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Dear reader,

The last Offspring issue, as predicted by its title, was a huge 'success'. We got a lot of positive feedback on it. We were very happy about all the responses; they encouraged us to put even more effort into this issue. Hopefully you enjoy the one on 'diversity' as much as the 'success story'!

If you missed the last Offspring, all the issues can be downloaded from our website (see page 35). Additional material for some articles of the current volume is also available online, since we received more texts than we could include in the print version. These articles are marked like this 💻. A big Thank You to everyone who wrote an article, responded to our survey or provided us with pictures, ideas and inspiration!

The concept of diversity has created new research topics in many disciplines, that's why this issue is dedicated to diversity: Read about which impact the idea of diversity has for the research of three PhD-students, representing the Humanities, BioMed and CPT section. Furthermore we investigated the everyday diversity among Max Planck PhD students beyond science. In addition, we have an interesting article about taking a timeout from your PhD work. And of course, this issue also informs you about past and future activities of the Max Planck PhDnet, such as the individual workgroups and events like the interdisciplinary workshop on Art & Science and the PhDnet Meeting in Bremen.

Those of you who attended this meeting have already trained their abilities to spot bears. Now you have the unique opportunity to increase your skills in this complicated discipline: We have hidden several pictures of bears in this issue. If you can tell us how many bears there are, you have the chance to win an un-bear-lievable surprise package! Please send your count to phdnet.offspring@googlemail.com with the subject 'bear hunt'. (For more details see our website).

And now enjoy reading the Offspring!

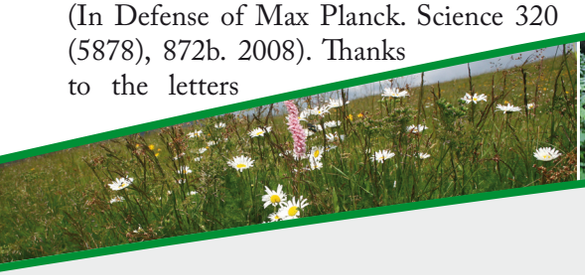
A look back ...

Melissa Beth Duhaime
ex-spokesperson of the PhDnet

In marine microbial ecology, viruses are thought to maintain bacterial diversity in the oceans. If a single species "blooms," it will dominate the community, consuming resources such that others (which may be fewer in numbers, but vital to ecosystem functioning) starve. Viruses are generally an order of magnitude more abundant than bacteria in these environments. So when a species gets out of control, it is rapidly killed by its specific virus, and brought back to sustainable levels. Diversity is conserved. The community prevails.

Reflections on the experiences of the Steering Group over the last year have had a similar theme. As the PhDnet, we are an essential component of the Max Planck Society. Though fewer in numbers than the entire body of scientific, technical; and administrative staff, as PhD students, we are well aware that the Max Planck community will not function without us. Luckily, we don't need to rely on viruses to decimate dominant species to preserve the functioning of the few (e.g. us!). But over the last year, we did need to act to preserve an accurate portrayal of the Max Planck PhD students in the scientific community (In Defense of Max Planck. Science 320 (5878), 872b. 2008). Thanks to the letters and messages of concern from MPS students, scientists and directors, we were able to express how the Max Planck graduates exceed an "average at best" mark.

On our network level, we have learned to take advantage of our own diversity of talent. Over the past year, we focused on unraveling outstanding concerns pertaining to insurance coverage (or lack thereof) of PhD students. The jungle of technical (German) law terms can be daunting, especially for foreigners (we had three in the Steering Group last year, we understood). However, at the meeting in Bremen last November, the PhDnet formed a new "Legal Workgroup" to channel the talents of our law students towards a solution. The new Steering Group has taken up this topic with admirable speed, and we can rest assured that our community, hand in hand with the MPS, will work hard to be better informed (and better insured). I wish the new Steering Committee and workgroups well as they venture into another year of PhDnet challenges and activities. And I foresee the PhDnet, as a whole, continuing to benefit from their valuable diversity. Stay involved and keep in touch.



... and forward

Leonard Burtscher
current spokesperson of the PhDnet

Scientists and scholars profit from diversity in cultures, languages and ideas. Most major thinkers have traveled abroad or found other ways to come in contact with new ideas:

Galileo had heard of the invention of the telescope by the Dutch lens maker Hans Lipperhey and was then first to look at the skies with this new instrument; Goethe wanted to rediscover the genius of Greek thinkers, went to Italy and was then a major contributor to the epoch of the German Classics; today, astronomers work together with medical scientists in the Astronomical Medicine Project at Harvard and use medical software for three dimensional visualization to better understand the structure of star-forming regions.

A technology known as adaptive optics, on the other hand, made its way from astronomy to medicine: in astronomy it is used to sharpen images of astronomical objects when taken by ground-based observatories through the earth's turbulent atmosphere; it turned out that it can also be used in medical optics to get sharper images of the retina.

In a nutshell, you profit from interdisciplinary discourse. Of course innovative ideas cannot be forced, but it is more likely that you will come up with something new if you are in contact with experts in a variety of fields, such as ornithology, climatology, linguistics, law or nuclear physics – like you find them in the Max Planck Society and in its PhD network, PhDnet. It is this richness of backgrounds, ideas and methods that make the PhDnet such a valuable platform for exchange. I want to emphasize that I see the PhDnet not just as an organization to combine strengths when it comes to organizational problems such as legal issues. We must not see it as a mere service organization, run by a few activists and of interest only to those who like to spend their time in bureaucratic struggles (I don't). The deeper value of the PhDnet rather lies in the opportunity for interdisciplinary exchange. Use this chance and get in contact with your colleagues from other institutes through our working groups, on the mailing list and especially at our seminars and interdisciplinary conferences!

Introduction PhDNet Groups

Roberto Kretschmer

Enthusiastic members of the PhDnet workgroups, recruited from all PhD students of the MPS, provide help and information to other students or arrange interesting events, but also benefit from the experiences and know-how they gather through this work. Currently, there are five permanent and four temporary workgroups in the PhDnet.

Permanent workgroups

The steering group consists of the spokesperson (who is the main representative of the PhDnet) and one representative from each section of the MPS (BioMed, Chemical-Technical-Physical and Humanities). Their goal is to maintain communication inside the community of MPS PhDstudents as well as between this community and the MPS authorities, to make the latter aware of students' problems, interests and ideas (read their article on pp. 32-33 to learn about their current and future tasks). The group is supported by the secretary group who is responsible for archiving and distributing important information to all the PhD representatives and to keep contact information up to date. The secretary group also answers general questions about the PhDnet. In addition, one can find announcements of the steering group (and also other groups) on the official PhDnet webpage and on the Wiki (links page 35), which is also an important tool to keep others informed and to coordinate group activities. Both sites are maintained by the web group. The spokesperson and other members of the steering group are elected at the PhDnet general meeting, taking place once a year. These meetings are organized by the meeting group who invites scientific speakers and MPS authorities, sets up a webpage and organizes social activities and catering. Their aim is to make the meeting a nice and memorable event for every participant. To get an impression about these meetings, have a look at the article on the 2008 meeting in Bremen (pp. 26-27). Another possibility for students to come together is attending one of the soft skill seminars planned and carried out by the seminar group (see also page 29).

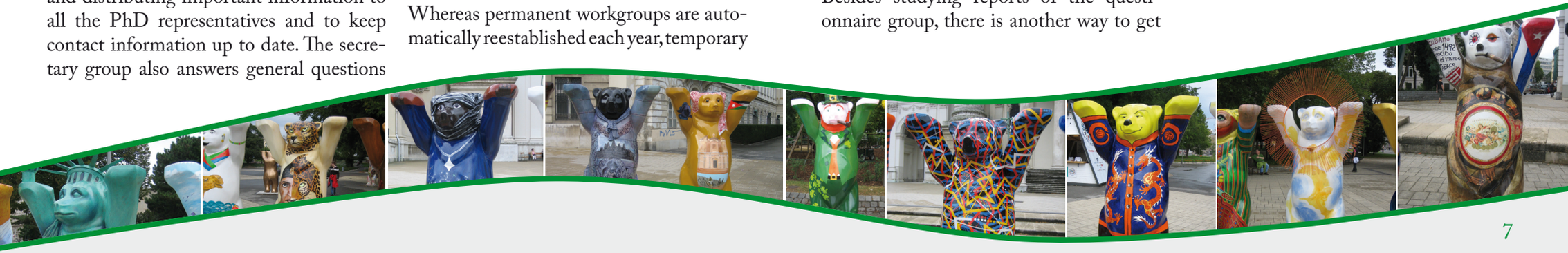
Temporary workgroups

Whereas permanent workgroups are automatically reestablished each year, temporary workgroups are founded for one year in the first instance. The decision whether to continue such a workgroup is made each year on the PhDnet general meeting.

One of these groups is the questionnaire group who organizes surveys to capture the situation of PhD students in the MPS. Two of these surveys were carried out in the past (2005/2006 and 2006/2007), another one is in preparation (see pp. 22-23). These surveys help to get an overview of MPS PhD students and to learn something about their problems and concerns. Some of these issues led to the formation of the legal group which was established during the general meeting 2008, primarily to cope with ongoing financial and insurance issues of PhD students, especially stipend holders. The group's goal is to inform students about facts regarding MPS regulations and German law – this may also help to facilitate decision making of the steering group.

Besides studying reports of the questionnaire group, there is another way to get informed about your fellow students in the MPS: visit one of the interdisciplinary meetings organized by the event group. The aim of these events is to get in touch with people from other scientific fields or to take part in interdisciplinary activities, a good way to broaden one's point of view. Those who can't make it to the events can read all about it in the Offspring magazine. In this issue you can read about the "Arts and Science" meeting in 2008 (page 8-12) and learn about the whereabouts of the next interdisciplinary meeting on "Science and Fiction" (page 13). Beside the PhDnet webpages, the Offspring represents the main medium for the PhDnet to communicate activities of the network as well as presenting interesting articles concerning MPS students. The magazine appears once a year and is created by the offspring group.

On page 35 of this magazine you find a list of all workgroups with links to their websites and contact information.



The Art of Science ... ... the Science of Art

read more on http://www.phdnet.mpg.de/wiki/index.php/Workshop_2008... and the following pages

The Art of Science and the Science of Art:

Julia Steinbach
Carlos G. Acevedo-Rocha

Two years ago, a group of motivated PhD students had the idea to organize an interdisciplinary meeting for MPG doctoral students. Due to the great success of the event, these meetings became an annual tradition.

In 2008, the meeting "The Art of Science and the Science of Art" was held at castle Schwaneck near Munich. As in previous years, every participant presented his/her work as a short talk or a poster. The topics covered a wide spectrum of research fields as well as methods and techniques. In contrast to traditional meetings, the order of the presentations was arranged in a different manner; they were comprised within a scale ranging from the 'yotto' (10^{24}) to the 'yocto' (10^{-24}) art. In this way the scientific topics spanned from the origin of the universe, global warming, analysis of ecosystems, as well as methods to analyze cells and molecules; the emotional effects of literature and music; the study of human and animal behavior, esthetics and methods of art preservation.

Practically, all talks and posters were presented not only scientifically, but also artistically and well explained in non-technical terms to a broad audience.

Due to big numbers of examples between art and science, two extended and three keynote talks were included. The relaxed atmosphere of the meeting encouraged many participants to ask questions and participate in lively discussions both from the methodological or artistic or the scientific point of view. Moreover, the participants were encouraged to participate in a contest where the most creative pictures, posters or talks were awarded. The best picture (see page 11) was granted to Kathrin Steck (MPI for Chemical Ecology), the best poster to Martin Muecke (MPI for Quantum Optics) and, finally, the best talk to Kelly Foyle from the MPI of Astronomy (see page 14).

Besides the scientific portfolio, participants could admire an audiovisual experience generated by using ingredients found in every kitchen in a gallery in Munich. In addition, discovering the nightlife in Munich was very exciting. On the following pages, some impressions from the participants help us to illustrate the success of this meeting. If you are curious for more, you are welcome to browse the website or to join this year's meeting yourself!

3rd PhD workshop

Kelly Foyle, MPI for Astronomy
I had a wonderful time at the conference! I thought it was extremely well-organized, and I met a lot of interesting people there. I think for me something that really struck me about art and science is that both strive to make representations of the world. Furthermore, scientific reasoning isn't like computation. It is a human activity. Scientific reasoning is subject to similar influences as art, that is, human influences. Whereas science tries to eliminate such influences, art often embraces them. Sometimes scientists are so keen to be ‚objective' that they don't recognize these underlying influences.

Merry Schuman, MPI for Chemical Ecology
I really valued the chance to practice presenting my research to people who are experts in a different area than plant science. I was excited to learn about opportunities to collaborate with artists in presenting my research, and ways to present science so that it is more attractive and easier to understand (while keeping it accurate). Overall, what I heard and discussed at the workshop generated a lot of ideas about how to better communicate specific topics in science with other people, both experts and non-experts.

Anna Lena Keller, MPI for Biological Cybernetics, leader of the organizing group
The interdisciplinary meeting about the ‚Art of Science and the Science of Art' exceeded all my expectations by far. The momentum it developed from the very first talk was just overwhelming! The discussions started always just by itself and topics ranging from interstellar dimensions down to the nanoparticle scale and from the complex behavior of a whole organism to pure chemical syntheses: the huge variability of natural sciences within the Max Planck Society was covered during this event. [...]

Haochen Yu, MPI of Biochemistry
[…] I've always hoped for a meeting which gathers like-minded people, who attempt to approach a synthesis between these two vital cultural activities in our societies. By the moment I arrived at the meeting, I was already astonished with the wide

Picture: Kathrin Steck „Desert ants: Smells like home"

spectrum of topics. The immediate challenge was to understand a piece of scientific work from a completely different field of studies. The speakers succeeded in using simple terms and diagrams to explain complicated experimental set-ups and methodologies, without leaving out necessary details. The talks and discussions afterwards were highly engaging. […] During the meeting, I also met a few very interesting individuals who are likewise interested in a transdisciplinary approach on the development of our knowledge. I see our meeting as the beginning of long-lasting collaboration and friendship.

Dr. Niki Baccile, MPI of Colloids and Interfaces [invited speaker]
It was a pleasure for me to have a chance to speak at the PhDnet meeting 'The Art of Science'. The goal of my talk was to illustrate to the participants the connection between nanoscience and contemporary art. The organizing committee revealed to be composed by extremely nice and competent people. It was a pleasure to exchange ideas with them and they were very open on a number of different topics. The choice of the speakers was outstanding and fit perfectly well with the overall subject of the meeting. […] The choice of Caste Schwaneck was simply excellent. It was a great balance between budget concerns, beauty of the location and comfort. In addition, the organization of the three days was quite well done and it seemed to be exactly like in an international venue. [...] Speaking of student's presentations, I was impressed by the good quality and vulgarization level of most of them. It is never easy to be part of someone else's research, especially if the field differs completely from yours. I had no problem of understanding domains ranging from astronomy to neurological science and plant physiology. Good job!

Prof. Peter Gruss, President of the Max Planck Society
[…] An interdisciplinary meeting offers an excellent opportunity for broadening horizons, particularly when it is staged under a heading as inspirational as "The Art of Science and the Science of Art". With this subject, the PhDnet has moved an important aspect of research work into the spotlight. Both science and art are creative processes. Both originate from exceptional individuals whose vision and ideas shape our view of the world. Both bring forth something which is fundamentally new and different. I would be pleased if the participants of the meeting remain aware of how closely art and science are interrelated.

Announcement

4th interdisciplinary PhDnet Workshop

Science and fiction:
Crossing the boundaries

"Any sufficiently advanced technology is indistinguishable from magic. " – A. Clarke

Science and fiction - two meanings in interplay. As the first human stood upright and made his first tools to hunt, he also did paint on stone. He imagined and created. Throughout the history of mankind the boundaries between science and fiction have been shifting. Slower at first, more rapidly later, ideas formed in the human imagination crossed triumphantly over to science, only to be fed back into the imagination anew!

"If both the past and the external world exist only in the mind, and if the mind itself is controllable – what then? " – G. Orwell

The imagination of people however has often, like a distorting mirror, obscured science. Often enough have scientific facts being weaved into fiction, making it seem real. More dangerously, science has sometimes based itself on fictive footings, inventing false progress.

"The only way of discovering the limits of the possible is to venture a little way past them into the impossible " – A. Clarke

For the 4th Interdisciplinary PhDnet Meeting, taking place between the **4th-6th September 2009 at the MPI for Human Cognitive and Brain Science in Leipzig**, we invite all MPS doctoral students to attend this workshop, and to present their own research (poster or 10'/20' talk slots available). We **strongly encourage** all participants to relate their research to the above ideas and reflect on how their own work might have been influenced by or in turn may influence fiction and human imagination.

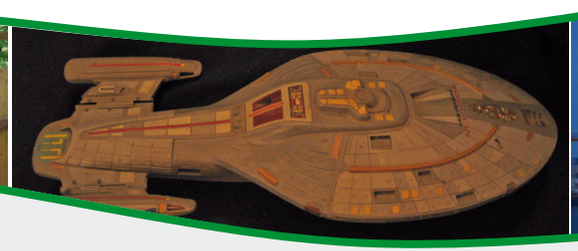
Students from **all** branches of science (humanities, biomedical, and CPT) are warmly invited to participate!

For further information check
http://www.phdnet.mpg.de/fiction09.

With best regards,

The "Workshop" event group




Our Diverse Universe

Kelly Foyle

The word 'diversity' usually evokes images of a multicultural society or of the variety of animals and plants that populate our planet. We rarely consider the diversity present in our Universe. Looking up at the night we are met with a view of somewhat similar looking stars dotting an otherwise black and empty sky. We tend to think that the Universe is a cold and dark place with tremendous distances separating objects. This is true certainly on the scales that we usually deal with as human beings.

On larger scales, however, the Universe is filled with many galaxies, over 10^{11}, each one a gravitationally bound system of stars, gas, dust and dark matter. Galaxies, much like people, are often found in large groups or clusters. However, the galaxies in these groups are not all alike. Just like people, they come in all sorts of different shapes, sizes and colours.

Galaxies: diverse group

To say that galaxies are diverse is a certainly an understatement. Understanding their differences and their similarities represents a great challenge to many astrophysicists.

In order to understand the observed properties of galaxies, we group them based on their shape or morphology. The Hubble Tuning Fork Diagram (see Fig. 1) is one of the most popular morphological classification systems. Galaxies are classified into two main groups: spirals and ellipticals. Spiral galaxies (see Fig. 3) are composed of a thin flat disk of rotating stars. As their name implies they have large spiral arms and they are grouped based on how tightly wound the arms are and whether or not they exhibit a bar (see Fig. 4). Ellipticals, on the other hand, are round with no obvious features and the stars orbit in a more random fashion (see Fig. 2). Spiral galaxies are blue, while ellipticals are redder. This is due to the fact that spiral galaxies are still making new stars. Young, hot stars are blue, while old, cool stars are red. Indeed the morphological features of galaxies are coupled to many of their physical processes.

Why do galaxies look the way they do?

Because the morphology is linked to so many properties, understanding why galaxies look the way they do is central. Consider a room full of different people - some will be old, some will be babies, some will have dark hair, others might have no hair at all and some might be missing an arm or leg. There would be a wide variety of observable features in such a group. If we tried to understand what controls these features – three main contributing facts might come to mind: their DNA, possible injuries and life events and the gradual process of ageing. These three things control why you look the way you do and indeed a similar set of processes control why galaxies look the way they do.

In the beginning …

While galaxies don't have DNA, the initial conditions in which they form are central to many of their features. Galaxies form when small density perturbations in dark matter collapse to form dark matter haloes. In the halo, gas collapses and eventually forms stars. The size and the amount of dark matter which forms the halo is very important for the overall size of the galaxy.

It's a tough universe

Given their size, galaxies are actually quite close together. It is quite likely that a galaxy will have one or many collisions with other galaxies. These mergers and collisions reshape the galaxy. Sometimes close-by interactions will produce long tidal tails

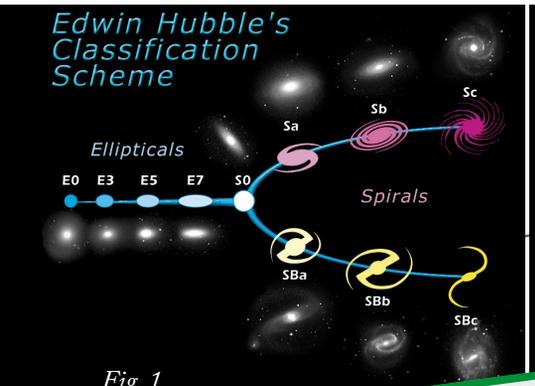


Fig. 1

Fig. 2

Fig. 3


Fig. 4

Picture Credit: NASA, ESA, and The Hubble Heritage Team (STScI/AURA)

(see Fig. 5) Other times a galaxy might become completely distorted.

Galaxies changing over a life time

Finally just as a person ages and changes over time so do galaxies. Even a galaxy in total isolation will gradually change. Features like bars and spiral arms have a high mass density and they exert forces, which cause matter to move in the galaxy and reshape it. As the gas reservoir in the galaxy is gradually depleted, stars cease to form and those remaining, cool and turn redder.

While astrophysicists have begun to piece together some of what shapes galaxies, there are many mysteries yet to be solved. The diversity among galaxies and the similarities that they share continue to amaze us. I encourage you to visit your local observatory and get the chance to view some of these wild wonders in the Universe for yourself.

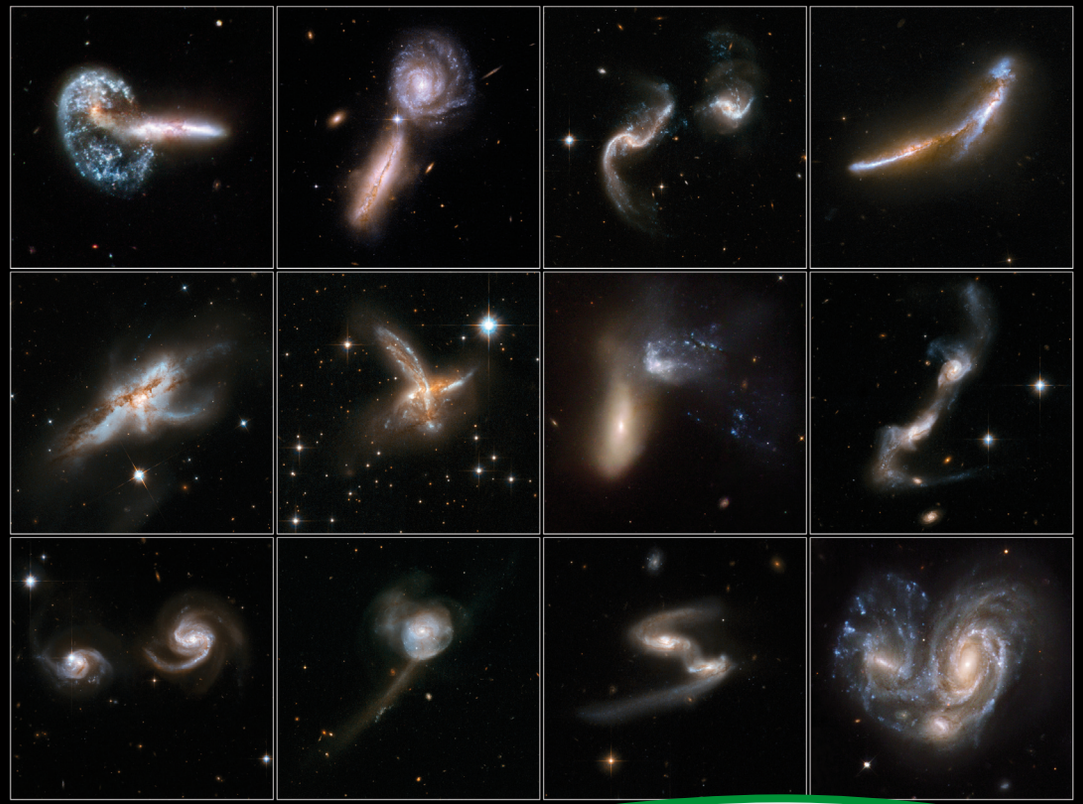


Fig. 5

Picture Credit: NASA, ESA, and The Hubble Heritage Team (STScI/AURA)

A spotlight on biodiversity research

Björn Reu
Miguel D. Mahecha

‚Biodiversity conservation' is considered to have outstanding societal relevance. The fight against an increasing decline of biodiversity plays an important role in regional to international decision making. In tandem with these efforts, a wide range of scientific methods and activities have been developed. This essay aims to outline some fundamentals of biodiversity research, its motivations, and societal justifications. Even within our "Max Planck environment" biodiversity research is more diverse than one may expect at first glance.

So, then, what is biodiversity?

In its most general notation, "biodiversity" comprises the variability among living organisms and associated ecological complexes. Clearly biodiversity is a matter of scale, organization, and interaction of biotic systems ranging from cellular to ecosystem scales. "Biodiversity" is a general terminus comparable to the concept of "variability" in statistics, or "entropy" in information science. The most widely used meaning attributed to "biodiversity" refers to the diversity of animals and plant species. While this concept is predominantly a public perception, it bears some scientific limitations - gradual differences between species imply an unclear species concept and undermine the "naïve" understanding of biodiversity.

Biodiversity research

Today's biodiversity research follows the needs of humankind. A perceived global "biodiversity crisis" has increased scientific and public awareness. The primary focus of the matter is the interplay between strong economic and ecological arguments : Ecosystem goods and services have become the predominant justification for biodiversity research. In addition to the resources, "services" such as soil fertility or pest control are essential factors to support human life. Let's have a closer look:

Observing Biodiversity

Observing biodiversity is more than stamp collecting. The great hope in the middle of the last century was to describe the world's species inventory based on a coherent taxonomy.

This led to the construction of a wide range of national scale faunistic and floristic databases. However, these data rely exclusively on expert knowledge. One consequence is that such spatial data collections often suffer from slight taxonomic confusions but also from systematic sampling artifacts: Even under highly standardized classification conventions, the geographically bounded expert knowledge will introduce some degree of bias. On global scales, conventional classifications fail.

At the MPI for Biogeochemistry, different strategies are being explored. In light of our need to understand ecosystem functioning in relation to environmental factors, "functional" monitoring perspectives are undergoing development. The overall task is to create new refined global databases of "plant functional types" or "plant traits". These databases are essentially collections of plant properties. They allow the investigation of biodiversity on a meta level and open the way to integrate different datasets. This philosophy has been identified as a technically realistic way "Towards a Global Monitoring Scheme".

Environmental controls on / by biodiversity

One fundamental observation is that many more species occur in the tropics compared to higher latitudes. Disentangling the different underlying mechanisms contributing to geographic patterns in species richness could shed light on the origin of diversity. This would also have direct implications for conservation planning. Today scientists are equipped with powerful simulation tools that can help to develop mechanistic approaches to these questions. For example, it is possible to model the global geographic variation in the diversity of plant growth based on a few principles. The key is our increasing understanding of how the physical environment constrains plant ecophysiology. Even if only the effects of climate are considered, simulation results on a global scale are in good agreement with observed patterns of species richness (Fig. 1). However, we need to account for more than just climatic constraints. In particular, it was hypothesized that biodiversity affects internal ecosystem processes and ecosystem stability. "The Jena Experiment" is a large experimental area of grasslands species. This long-term experiment aims to clarify the role of species diversity for nutrient cycling and trophic interactions in an exemplary grassland community. This will help to determine whether the role of certain plants in an ecosystem can be partially redundant.

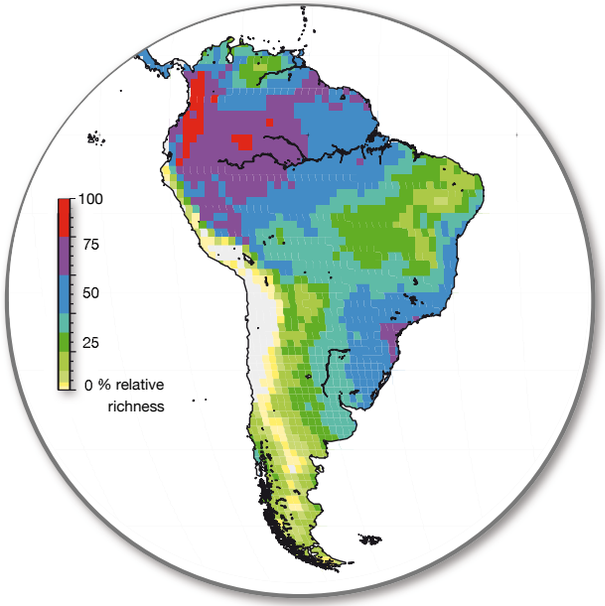


Fig.1: Theoretical pattern of species richness in dependence of climatic conditions only (model structure after Wallace, (1878) Tropical Nature and Other Essays.)

The question of species diversity turns into a question of functional diversity.

The role of biodiversity in the earth system

In view of a changing climate, biodiversity research gains additional importance. Plants mediate fluxes of energy and matter (H_2O and CO_2) and thus shape features of ecosystem functioning in the "biosphere-atmosphere" feedback system. Modified atmospheric greenhouse gas concentrations and climate conditions in turn, shape biodiversity structure and thus the development of ecosystems. It remains a highly speculative question as to how this feedback system will develop in the near future. The major task is to come up with a range of possible behaviors of the earth system in the near future and to understand the breadth and severity of possible risks.

Concluding remarks

There are two main motivations that drive the overarching research topics on biodiversity and justify its preservation. First, most aspects of biodiversity are tied to our current needs and future progress as a globalized yet sustainable society. Second, it remains an unresolved secret what an increasing loss of biodiversity may cause for the climate system of our planet or for other aspects not yet conceived. Not considering these aspects is an irresponsibility we cannot afford.

We thank Sebastian Schmidtlein and Lee Miller for useful comments.




Why linguistic diversity matters

Corinna Handschuh

At present approximately 7200 languages are spoken on this planet (Fig. 1). While some of them are the mother tongue of millions of people like Mandarin Chinese, English or Spanish, others have just a handful of speakers left. In fact most of the world's languages have a small, rapidly decreasing numbers of speakers and will inevitably die out within the next century. Many people do not understand why this fact should be regrettable. They believe that speaking different languages is a major source of misunderstandings between people, and that we would be better off if the entire world spoke a single language. However, this is not true - you will have experienced that speaking „the same" language does not prevent misunderstandings from happening. And moreover it does not reflect the loss which the death of a language means both to its former speakers and to mankind in general.

Let us first consider which impact the death of a language has for the individual community. If a language goes extinct, this is a gradual process in most cases. Instances where a natural catastrophe or genocide wipes out every single speaker of a language at once have happened, but other factors are a much more common source for language loss. A more usual scenario involves a community of speaker shifting from their old native tongue to some other (usually bigger or more prestigious) language.

For a complete shift from one language to another three generations are enough. The first generation will be monolingual in the traditional language of the people. The next generation acquires this language and another language, perhaps due to some change in the social setting – e.g. the introduction of a formal schooling system. This generation might decide to pass on only the new language to their children – i.e. the third generation. This decision might be enforced by economic reasoning, since the new language will improve the carrier perspective of the children, facilitating to take up a well paid job outside of their own community. Yet another consequence is that the children are unable to properly communicate with their own grandparents. Though complete language shift of a community is possible in that short a period of time, a less rapid scenario with a longer intermediate stage of bilingualism occurs more often. Another consequence of the replacement of the ancestral language is the loss of the link to ones culture. This might result in a struggle to find one's identity later in life. Nowadays quite a number of Native American tribes in the USA or Canada try to revive their old languages which have been given up by earlier generations. Thus they try to regain their cultural identity and make their children better understand their peoples' history.

But it is not only the local suffering from the consequences of language loss; mankind in general loses something if a language goes extinct. Language is one of the features – if not THE feature – that distinguishes humans from other living beings. All other communication systems – however elaborate they may be – are tied to the present situation and/or serve only a specialized purpose (e.g. the waggle dance of the honey bee). So language – whether spoken, signed or through any other medium – is pretty much what it means to be human.

Each language represents a unique way of looking at the world, which is lost forever once the language is gone. Moreover each language has a long history, it has evolved over thousand of years and gone through innumerable changes. All of this is part of our cultural inheritance as the human race, just like Stonehenge, the Mona Lisa or the Great Wall of China, where very few people would argue that they are not worth being preserved for future generations.

Last but not least each language contributes to our scholarly understanding of how human language works. Especially the data from small, little known languages has often demonstrated structures which no linguist thought of or even thought possible before.

Further reading: Crystal, David. 2000. Language Death. Cambridge: CUP.

credits: Thomas Hegenbarth (left picture and left picture on back cover)

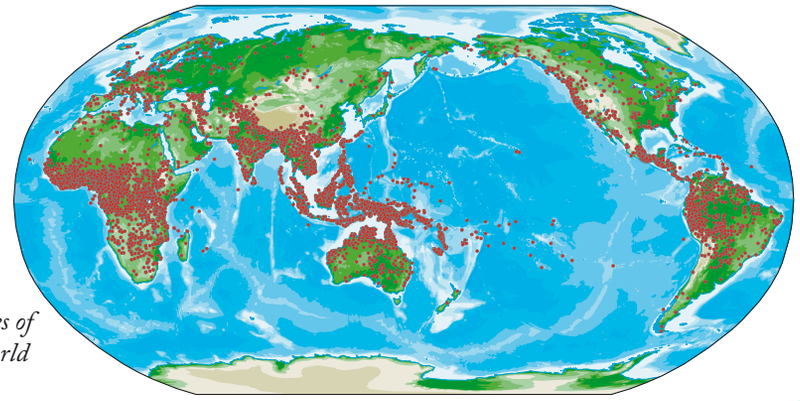


Fig. 1: Languages of the world

Are we all the same? - News

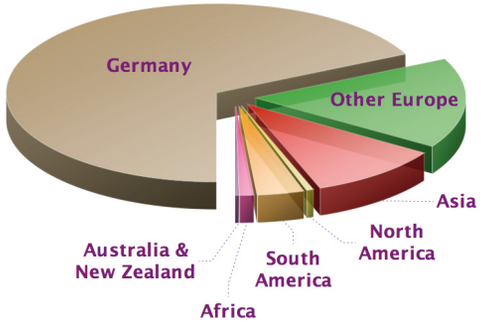
Sandra Krapf from the Questionnaire Group

Within the Max-Planck Society, currently more than 3500 students are working on their PhD projects. All of us follow the same principles of research and each one tries to contribute to the strand of research which he/she works in. All in all we are quite similar – are we not?

In order to answer this question, one can take a look at the latest online survey by the PhDnet questionnaire group. Carried out between November 2006 and March 2007, it was answered by 600 PhD students from 65 different MPIs. This survey thought to gain some insights into both the working and personal situation of students and the descriptive statistics of the data allow us to assess how different we really are.

First of all, the answers to the questionnaire comprise that the students differ concerning their national origin; the respondents represent 17 nations. The lion's share (more than 60%) is German, approximately 15% are non-German Europeans and about 20% are non-European (see diagram).

In accordance with the different research areas investigated in the MPS, the students will receive their doctoral degree in different fields: 42.8% are affiliated with an institute in the Biomedical Section, 38.6% belong to the Chemical Physical Technical Section and the smallest share of respondents (18.6%) does a PhD in the area of Humanities.



Origin of PhD Students in the MPS

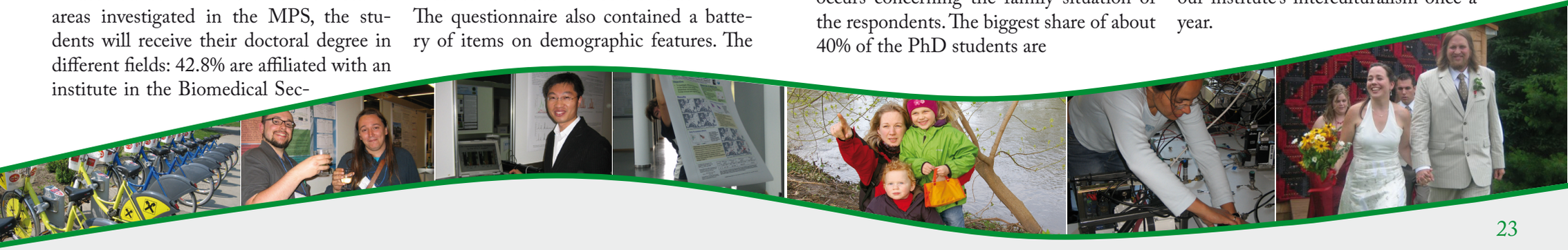
Another discrepancy between the PhD students arises concerning their working hours. The average amount of weekly working hours is 46 to 50 hours, ranging between a minimum amount of less than 20 hours and a maximum of more than 70 hours. About 40% of the respondents work 41 to 50 hours a week, about one third works more than that, the remaining share of students invests 40 hours or less.

The questionnaire also contained a battery of items on demographic features. The most obvious variable in this context, sex of the respondents, is unevenly distributed among the sections: Altogether, about 46% of the students are female, 55% are male. Comparing the distributions in each section, in the field of biomedicine, about half of the students are men, half are women. In the CPT-Section, however, approximately one third of the responding students are female, two thirds are male, whereas in the Humanities this proportion is reversed.

The next demographic variable of interest is age. (Not only because I am working in the MPI of Demographic Research I believe that age is an important line of diversity – especially when observing a rapidly aging society as we do in Germany). The mean age of PhD students is 28.06 years (with a mean age of 27.98 years women are minimally younger than men on average). The age range in the survey is rather broad with the youngest person aged 22 years and the eldest aged 38. However, a glance at the frequencies shows a dense distribution around the mean: 50% of all respondents are between 27 and 30 years.

Furthermore, an interesting discrepancy occurs concerning the family situation of the respondents. The biggest share of about 40% of the PhD students are single, one third lives together with a partner, about one quarter has a partner but lives in different apartments and less than 1% are separated, divorced or widowed. More than 90% of students are not yet parents, about 6% already have children and 1.4% is pregnant or has a pregnant partner.

These numbers tell us that the average PhD student at the MPS is a person aged between 27 and 30 years, European, without children but with a partner and works a lot. We are – more or less – all the same. Probably that is related to the fact that we often use statistics to make statements about a population as general as possible. Leaving the abstract level of a survey and taking my personal experience, I am used to a lot of diversity in my everyday working environment. I have – sometimes even fruitful – discussions with sociologists, psychologists, demographers, political scientists, economists, statisticians, mathematicians, information engineers and also biologists, ecologists etc. And it is very touching when we sing "Silent Night" at our Christmas party; this takes us 30 minutes because we sing it in at least 10 languages and is our way of celebrating our institute's interculturalism once a year.



Cultural diversity

As you have just read, Max Planck PhD students come from many different nations and therefore have different cultural backgrounds. This cultural diversity in our daily life can help us to learn more about other cultures, we can enjoy touching scenes as the Christmas singing in Sandra's article – but sometimes cultural differences can also cause embarrassing misunderstandings or funny situations. Experiencing cultural differences is not limited to foreigners; even within Germany some things vary e.g. between East and West Germany, between Northern Germany and Bavaria, between a small village and a big city…

We have asked you, our readers, about your best experiences with cultural diversity – thanks for all the responses!

HERE IS OUR WINNING STORY:

Chronological diversity - or: quarter nine Central Thuringian Time

When you move from Western Germany to Eastern Germany you are prepared for many things: different dialect, new products and even different names for well-known products. But a different time-measurement won't cross your mind. And so the trouble begins: You ask for example when your lecture starts the next morning and the answer you get is „quarter nine". Depending on how your mind works, it adds either a „to" or a „past", so it makes sense to you. Depending on this decision you arrive the next morning at 8.45 or at 9.15 - and you notice you are 30min respectively 60min late. Because what your clever mind couldn't accomplish is that „quarter nine" means „a quarter of the hour from eight to nine = 8.15".

Marc Geibel, MPI Biogeochemistry

SOME MORE STORIES:

Hello from Strangers

In the first few months after we came to Germany, I was very much confused by "Hello" from strangers. Strangers say "Hallo!" or "Guten tag!" to me in elevators, on roads in forest, in buildings, in clinics, etc. In the beginning I thought they knew me or wanted to talk to me, since in China you only greet acquaintances or strangers only if you want to ask them questions. I used to stop and expected for conversations but usually it did not happen. It turned out such kind of greetings are just nice courtesies.

Hongbo Zhu, MPI for Informatics

The German way of queuing

An endless queue in a Spanish airport full of Germans going on holidays. A flight attendant rushes up and down, gesticulating, screaming that we can go in. They are in a hurry, the flight was delayed, but the problem is over, there's no need to wait.
She asks us please to move forward. Please! -she cries out- break the queue!!! All Germans, silent, stare at each other. She keeps begging, helpless. I, after one year in Leipzig, don't dare taking a step to one side. Instead, I look away… hoping I look enough like a German to hide my betrayal.

Anna Albiach Serrano,MPI for Evolutionary Anthropology

Shaking heads to show agreement

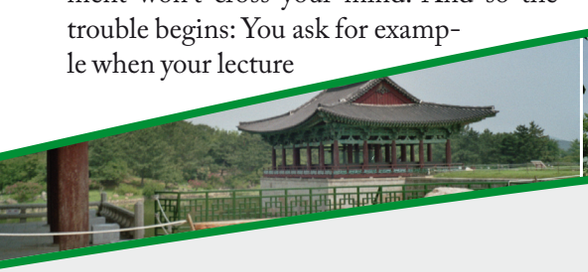
I had some fellow Indian classmates in the first year. They used to habitually shake their heads to show their agreement or understanding when they are listening to me during conversations. Although shaking heads usually means disagreement, I got accustomed to it soon. Once in a meeting, they kept doing so when our coordinator was addressing some regulations. The coordinator was very confused. So she had to confirm by asking them "Do you understand?" All of a sudden the Indian students seemed to realize the problem and tried to stopping shaking and start nodding their heads. The scene at the moment was chaotic since it seemed they try to move their heads in all directions irregularly.

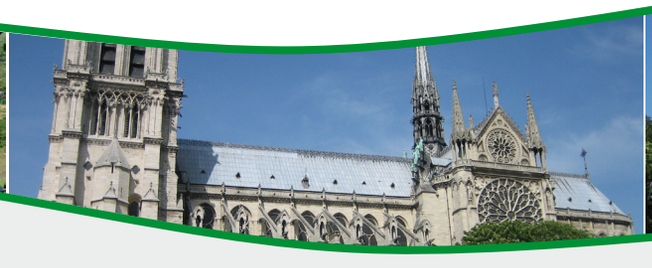
Hongbo Zhu, MPI for Informatics

The world's friendliest terrorist

Nepal, Annapurna Mountains, somewhere between Ghore-Pani and Tikhedunga, in summer 2004. Another rainy day during the trek. Forests, leeches, stones, rivers, mules and ... maoist-terrorists. This time only one. Well equipped with a WW carbine every museum would appreciate. He stops us and demands (whilst smiling calmly): „My friends, I am very, very sorry, but I have to take 10$ from you." We gave him the money, he shook our hands, gave us a I-already-payed-10$-to-your-maoist-buddy-certificate and some sweets, waved and wished a nice day. One could say we were victims of a armed robbery, but it felt more like having visited grandma to cake and coffee.

Tobias Fleischmann, MPI for Molecular Plant Physiology, Golm






Did anyone see the moon-walking bear?" - 7th PhDnet meeting in Bremen

Mareike Schnaars

In November 2008, the 7th PhDnet meeting took place in one of the most beautiful Hanse towns of Germany. It was hosted by the MPI for marine microbiology in Bremen. For three days around 60 PhD representatives from over 30 MPIs all over Germany discussed problems and future plans concerning the position of doctoral students in the Max Planck Society.

At first, former spokesperson Melissa Duhaime and the PhDnet working group leaders gave an overview on their work during the last year. Following the discussion of the general assembly, the dialog was resumed during section discussions among the students of the Biomedical, CPT and Humanities branches. During these informative sessions, the section representatives collected issues related to problems of PhD students at their local MPIs.

In all three groups, the main concerns were legal issues, due to the diversity of contracts and stipends given to the doctoral students. Especially for stipend holders, which are not covered by their institutes' occupational liability or accident insurances, the risks are substantial.

This was also one of the major points brought to attention during the panel discussion with Prof. Schön, vice president of the humanities section, and Ilka Schiessler from the administrative headquarters. Both of them pointed out that they were aware of these problems and already working on them. Ilka Schiessler explained that she had already contacted insurance companies, which could cover these risks in a "group tariff" for students. Nevertheless, these optional insurances would still be on the student's expenses.

Since these problems were not solved yet, the general assembly decided to establish a new working group dealing with legal issues of PhD students in the MPS from now on.

Besides the political part, the other focus of this meeting was set on the scientific exchange. In three sessions speakers from different research areas introduced their work. Pascal Fries from the University of Nijmegen (Netherlands) demonstrated how far the personal focus on subjects changes the actual perception. In his introduction he showed impressively with several short movies "How your brain ignores (most of) the world" that even a moon-walking bear remains unnoticed – at first – while the viewer is distracted by other tasks.

His talk was followed by Jörg Siekmans', who introduced his work in the German research centre for artificial intelligence (AI). In the second session, Victor Smetacek from the Alfred-Wegener-Institute explained the effects of sea level rise. In the end, a public talk about renewable resources by Kathrin Ammermann from the Bundesamt für Naturschutz in Leipzig completed the scientific part of the meeting.

Whereas most of the days were filled with serious work, the nights – which are fortunately long in winter - remained for socializing activities. Since the organizers put great effort in choosing nice locations, we discovered the vivid nightlife of Bremen; also the festive atmosphere and the "Weihnachtsmarkt" in pre-Christmas Bremen were very enjoyable. One of the highlights of the meeting was the "pirate dinner" which took place aboard of the old sailing ship "Admiral Nelson". While drinks where served by the pirate crew, one could enjoy the formidable pancake buffet and the view to the "Schlachte", one of the nicest promenades of the Weser. And it turned out as expected: the later the evening, the nicer the atmosphere! In the end all of us nearly couldn't resist to hoist the anchor and to sail away for our own pirate adventures…

And of course the meeting ended as it should have: We all had the opportunity to participate at a guided tour in the Beck's brewery and - needless to say - to try a beer or two.

Finally, it remains to give our tribute to the organizers of the 7th PhD meeting, which was a great success. We enjoyed it very much. Thanks to you all and see you in Jena for next year's meeting !




Invitation

The next PhDnet General Meeting will take place in Jena at the MPIs for Biogeochemistry, Chemical Ecology and Economics in autumn 2009. All interested students and especially all PhD representatives of the Max Planck Institutes are invited to join the meeting! We would be glad to meet you in Jena, a lively city in the middle of Germany, which is home to more than 25.000 students and junior scientists. With three Max Planck institutes, one Fraunhofer institute, two Leibniz Institutes, two universities, and many other research institutes Jena is truly a City of Science (Jena was winner of 2008 "City of Science" competition).

The meeting agenda focuses on the discussion with the MPS management on issues concerning all MPS students. The event is a great chance to get in touch with PhD students from (almost) all MPIs. The meeting is completed by a selected scientific talk from each section and of course a comprehensive social program. Beside the meeting agenda you will have the opportunity to visit many historical sites such as the 14th century town hall, Gothic St. Michael's Church containing a bronze slab of Martin Luther's tomb, an old castle and numerous towers from the medieval fortifications, the house of Friedrich Schiller and his wedding church, or the second oldest botanical garden in Germany, founded in 1580. On top of that, there are eight museums in the city. One of the city's landmarks is the JenTower, a research facility built in GDR times. Today the JenTower offers a restaurant and viewing platform at the 27th floor. In a 20-minute-train-trip you can reach Weimar, once the capital of Germany, with many historical and cultural sites.

Being a city with many young people from all over Germany and other countries Jena offers several nice bars, pubs and clubs to meet friends, dance and have a good time.

For detailed and up-to-date information on the Jena-Meeting check our website at

http://www.phdnet.mpg.de/wiki/index.php/Meeting_group

Your PhDnet Meeting Workgroup

Soft-skill Seminar: Job Hunting

Julia Grieser

Julia Grieser did her PhD at the MPI for Human Cognitive and Brain Sciences in Leipzig. In January 2008 she attended a PhDnet Soft-Skill-Seminar on Job Hunting in Leipzig.

Although the title of the "job-hunting" seminar suggested it would be only about finding a job, the broader focus was on how to apply for jobs, how to prepare for an interview and how to behave in an interview situation.
While much of the seminar applied to skills you might need if seeking a job in the private sector (such as what to expect from an assessment center), skills and strategies applicable to jobs in an academic setting (i.e. post-doc positions) were also included.
In order to prepare for the seminar, participants were asked to find a job advertisement that could potentially be of interest to them. We were supposed to come to the seminar with a cover letter and CV prepared for the advertised job. In order to simulate a true interview, we also were asked to wear business attire.
In the seminar we suggested improvements for our cover letters and CVs, and also discussed common mistakes to avoid.
We prepared answers for potential interview questions, and discussed those answers in detail, again focusing on what to avoid and what to emphasize.
Finally we had a mini-assessment center (which included a prioritizing task and some cognitive skills tests) and participated in a mock interview with one of the other participants, taking turns as interviewer and interviewee. Although cross-cultural issues also were addressed (e.g. differences between German and American CV formats), In my opinion, this could have been discussed in more detail.
Overall, I felt that there was a strong focus in the seminar on providing practical experience. I found the practicality of the mock interview especially helpful. An additional benefit was that only four people participated in the seminar, which gave us the opportunity to ask more questions and to spend more time considering our individual mock applications.
You also want to attend a PhDnet seminar or organize one for your institute?
Check the website of seminar workgroup (page 35)




Timeout during your PhD

Verena Conrad

…a step towards self-responsibility and more freedom during academic learning

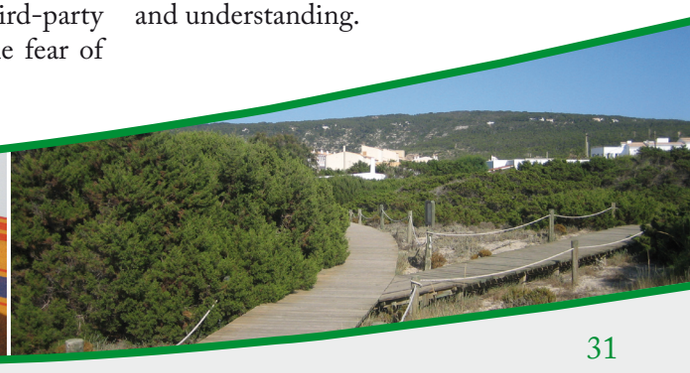
Taking a temporary timeout after leaving school, during a university degree or as a sabbatical after years on the same job/ on the rat race is getting more and more popular among students and employees. Career breaks are no longer regarded as empty patches on the CV - timeouts offer the possibility of taking a step back to reconsider the motives for the self-chosen occupation and to gain a new perspective on achievements and work life. However interrupting a PhD is very uncommon despite the fact that it is one of the most challenging endeavours one can face: intellectually, emotionally, financially etc. The drop-out rate is incredibly high, more than 50% of PhD students in Germany fail to complete their research, independent of branch of science or mode of employment. Long working days in the laboratory, high frustration, delayed gratification or efforts that have come to nothing - the attraction of escaping into industry is too great for many PhD students that struggle with missing resources and support. PhD students at MPI's or IMPRS's are often spared from financial problems but face other problems such as publication- and time pressures, demanding examination regulations, career concerns (no teaching obligations) and competitive pressure. Today graduate students must perform and carry out more research projects and write more thought-out papers in much shorter time - quantitative output is the cardinal quality criteria. Already in the student years, there is little or no time to conduct research that leads one away from the conventional career path.

However the PhD is much more than the accumulation of knowledge and writing an extended diploma thesis – it is the first step towards independent academic work that forces you to organize yourself and acquire a vast number of skills. PhD is a process of constant searching and readjustment, an opportunity to release your potentials and to get to know your boundaries - this is tough. Sometimes a short vacation is not enough to find a way out of the impasse. Often external factors such as disease, pregnancy or family care responsibilities make it too difficult to continue top-level research and a break becomes inevitable. But sometimes people actively choose to spend time away from working on their PhD projects to temporarily focus on something else, i.e. to work behind a bar for a year or to demonstrate specialized skills in a high-priority project before continuing PhD work. I could not resist the temptation of working for the Nature Publishing Group in London, as part of their Graduate Internship Scheme. It changed my perspective on my own research and science in general and I found new motivation to pursue what I had started. Timeout can be a valuable experience, for instance, by spending some time in industry or by doing a different project at an affiliated research institution one can acquire new skills and build new networks - independently of whether one aims at an academic position or not. The decision and its implementation are not easy, often it is impossible to spend time away from work – science is highly competitive and different laboratories simultaneously work on the same research questions. Third-party funds have limited terms and the fear of vocational disadvantages prevents many PhD students from talking to colleagues and supervisors.

What does it mean to take a temporary break from your PhD project?

A time-out or change of scene can be an opportunity to overcome crisis and therefore offers a valuable alternative to quitting the PhD altogether. It can be an option to find a new approach to handle mental workload, reconsider the initial motives for doing a PhD and release new energy. Everyone is different and individual solutions are not universally applicable. However, making a decision could be a way to greater self-responsibility, a way to autonomy in research, a way to prevent the dropout. Timeout can be used as creative recovery process to find an Archimedean point at which one can perceive abilities, ideas, visions from the necessary distance to bundle and use them in the most efficient way, to get off the hamsterwheel in which one peters out without sense, goals, and understanding.



New old issues waiting for the new steering committee

Leonard Burtscher, Susannah Burrows,
Axinja Hachfeld, Sandra Schöttner

The 7th PhDnet General Meeting in Bremen has been a very inspiring one for us and we wish to thank the General Meeting Workgroup for the efforts they put into that.

Interspersed in between organisational sessions were a number of excellent scientific talks covering a variety of topics. Pascal Fries from the F. C. Donders Centre for Cognitive Neuroimaging of the Radbound University Nijmegen (The Netherlands) for example explained the mechanisms that the human brain uses to focus attention. He showed that these mechanisms can be tricked in certain circumstances so that people don't even realize when their dialogue partner is substituted by another person!

Jörg Siekman from the German research center for artificial intelligence (AI) reported that billions of dollars were spent on basic research in AI when it was thought to be useful for military applications. Now, people are instead working on applied research such as programming robots. By 2050, he bets, robots will beat humans in soccer. Victor Smetacek from the Alfred-Wegener-Institute presented the hypsographic profile of the earth. In such a graph the distribution of elevations on a surface can be visualised. For the earth it shows that a rise of only a few meters of sea level would affect a large fraction of the earth's surface. The current rate of sea level rise is 3.5 mm per year and has doubled since 1993. All in all, we profited from a variety of talks and topics and in coffee break discussions we were reminded that in the Max Planck Society (MPS), Ph.D. students find an inspiring diversity of people, cultures, languages and ideas.

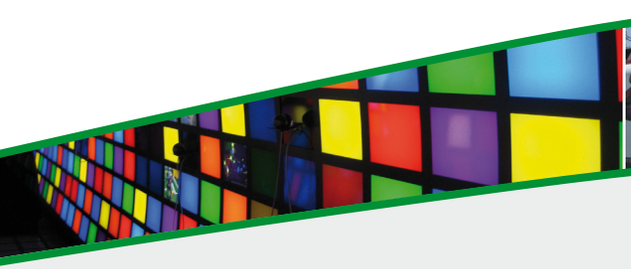
In the organisational discussions we learned that there is also a confusing diversity of contracts, stipends and insurance plans connected to them. We learned that some stipend holding Ph.D. students are apparently not insured against basic risks such as occupational liability or some occupational accidents, for example.

With the problematic situation of stipend holders an old issue is waiting for the new steering committee. These legal issues have been discussed in the PhDnet for several years. With the help of the newly founded and very active PhDnet working group on Legal Issues we were able to bring this to the attention of the MPS president at the end of March. The president, Prof. Gruss, also expressed his concern with the situation and the MPS General Administration has now several people working on this topic. We expect them to present solutions to some of these issues before the next General Meeting.

Apart from these necessary, but maybe unpleasant tasks, we also intend to increase the PhDnet's visibility inside the MPS, e.g. by promoting the use of our wiki and helping the General Administration with their Alumni activities, and outside the MPS e.g. by furthering our contacts to other Ph.D. networks such as the Helmholtz Juniors.

We are looking forward to hearing from you and / or meeting you at the next PhDnet's Interdisciplinary Workshop (see p. 13)

http://www.phdnet.mpg.de/wiki/index.php/Steering_Group



Contacts

Abstract MadLibs!!

This paper presents a _____ method for _____
(synonym for *new*) (sciencey verb)
the _____. Using _____, the
(noun few people have heard of) (something you didn't invent)
_____ was measured to be _____ +/- _____
(property) (number) (number)
_____. Results show _____ agreement with
(units) (sexy adjective)
theoretical predictions and significant improvement over
previous efforts by _____, et al. The work presented
(Loser)
here has profound implications for future studies of
_____ and may one day help solve the problem of
(buzzword)
_____.
(supreme sociological concern)

Keywords: _____, _____, _____
(buzzword) (buzzword) (buzzword)

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