (University of Trieste)
- Daniel Ryan (Swiss Re)

For further details and registration, please visit www.unil.ch/party2013

Corina Constantinescu and Séverine Gaille

XVII Brazilian School of Probability, August 4—10, 2013, Rio De Janeiro, Brazil

The XVII Brazilian School of Probability (XVII EBP) will be held in Mambucaba, Rio de Janeiro, August 4--10, 2013. At this occasion, we shall celebrate more than thirty years of friendship and scientific interaction between the group of mathematical physics and probability of Roma and L'Aquila and our group of probability in Brazil.

Invited presentations include short courses by Martin Hairer (Warwick) and Errico Presutti (Roma), and lectures by Thierry Bodineau (ENS, Paris), Antonio Galves (USP), Giambattista Giacomin (Paris 7), Joel Lebowitz (Rutgers), Stephan Luckhaus (Leipzig), Immacolata Merola (L'Aquila), Leonardo T. Rolla (IMPA), Vladas Sidoravicius (IMPA) and Livio Triolo (Roma).

There will be also space for short communications and poster sessions. Deadlines for registration and submission of contributions will be announced by December 31, 2012.

The EBP is an annual event. This 17th edition is organized by IM-UFRJ and IMPA. It is also sponsored by the Bernoulli Society.

Further information: <http://www.im.ufrj.br/ebp17/> or http://www.impa.br/opencms/pt/eventos/store/evento_1304

Maria Eulalia Vares

Building Bridges: Probability, Statistics and Applications, August 13—August 16, 2013, TU Braunschweig, Germany

The conference Building Bridges: Probability, Statistics and Application will be held in the International Year of Statistics 2013. Special events will also commemorate the 60th birthday of Claudia Klüppelberg.

The aim of this conference is to bring together leading researchers working in the strongly interconnected fields of probability, statistics and their applications. Topics covered include: Extreme Value Theory, Insurance Mathematics, Lévy Processes, Mathematical Finance, Random Fields, Risk Management, Statistics for Stochastic Processes, Turbulence. Claudia Klüppelberg's diverse scientific work is a fine example showing how important it is to look at both theory and applications in probability and statistics.

By now, 28 distinguished speakers have agreed to contribute to the conference. A complete list of speakers and further details can be found at

<https://www.tu-braunschweig.de/stochastik/tagungen/building-bridges>

The conference is sponsored by the Bernoulli Society as part of their activities in the International Year of Statistics 2013 <http://bs2013.org/>.

Vicky Fasen, Alexander Lindner, Thomas Mikosch, Robert Stelzer

New Executive Members in The Bernoulli Society

Editor of Bernoulli Journal: Eric Moulines



Eric Moulines received the MSc from Ecole Polytechnique (1984), and MSc and PhD degrees in electrical engineering from Ecole Nationale Supérieure des Télécommunications, now Telecom ParisTech-, in 1986 and 1990, respectively.

During 1986—1990, he was at the Centre National d'Etudes de Télécommunications, in the capacity of Research Engineer in speech processing. Since 1990, he is with the Department of Signal and Image Processing, Telecom Paristech where he is now a Professor of Statistics. His research interests encompass a wide

spectrum of topics in time series analysis with a special emphasis on long-memory processes and non-linear state-space models, Markov chain and sequential Monte Carlo methods and the applications of statistics and probability to signal processing.

Dr. Moulines is an EURASIP fellow. He received the Silver Medal from the French CNRS for his contribution to statistical signal processing and the 2011 France-Télécom prize of the French Academy of Sciences. He has served the scientific community in various ways, notably working as associate editors of *IEEE Trans. On Signal Processing* (1996--2000), *Signal Processing* (2000--2007), *Stochastic Processes and their Applications* (2008--2012), *ESAIM Probability and Statistics* (2003--), *Journal of Statistical Planning and Inference* (2012--), *Bernoulli* (2007--). He has published around 120 scientific papers in statistics and applied probability.

Editor of Electronic Journal of Statistics: George Michailidis



George Michailidis obtained his PhD in Mathematics from UCLA in 1996 and did a two-year postdoc at Stanford University before joining the University Michigan in 1998, where he is currently a Professor of Statistics. His current research interests include analysis

of high dimensional data, network analysis with applications to biology and engineering problems, stochastic modeling and visual analytics.

He has served on many editorial boards, including the *Journal of the American Statistical Association*, the *Journal of Computational and Graphical Statistics*, *Technometrics*, *Journal of Statistical Planning and Inference*, *Journal of Nonparametric Statistics* and the *ASA-SIAM Series on Statistics and Applied Probability*.

He is a Fellow of IMS, ASA and elected member of ISI.

Chairman of the Publications Committee: Maria Eulalia Vares



Maria Eulalia Vares obtained her PhD in 1980 from UC Berkeley. Since 1981 to 2002, she worked as a researcher at the Institute of Pure and Applied Mathematics (IMPA), in Rio de Janeiro, Brazil, where she became a full researcher in 1987. In 2002, she moved from

IMPA to the Brazilian Center for Research in Physics

(CBPF), also in Rio de Janeiro. She has served as the Editor for Stochastic Processes and Applications (2006-2009), where she is currently and Associate Editor. She is currently the Editor of *Ensaios Matemáticos* and an Associate Editor for the Brazilian Journal of Probability and Statistics. Her research interests include interacting particle systems, stochastic models and problems coming from statistical mechanics, metastability, spatial growth in random environment and related percolative systems.

Treasurer: Lynne Billard



Lynne Billard is University Professor in the Department of Statistics at the University of Georgia's Franklin College of Arts and Sciences. She received her BSc and PhD from the University of New South Wales, Australia, where she began her teaching career in 1966. She has held appointments at the

University of Waterloo in Canada and Florida State University, among others. Currently, Dr. Billard is a university professor at the University of Georgia,

adjunct professor at Australian National University, and an honorary professorial fellow at the University of Melbourne. Her research interests include: epidemic theory relative to AIDS; stochastic processes with emphasis on model building; sequential analysis with emphasis on hypothesis testing; statistical inference with emphasis on estimation problems, time series analysis; and symbolic data analysis. Dr. Billard is a long-standing member and recipient of numerous honors from many notable societies such as the American Statistical Association (President 1996), the International Biometric Society (President 1994, 1995), the Institute of Mathematical Statistics (Fellow 1988) and the Interface Foundation of North America (Founding Secretary 1987), to name a few.

Membership Secretary: Mark Podolskij



Mark Podolskij will be taking up the role of Membership Secretary of the Bernoulli Society, effective January 2013. Dr. Podolskij is full professor for Applied Probability and Statistics at the University of Heidelberg. He received his PhD from Bochum

University (2006, Germany) and was Postdoc at CREATES (2007--2008) and at ETH Zurich (2008-2010). He is an Associate Editor for the Electronic Journal of Statistics, Statistics and Risk Modeling and *Statistica Sinica*. He was one of the Special Invited Lecturers at the 28th European Meeting of Statisticians (Piraeus, Greece) in 2010 and the author of one of the 10 most cited papers for the period 2005--2010 published in the journal "Stochastic Processes and Their Applications". His main research interests are: inference for semimartingales, tests for diffusion processes, central limit theorems for high-frequency data and Malliavin calculus. He is a world class draughts player, reaching the status of vice world champion in 2007.

Calendar of Events

This calendar lists all meetings which have been announced in this and previous issues of Bernoulli News together with forthcoming meetings organized under the auspices of the Bernoulli society or one of its


January 2013

- January 27th--February 1st, Perspectives on Actuarial Risks in Talks of Young Researchers (PARTY) Winter School, Monte Verita, Switzerland, www.unil.ch/party2013


June 2013

- June, 6th--9th, 2013, German-Polish Conference on Probability and Mathematical Statistics, Torun, Poland, www.gpps.umk.pl
- June, 10th, 2013, Tomasz Schreiber's Memorial Session, Torun, Poland, www.tsms.umk.pl
- June, 11th--15th, 2013 17th Workshop on Stochastic Geometry, Stereology and Image Analysis, Torun, Poland, www.sg2013.umk.pl

July 2013

-  July, 20th--25th, 2013, *European Meeting of Statisticians*, Budapest, Hungary, <http://www.math.elte.hu/probability/markus/EMS2013.html>


Regional Committees (marked by ). A more comprehensive calendar of events is available on the ISI Website <http://isi.cbs.nl/calendar.html>

-  July, 29th – August 2nd, 2013, *36th Conference on Stochastic Processes and their Applications*, Boulder, Colorado, USA, <http://math.colorado.edu/spa2013/>

August 2013

- August 4th--10th, XVII Brazilian School of Probability, Rio De Janeiro, Brazil, <http://www.im.uff.br/ebp17/>
- August 13th --August 16th, Building Bridges: Probability, Statistics and Applications, TU Braunschweig, Germany, <https://www.tu-braunschweig.de/stochastik/tagungen/building-bridges>
-  August, 25th--August 30th, *The 59th World Statistics Congress of the International Statistical Institute*, Hong Kong, China, <http://www.isi2013.hk/>

July 2014

-  July, 28th--August 1st, 2014, *The 37th Conference on Stochastic Processes and Applications (SPA)*, Buenos Aires, Argentina