



MOBILITY ACROSS BORDERS



Die Wissenschaft geht unruhigen Zeiten entgegen.

Wenn mit „alternativen Fakten“ Politik gemacht wird, wenn versucht wird politische Entscheidungen wie den Brexit mit bewusst lancierten falschen Informationen zu beeinflussen, wenn behauptet wird, Impfungen würden Autismus erzeugen, ohne dass es dafür wissenschaftlich gesicherte Erkenntnisse gibt, dann steht unser Selbstverständnis als aufgeklärte Gesellschaft auf dem Spiel. Mehr denn je ist der rational-kühle Blick der Wissenschaft gefragt; mehr denn je die fundierte, faktenbasierte Analyse, die faktische Behauptungen überprüfbar macht und politische und andere Lügen als solche entlarvt – und damit erst die Grundlage für einen rationalen politischen und gesellschaftlichen Diskurs schafft. Es ist offensichtlich, dass dieser Diskurs nicht jedem gefällt: wer die Deutungshoheit über die politischen Fragen zu monopolisieren trachtet und kritische Fragen als Gefahr begreift, wird an der Wissenschaftsfreiheit genauso wenig Gefallen finden wie an der Pressefreiheit. Anders ausgedrückt: eine freie Wissenschaft ist genauso wie eine freie Presse ein Grundpfeiler einer demokratischen Gesellschaft.

Umso erschreckender sind die vielfältigen Bemühungen in uns naheliegenden Staaten, die Wissenschaftsfreiheit einzuschränken oder gar abzuschaffen und die Reputation der Wissenschaft grundsätzlich in Zweifel zu ziehen. Als Beispiele seien hier nur die Verfolgung von Wissenschaftlern in der Türkei und die Bemühungen der ungarischen Regierung, die Unabhängigkeit der renommierten Central European University abzuschaffen, genannt. Dies sind besorgniserregende Entwicklungen, die die Wissenschaft als Ganzes entgegentreten muss und entgegentritt. Weltweit wurde am 22. April der March for Science durchgeführt, um gegen Wissenschaftsfeindlichkeit ein Zeichen zu setzen. Die Universität Freiburg, vertreten durch ihren Rektor und viele Studierende und Lehrende, hat sich an dem Freiburger March for Science zentral beteiligt. Für das FRIAS ist die Freiheit der Wissenschaft Lebenselixier; ohne den freien Austausch von Ideen über Länder- und Disziplinengrenzen hinweg wäre ein Institute for Advanced Studies hinfällig – es gäbe eben keine Advanced Studies mehr.

Die vornehmste Aufgabe des FRIAS ist die Förderung von herausragender Wissenschaft. Auch im ablaufenden akademischen Jahr hatten wir wahre Highlights. In der „Königdisziplin“, den sogenannten Forschungsschwerpunkten, stand FRIAS 2016/17 im Zeichen der Epigenetik. Dazu kamen vielfältige Forschungsaktivitäten in den Bereichen der experimentellen Natur- und Ingenieurwissenschaften wie etwa die gemeinsamen Freiburg-Straßburg-Aktivitäten in den Bereichen „Bio-based Nano-mechano Responsive Filmss“ und „Deep Brain Stimulation of the Ventral Middle Thalamus to Boost Memory Vividness over Time“ oder das Freiburg-Nagoya-Projekt „Multicomponent Supramolecular Catalysts for Sustainable Chemical Synthesis“. Auch in den Bereichen Rechtswissenschaften, Ökonomie und Politik, Geschichte, Kultur und Linguistik gab es eine Vielzahl herausragender Forschungen. Hier reichten die Themen von der Rolle der internationalen Statistiken in den Globalisierungsdebatten der Zwischenkriegszeit über internationale Migration oder die Analyse von Hightech-Clustern bis hin zu

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The cover picture was taken by Stefan Rother (FRIAS fellow 2014/15) in Manila in autumn 2008. It shows a group of women from the International Assembly of Migrants and Refugees (IAMR) protesting at the Global Forum on Migration and Development (GFMD). Together with Nicola Piper (FRIAS fellow 2016/17), Rother is conducting research on labour migration and workers' rights issues in Southeast Asia. Further visual impressions from field research of Stefan Rother and other FRIAS Fellows "across borders" on page 30.

"Conceptions of Medieval Thought", "Immersion and Distraction in Modern German Culture" und der gegenwärtigen chinesischen Ästhetik im Verhältnis zur Umwelt und Umweltzerstörung. Es ist kaum möglich, der Vielzahl von Forschungsthemen am FRIAS an dieser Stelle gerecht zu werden; nur so viel sei gesagt – es war ein höchst produktives Jahr! Mehr hierzu finden Sie auf <https://www.friias.uni-freiburg.de/en/research-areas>.

Lassen Sie mich einen Ausblick wagen auf das neue akademische Jahr: 2017/18 haben wir zwei Forschungsschwerpunkte. Der Schwerpunkt "Cohomology in Algebraic Geometry and Representation Theory" stammt aus dem Bereich der theoretischen Mathematik. Kohomologie ist ein Satz fundamentaler Ideen, mit dessen Hilfe Invarianten definiert und berechnet werden können. Sie ist heute aus keinem der geometrisch inspirierten Teilgebiete der reinen Mathematik mehr wegzudenken. Der Forschungsschwerpunkt möchte diesen Umstand nutzen, um Ideen zwischen mathematischen Teildisziplinen auszutauschen, die sich alle mit Kohomologie beschäftigen. Er wird von den Freiburger Mathematikern Annette Huber-Klawitter, Stefan Kebekus und Wolfgang Soergel geleitet.

In dem Schwerpunkt "Synchronization in Embodied Interaction" geht es um Resonanzphänomene im Bereich der Interaktionsforschung. In Gestik, Mimik, Blicken, Körperhaltung und Sprache können Synchronisationen zwischen Akteuren in Kommunikationssituationen festgestellt und analysiert werden. Der Schwerpunkt wird von den Freiburger Forschern Hermann Herlinghaus, Claas Lahmann, Stefan Pfänder und Carl Eduard Scheidt geleitet und verbindet psychologische mit linguistischen und kulturwissenschaftlichen Herangehensweisen.

Auch die vier geförderten Projektgruppen werden im neuen Jahr am FRIAS wichtige Akzente setzen. Eine Gruppe widmet sich der nachhaltigen Selbstoptimierung als Kernkompetenz im 21. Jahrhundert, eine zweite Gruppe aus dem Bereich der Finanzmathematik sucht durch die Anwendung robuster mathematischer Verfahren das Modellrisiko in Finanzmarktmödellen effizient zu behandeln. Die dritte Gruppe analysiert die durch Umwelt- und Ressourcenkonflikte induzierte Migration, aber auch die migrationsinduzierten Konflikte in den Empfängerländern. Die vierte Gruppe mit dem Titel "Roma, a Genetically Isolated Population?!" arbeitet kritisch-konstruktiv die Studien der Humanpopulationsgenetik zur Hypothese der Roma als isolierter Population auf und untersucht aus interdisziplinärer Perspektive, ob Design- und Datenauswahl diese These befördert haben könnte.

Neben diese Gruppenformate tritt ab Oktober wieder eine Vielzahl von exzellenten individuellen Forscherpersönlichkeiten als FRIAS Fellows, auch sie werden das Leben am FRIAS entscheidend prägen. Die meisten von ihnen kommen aus dem Ausland; ihr Aufenthalt bei uns ist die Konsequenz der "Mobility Across Borders", dem Themenschwerpunkt dieses Heftes, der zeitgemäßer nicht sein könnte. Viel Spaß bei der Lektüre wünscht Ihnen im Namen des gesamten Direktoriums

*Günther G. Schulze
Vorleser*

Günther G. Schulze
(Wissenschaftlicher Direktor Sozialwissenschaften)

For the past year, researchers in the Freiburg Network for Migration and Integration Research (FREINEM) have confronted the same issue over and over again: "At some point we realized that conversations with refugees – whether therapeutic conversations or scientific interviews – were a key topic for all of us," said Dr Anna Lipphardt, a Professor at the Institute for Cultural Anthropology at the University of Freiburg.

Such conversations present a major methodological challenge and have raised many questions: "Which ethical standards apply? How do we handle what refugees tell us – and what they don't tell us? What previous experiences with interviews, for example with the police, have refugees had over the course of their journey? What is our role as researchers when we speak with them?" Anne-Maria Müller, a psychologist at Freiburg University Medical Center, adds: "And what part of their story can be attributed to us – what do we provoke with our questions and how we ask them?"

Founded in October 2016, the FRIAS project group "Tracing Narratives of Flight and Migration" focuses on the individual stories of refugees – beyond national, institutional and legal categories. Fleeing to Europe and Germany follows many different trajectories; chance frequently plays a major role and seeking refuge is often associated with a wide range of sometimes traumatic experiences. The roles and tasks that

FRIAS PROJECT GROUP TRACING NARRATIVES OF FLIGHT AND MIGRATION



Anne-Maria Müller, Inga Schwarz and Anna Lipphardt are members of the Freiburg Network for Migration and Integration Research that was founded in 2011

migrants take on as well as their desires and goals can change repeatedly over the months – or years – they spend on the move. "Across all of our various disciplines, it is important that we develop a sense for this," says Lipphardt.

The group deliberately works with practitioners in Freiburg, such as municipal offices, cross-institutional groups, such as the "Netzwerk Bildung und Migration" (Network for Education and Migration), and refugee aid workers. "We want to get involved at the city level," says Dr Inga Schwarz, a research assistant at the Institute for Cultural Anthropology; the goal is that researchers and practitioners learn from one another. In December 2016, the group organised and moderated its first workshop at FRIAS on perspectives for housing refugees in Freiburg. "The city is large enough that there is a wide range of players and small enough that these players all know one another," says Lipphardt: "We are grateful that FRIAS is open to such formats."



Members of the FRIAS project group from left to right: Anne-Maria Müller (Medical Center – University of Freiburg), Dr. Thilo Wiertz (University of Freiburg), Dr. Inga Schwarz (University of Freiburg), Prof. Anna Lipphardt (University of Freiburg) and Prof. Dr. Nausikaa Schirilla (Catholic University of Applied Science Freiburg)

Along with the cultural anthropologists Lipphardt and Schwarz and the psychologist Müller, the group has four additional members: Dr Thilo Wiertz, a research assistant at the Institute for Geography at the University of Freiburg, Dr. Berit Lange, a physician and epidemiologist at the Freiburg University Medical Center, Dr Nausikaa Schirilla, a professor of social work at the Catholic University of Applied Sciences Freiburg and – as an associated member – the ethnologist Dr Heike Drotbohm, formerly of Freiburg and now a professor at the University of Mainz.

“Our group emerged from the Freiburg Network for Migration and Integration research,” says Inga Schwarz. The inter-university research consortium was founded in 2011, and established a focus on “flight and irregular migration” in the spring of 2015. Researchers in Germany have long been primarily concerned with the question of integration, Schwarz explained. “In

contrast, the migration process itself has hardly been examined as an independent subject.”

Over the course of 2015, the University Medical Center developed a concept for providing medical care to refugees at refugee processing centres – as part of this work, the psychologist Anne-Maria Müller and the physician Berit Lange came across the network and its focus. The shared interdisciplinary interest in engaging with refugee stories sparked the idea for a FRIAS project group.

The members of the group bring a wide variety of approaches and experience to the project. The medical professionals, for example, are interested in pre-existing conditions or the vaccination status of the refugees, and therefore want to learn more about their stories, says Müller. She herself offers regular psychosomatic consultations, where she speaks with women who had to

protect their children and struggled to move forward over the course of a long journey. “They always had to be strong – and now all of a sudden they find themselves in a bureaucratic system that they don’t understand and that takes over everything for them,” she says. “It’s important for me to understand what these people have experienced and what has changed.”

The group members work together to better understand the various approaches to writing and interpretation used in their respective disciplines, Lipphardt explains. They read texts together and agree on methods and concepts. This begins with the question of what to call those they are interviewing: *Refugees?* *Irregular migrants?* *New arrivals?* Each designation carries with it a specific image of the person in question. While discussions of these issues are sometimes difficult, they are incredibly enriching.

One focus is on trajectory analysis. This approach emerged out of migration research in the Netherlands and shines a spotlight on the process-driven and often arbitrary nature of seeking refuge. The word *journey* can be trivialising and the word *route* too technical, says Lipphardt, “thus the unusual concept of a trajectory”. In her current research project, Schwarz takes a methodological approach. “The key issue is that when an interview gets underway, one finds a trajectory which shapes the further course of the interview,” she says. The goal is to interpret narratives of flight and migration retrospectively – and to continue to follow them in the future. “If you look at such

narratives, you’ll see that they always change over time,” says Schwarz. They play an important role in the construction of one’s own biography, of one’s image of oneself and thus can also have an effect on mental well-being.

In January 2017, the project group held a workshop at FRIAS on the subject of trajectory analysis. A further workshop on ethical standards is planned. The group has secured organisational and financial support until the end of 2017. By then, the members aim to have developed a larger project and found appropriate funding, so that the cooperation can continue. Lipphardt sees the project group’s financial resources as “seed money”, which can and should lead to further research.

There have already been numerous positive effects on the city and university. For example, spring 2017 saw the first interdisciplinary seminar “Health care for refugees”. Funded by the Faculty of Medicine as part of a program sponsored by the Ministry of Science, Research and the Arts, the seminar was organised by the Infectiology/Refugee Medicine and included the perspectives of various group members in the form of teaching contributions [in different modules of the study programme]. Lipphardt reports that it met with enormous interest among students of medicine, global urban health and cultural anthropology. (tg)

NACHWUCHSFORSCHERGRUPPE MIGRATION VERÄNDERT RELIGION

**JProf. Dr. Bernhard Spielberg,
Anna-Maria Müller,
Simon Ruscher und
Franziska Seidler**



Die Zunahme globaler Mobilität macht sich auch in der katholischen Kirche bemerkbar. Zum einen wächst die Mitgliederzahl rasant. Zum anderen hat seit Beginn des 20. Jahrhunderts eine weltweite Neuverteilung der Mitglieder von einer im Denken und Handeln eurozentrischen hin zu einer polyzentrischen Weltkirche geführt. Um diesen tiefgreifenden Wandlungsprozess sichtbar zu machen, betrachtet die FRIAS-Nachwuchsgruppe um Junior Fellow JProf. Dr. Bernhard Spielberg Veränderungen im Katholizismus mit globaler Perspektive. Gemeinsam mit den Promotionsstudierenden Anna-Maria Müller, Simon Ruscher und Franziska Seidler erforscht Spielberg seit Herbst 2015 die Herausforderungen und Potenziale des globalen Wandels für die katholische Kirche.

FRIAS: Professor Spielberg, Ihr Forschungsprojekt hat den Titel „Globale Transformationsprozesse des Katholizismus“. Mit welchen Fragen beschäftigt sich Ihre Gruppe dabei?

Bernhard Spielberg: Wir stellen uns die Frage, wie Globalisierung die katholische Kirche verändert. Zunächst einmal versteht sie sich bereits seit langer Zeit als eine Weltkirche mit Kathedralen und Kirchen von New York bis Tokyo. Interessant ist dabei, dass jedoch erst seit etwa fünfzig Jahren die nicht-europäischen Präsenzen von Kirche überhaupt auf dem Radar sind. Durch die Anerkennung, dass Ortskirchen selbständig denkende Kirchen sind und nicht einfach ein Anhängsel von Europa, verschieben sich schließlich die Gewichte. Was wir hier innerkirchlich erleben, ist eine Spiegelung der aktuellen Weltgeschichte: Die zunehmende Souveränität anderer Weltgegenden führt zu einer Relativierung klassisch europäischer Denkmuster.

Für unsere Forschung betrachten wir drei elementare Identitätsmarker der Kirche. Wir fragen uns: Wie verändern sich die Rolle des Priesters, die Organisationsstruktur von Gemeinden und die Vorstellung von Gott? Diese drei Grundfragestellungen betrachten wir wiederum auf drei Kontinenten: in Asien, Nordamerika bzw. Afrika, wo diese Veränderungen jeweils besonders sichtbar werden, obwohl diese Veränderungen natürlich auch an anderen Orten geschehen. Die Priesterrolle verändert sich Nordamerika zwar genauso elementar wie in Afrika, aber in Afrika ist sie in einem ganz speziellen Setting erfahrbar. Gleicher gilt für die Gottesfrage in Indien und die Gemeindeentwicklung in den USA, wo sich Gemeinden formal und praktisch aus ganz unterschiedlichen Ethnien und Mitgliedern mit unterschiedlicher kultureller Herkunft zusammensetzen. So haben wir versucht, die sehr umfassende Frage nach globalen Transformationsprozessen in drei kleine Projekte zu teilen. Dabei bearbeitet jeder von uns zunächst sein eigenes Projekt, aber wir gehen von einem gemeinsamen Startpunkt aus und kommen schließlich auch zu einer Betrachtung, die eine globale Perspektive beschreibt.

FRIAS: Das passt wunderbar zum Titel dieser Ausgabe: „Mobility across Borders“. Zunächst sind Sie selbst mobil und schauen sich innerkirchlichen Wandel auf drei unterschiedlichen Kontinenten an. Daraüber hinaus betrachten Sie die Auswirkungen weltweiter Mobilität auf den Katholizismus. Wie würden Sie die Veränderungen aus theologischer Perspektive beschreiben?

Bernhard Spielberg: Ich denke, dass der zunehmende Austausch das Selbstverständnis unserer hiesigen Theologie herausfordert. Anders als andere Disziplinen ist die Theologie nach wie vor ein Fach, in dem wichtige Publikationen auf Deutsch veröffentlicht werden. Das hat jedoch auch dazu geführt, dass es hier nicht unbedingt ankommt, wenn anderswo bedeutsame und tiefgreifende Veränderungen angestoßen werden. Das ist ja beim Zeitungen oft ähnlich. Man interessiert sich tendenziell eher für das Eigene und glaubt trotzdem, man habe weltweit funktionierende Lösungen. Dieses Lösungsdenken wollen wir zum Problem machen.

Wir beobachten bereits jetzt, wie die zunehmende Souveränität außereuropäischer kirchlicher Präsenzen dazu führt, dass traditionelle Organisationsstrukturen neu ausgehandelt werden. Dieser Veränderungsprozess zieht sich durch alle kirchlichen Einrichtungen bis zur höchsten Ebene. Noch vor zehn Jahren bestimmte

der Papst die Glaubensauslegung recht souverän; was er sagte, galt als verbindliche Richtungsvorgabe. Heute bemerken wir, dass auch der Papst mehr in Austausch tritt und dass hier durchaus auch Konflikte auftreten können. Entsprechend befindet sich auch das Amt des Papstes im Wandel. Langfristig geht der Trend – innerkirchlich, aber auch gesellschaftlich – da hin, dass sich eine Haltung verfestigt, die eine Pluralität von Kulturen toleriert und einen produktiven Umgang mit dieser Vielfalt ermöglicht.

Simon Ruscher: In Europa ging man lange Zeit von der Säkularisierungstheorie aus, also der These, dass durch Modernisierung, Individualisierung und Rationalisierung Religion langfristig an Bedeutung verliert. Wenn man sich aber anschaut, welche Personen aus welchen Staaten in die Europäische Union migrieren, dann erkennt man, dass ein Großteil der Migranten christlich geprägt ist und sich dadurch auch das Christentum in Europa radikal verändert. In den USA beobachten wir, dass der weiße, kaukasische Katholizismus faktisch ausstirbt: Seit 1995 ist der Anteil des kaukasischen Katholizismus von knapp 80% auf 40% gesunken. Der Rest ist asiatischer und südamerikanischer Herkunft. Das bringt natürlich vielfältige Veränderungen in allen Bereichen des religiösen Lebens mit sich. Migration kann also auch als der Motor verstanden werden, der Religion am stärksten verändert. Durch Migration werden



die wiederum nur von Migranten besucht werden. Das zeigt uns, dass man zwar die Säkularisierungsthese ernst nehmen muss – es zeigt sich im größeren Kontext jedoch auch, dass Religion sich heute so schnell bewegt wie noch nie und einem radikalen Wandel ausgesetzt ist. Denn sie wächst nicht nur proportional zur Bevölkerung, sondern sogar überproportional. Das gilt eigentlich nahezu für jede Religion außer dem Judentum.

FRIAS: Man könnte also auch von einer innerkirchlichen Globalisierung sprechen. Wie sehen die Veränderungen, die Sie wahrnehmen, konkret aus?

Franziska Seidler: Wenn wir Veränderungsprozesse innerhalb der katholischen Kirche nachzeichnen, betrachten wir unwillkürlich auch gesamtgesellschaftliche Transformationen. Innerkirchliche Veränderungen gehen schließlich Hand in Hand mit gesellschaftlichem Wandel: Wenn sich die Priesterrolle verändert, dann passiert das nicht im Alleingang, isoliert von äußeren Umständen, sondern die Gesellschaft wandelt sich mit. Dies gilt auch für die Frage nach Gotteskonzeptionen: Wie ich über Gott denke, ist auch stark davon beeinflusst wo ich lebe und wie sich mein Umfeld verändert. Unsere Fragestellung hängt untrennbar mit diesen gesellschaftlichen Begleitumständen zusammen. Nur durch die Miteinbeziehung dieser Umstände können wir innerkirchliche Veränderungen begreifen.



bestimmte Theologien in einen anderen Kontext gesetzt und es werden alternative Lebenskonzepte und Schutzzräume ausgelebt. Wie kommt es beispielsweise dazu, dass man im Schwarzwald buddhistische Klöster findet, in denen interessanterweise ein recht homogenes deutsches Mittelstandsmilieu Buddhismus pflegt? Oder dass wir in der Schweiz Moscheen vorfinden, die maßgeblich von Konvertiten besucht werden – direkt daneben stehen Moscheen,

Bernhard Spielberg: Die Betrachtung verschiedener weltweiter kirchlicher Standorte bietet uns darüber hinaus die Möglichkeit, die vielfältige Einschreibung gesellschaftlichen Wandels in die katholische Theologie zu begreifen. In Westeuropa, beispielsweise, wird der Umgang mit Ehescheidung oder mit homosexuellen Partnerschaften völlig anders bewertet als in Osteuropa oder Afrika. Dort stemmt man sich entschieden dagegen, dass die Kirche homosexuellen Partnerschaften ihren Segen ausspricht. Diese Konfrontation divergierender Perspektiven war früher weniger relevant. Durch mediale Vernetzung und die Zunahme des wechselseitigen Austausches wird sie jedoch bedeutsamer.

Anna-Maria Müller: Tatsächlich führt uns die globale Perspektive unserer Forschung diesen Bruch in aller Deutlichkeit vor Augen. Bis-her prägte vor allem die europäische Auffassung das globale theologische Paradigma. Durch die innerkirchliche Gewichtsverschiebung sollte man sich jedoch auch fragen: Was passiert, wenn die afrikanischen Bischofskonferenzen etwas am herrschenden Familienbild ändern würden, wenn sie beispielsweise Polygamie in ihre Glaubensauslegung integrieren? Das würde hier vermutlich zu großen Irritationen führen. Aber dort ist Polygamie als kulturelle Praxis ganz normal, so wie es für uns ganz normal ist, dass Ehescheidungen vorkommen. So erfahren wir, was es bedeutet, in einem bestimmten Kontext zu leben und

diesen als Normalität anzusehen. Und dass man dennoch nicht davon ausgehen kann, dass diese Realität überall so gelebt wird, sondern dass Lebenspraxis wirklich etwas Kontextuelles ist.

FRIAS: Der Blick auf globale Mobilität zeigt also letztlich auch die Divergenz lokaler Lebensrealitäten jenseits der Kirche auf. Empfinden Sie es so, dass Religion hier integrativ wirken kann?

Bernhard Spielberg: Aus der Religionsgeschichte wissen wir, dass Religion ebenso ein Potenzial für Gewalt wie ein Potenzial für Versöhnung befreithält. Wenn wir all diese Faktoren in den Blick nehmen, wird klar, dass sie eine enorme Komplexität erzeugen, die wir erfassen möchten. Für unsere Forschung ist es entsprechend hilfreich, nachzuvollziehen, welches dieser Potenziale sich in welcher Form in diesem Wandlungsprozess entfaltet. Das klingt zunächst etwas abstrakt, jedoch gibt es im 21. Jahrhundert tatsächlich eine Vielzahl realer kulturell bzw. religiös motivierter Auseinandersetzungen: innerhalb von Religionsgemeinschaften und zwischen unterschiedlichen Kulturen. Zum Beispiel wird in Deutschland derzeit ausgehandelt, wie mit Migration und den damit einhergehenden neuen kulturellen und religiösen Einflüssen umgegangen werden kann.

FRIAS: Vielen Dank für dieses Gespräch. (ks, jp)

Eine englische Übersetzung des Interviews finden Sie online unter www.frias.uni-freiburg.de/frias-news

INVESTIGATING THE COMPLEX RELATIONSHIPS BETWEEN WILD BEES AND PLANTS

Diego P. Vázquez

At FRIAS, the Argentinian biologist Diego P. Vázquez is investigating what happens when interdependent species no longer come together due to environmental changes.

You won't get far on your own. Most species on the planet would be unable to survive in the long term without a multitude of other species. Whether for food, for nest building, or even for reproduction – the fact that most species depend on a variety of other organisms is one of the fundamental aspects of life and survival.

The way in which one species depends on another is often extremely complex, to the extent that it typically takes scientists a while to understand the consequences of changes to the local and of course the global ecosystem. For instance shifts in the timing of biological events, like flowering and nesting, also have unexpected consequences due to the complexity of ecosystems.

Such shifts may occur, if an animal's breeding time undergoes a temporal shift – say, on account of climate change – but the flora and fauna which constitutes the animal's food supply does not shift with it. Or if

species which require other species for successful reproduction – such as plants and their pollinators – come to be active during different times of year because environmental conditions have changed.

Diego P. Vázquez focuses on these complex ecological interactions. After studying in Buenos Aires, he completed his doctorate in the Department of Ecology & Evolutionary Biology at the University of Tennessee in Knoxville, before working as a post-doc at the University of California in Santa Barbara. He currently holds a research and a teaching positions at the Argentine Institute for Dryland Research and the National University of Cuyo in Mendoza. In March 2016 he received the Friedrich Wilhelm Bessel Research Award from the Alexander von Humboldt foundation. He joined FRIAS as an External Senior Fellow in September 2016.

"I am interested in how nature works, how species interact with one another – I am addressing really fundamental questions," says the biologist. And then he begins to wax lyrical about the diverse interac-



tions in nature: fish which live off the parasites of other fish, fleas which are dependent on mammals and even trees that rely on dung beetles to bury their seeds.

But the symbiotic relationship between plants and their pollinators is what fascinates him above all else. And of all the animals in such mutualistic relationships, he is particularly enamoured with solitary wild bees that nest in wood. These are the animals whose ecological value is being increasingly honoured with the building of 'bee hotels' in home gardens, and they are the focus of Vázquez' research at FRIAS.

While there are some studies on birds or mammals and their prey, which analyse the consequences of the mistiming of biological events for reproductive success, Vázquez is not aware of any research into other species. This opens up a large field of research, especially as bees as a group are extremely diverse: "There are up to 20,000 species of wild bees."

He explains that these bees are ideal for investigating the mistiming



Solitary bee *Megachile* sp. visiting flowers of *Larrea divaricata* in Villavicencio Nature Reserve. Photo: Diego Vázquez

of biological events as they rely on plant resources in a number of ways: they need pollen, nectar, and in some cases, also petals to build their nests. They are dependent on plants throughout their entire life cycle, making it more likely that they will be more strongly affected by shifts in the timing of species' seasonal development than some other organisms. And as pollinators, they also have an effect on the plant population, both in natural and agricultural ecosystems.

Some events, such as an extreme weather cycle or long-lasting environmental toxins, can disturb an ecological system so profoundly that it never returns to its original state.

The clearest example of this is when species become extinct. The decline in insect species over the past decades, including in Germany, has long indicated the extent to which ecosystems, even in our latitudes, have lost their equilibrium. Through his research, Vázquez hopes to advance our understanding of these interrelationships.

But not only that: "We must aim to use up as little nature as possible," says Vázquez, who is pictured on his Department's webpage with his bicycle. With this attitude to ecology, he feels very welcome in Germany – and especially in Freiburg.

The university environment in Freiburg, he continues, lives up to this reputation, with the Department of Biometry and Environmental System Analysis and the Chair of Nature Conservation and Landscape Ecology serving as prime examples from his field. The visiting scholar from Argentina is working in collaboration with both departments. And then he tells us what else he likes about his stay at FRIAS: "The research freedom I enjoy here." (bj)

A RELUCTANT THEORIST

Martin Loughlin



Martin Loughlin, holder of the chair in public law at the London School of Economics (LSE), is a world-renowned scholar on the history and theory of public law. In October 2016, he came to Freiburg to join FRIAS as a senior fellow for one year. Within the FRIAS community he soon became known for his sharp wit, the pleasure he takes in a good discussion and his openness towards different academic perspectives. In his own academic work, he regularly crosses disciplines from law to politics, economics and back. This also reflected in the fact that as a student he first studied economics, then politics, before switching to law.

After graduation, he went on to specialise in administrative law, working in the field of land use and environmental law. When Margaret Thatcher became prime minister and started restructuring and downsizing the British welfare state, Loughlin began research on the evolving conflicts between central and local government. Local authorities at that time started to become more interested in using their own legal powers in innovative ways in order to circumvent centrally imposed restrictions. The more he

studied these issues, the more he became interested in their underlying constitutional structure. "I realized that public law is the law that builds the authority of the state and I wanted to trace the roots of the British understanding of the relationship between law and government", he says. This motivated him to delve into the topic of constitutions and public law by reading all of the classics in political theory from Aristotle to Plato, through Bodin and Hobbes, to Montesquieu, Rousseau and Hegel. He then published his findings on the conceptualizations of law in political thought in his book *Sword and Scales*.

After holding chairs at the Universities of Glasgow and Manchester, he returned to the LSE in 2000. He was awarded a two-year fellowship to concentrate on his research project into the intellectual foundations of public law. His two ground-breaking publications soon followed. *The Idea of Public Law*, published in 2003, presented a conceptual framework of public law, and in 2010 *Foundations of Public Law* provided a conceptual-historical account of the emergence of public law in Europe. Combining

approaches from history, law, political theory and philosophy, the two books offer a novel account of the European concept of public law, and have received considerable critical acclaim. But Loughlin calls himself a "reluctant theorist". "I am not a philosopher", he says, "and I do not particularly enjoy the abstraction of political philosophy. I am only confronting myself with all of these theoretical questions to the extent that I am trying to understand my own subject".

Loughlin began to focus on constitutions during a time of widespread enthusiasm for the European project, and when more and more power was transferred to supranational institutions such as the European Union, the United Nations, the World Bank or the International Criminal Court. In 2007/08 he held a fellowship at the Wissenschaftskolleg in Berlin, where he was part of a focus group on "Constitutions beyond the nation state". The different concepts of constitution in Germany and England have fascinated him ever since, though he remains sceptical of the cosmopolitan turn in law favoured by many German scholars. In his view, constitutions belong to the sphere of the nation state, since on a supranational level they too often mask questions of politics and authority that are more difficult to solve. He jokingly refers to himself as "the last Staatslehrer", referring to the German Staatslehre tradition of the 19th century through to the Weimar republic, which focuses on the general concept of states.

The relationship between law and politics is also driving Martin Loughlin's research project at FRIAS, where

he is working on two projects. One is a publication on "Political Jurisprudence", a collection of essays on the conception of public law as political jurisprudence. At the same time, he is working on a general monograph on constitutional theory. I caught up with him giving a lecture in the University's law faculty on the topic of "The Silences of Constitutions". Loughlin argues that all constitutions contain 'silences', which often result from a conscious determination to leave out unresolved matters on which consensus is not possible. These silences are functional, because they allow a consensus on constitutions by excluding certain contentious political questions. A typical example of these silences is the role of the American president: the American constitution of 1787 imagined the president as a rather ceremonial figurehead, analogous to the role of the king in England. However, the powers of the president have expanded tremendously and his role has changed over the centuries. As the political scientist Richard Pious stated in his book *The American President*: "The president claims the silences of the Constitution."

Loughlin argues that constitutional silences are filled either by political debates, judicial interpretation, or administrative measures. This depends on whether constitutions are understood as a framework for continuing political negotiation (*Rahmenordnung*), as an order of values (*Werteordnung*), or as facilitator of an evolving administrative order (*Verwaltungsordnung*). His contentious proposition is that these silences are no longer being filled by political debates but have rather become

the responsibility of lawyers through juridification and administrators through bureaucratization. He starts his argument from the premise of the autonomy of 'the political', understood as the way humans are organized in territorial units with authority imposed from above. "This experience shapes not just our sense of authority and obedience, but also our sense of right and wrong, freedom and servitude, good and evil", he explains. In this way, he considers that the legal and the political operate symbiotically to build the structure of authority. But he argues that the conventional understanding of constitutions as frameworks for further political deliberations has been eroded, first, by scholars who treat law as a species of moral philosophy concerned with right and wrong instead of war and peace and, secondly, those who understand law as an instrument to deliver collective goods in an efficient and effective way.

This development is leading to the legalization of political issues and the consequential politicization of law. Unless handled sensitively it can lead to the diminution in the authority of both. "Politicians are no longer commanding the allegiance they once did", he states, and "one of the reasons for the juridification of the world is because we don't have that trust in politics anymore, so we turn to the law in order to protect ourselves with rules." In the next stage of his inquiry into the development of public law, Martin Loughlin will certainly remain a vigilant and critical observer and a transgressor of conventional disciplinary boundaries. (ks)

ROLLABLE SCREENS AND BODY SENSORS: THE FUTURE OF ORGANIC ELECTRONICS

Ghada Hamdy Ibrahim

Plastic is usually an insulating material, but when its properties are chemically altered, it becomes conductive. Alan J. Heeger, Alan G. MacDiarmid and Hideki Shirakawa discovered this property of polymers in 1977. This group of researchers from the US and Japan found that when certain modifications are made, polymers can conduct electricity much like metal. Their discovery was groundbreaking and opened up a new research field on conducting polymers in both physics and chemistry. In 2000, Heeger, MacDiarmid and Shirakawa were honoured with the Nobel Prize in Chemistry for their work. In the decades that followed, their discovery not only influenced pure research, it also had practical implications. Today, electrical semiconducting polymers are found as components in light-emitting diodes and solar cells, smartphones and TV screens. These polymers also have the potential to advance the development of flexible electronics.

FRIAS Junior Fellow Ghada Hamdy Ibrahim, who works in the research field of organic electronics, uses conducting polymers or small organic compounds to develop electronic circuits. In November 2016, she joined FRIAS as a Marie S. Curie FRIAS COFUND Junior Fellow, on leave from the Electronics Research Institute in Giza, Egypt. When Ghada Ibrahim and I met to talk about her work, I asked her what motivated her to study electronic engineering in the first place. “I initially studied computer engineering, but I soon found that I was more interested in the physical side of electronic engineering, the hard science of it, rather than computing. So I decided to switch subjects and focus on electronic engineering instead.” Ghada Ibrahim studied electronic engineering at Cairo University in Egypt. She received her PhD in electronic and communications engineering in 2013 for her thesis on “Ultra Low Power Super-Regenerative QPSK Receivers for Wireless Sensor Networks Applications”. From 2005 until 2014, she worked as a researcher at the Electronics Research Institute



in Giza, Egypt. During this period, she also spent two years at the Malaysian Institute for Microelectronics Systems in Kuala Lumpur, where she worked as a Senior Design Engineer focusing on radio-frequency engineering and designing radio-frequency integrated circuits from 2006 to 2008.

Her FRIAS project focuses on the development of organic field-effect transistors for radio-frequency identification tags. A field-effect transistor is a semiconductor device used to amplify or switch electronic signals and electrical power, similar to a power switch. The most commonly used semiconductors are made of inorganic metal oxide material like silica. Thanks to the used material, a semiconductor can function as both an insulator and a conductor. Every field-effect transistor has a source, a gate and a drain. When voltage is applied between gate and drain, electric current flows between the source and the drain. As a consequence, the temperature of the transistor increases. This can be imagined like sluice, where water runs through if the gate is opened. “One application of field-effect transistors is in radio-frequency identification track tags,” Ghada explains. These tags are commonly used in logistics as tracking devices, where information is read using radio waves. Some of these tags are no bigger than a grain of rice.

The novelty of Ghada’s research project is its use of organic material. While traditional transistors are made on silicon plates, organic field-effect transistors are made of organic molecules, such as thin-film

polymers, paper or textiles. The most striking difference between the two types of materials is the temperature required for manufacturing. Producing transistors requires a manufacturing temperature of up to 300 degrees Celsius. Consequently, the material used must be resistant to high temperatures, and thus manufacturers typically turn to silicon or glass. However, these materials make the transistors rigid, inflexible and fragile. Using organic material promises to overcome these limiting factors. Transistors made of organic material can be produced at far lower temperatures of about 150 degrees Celsius, thereby allowing the use of more flexible materials that cannot withstand temperatures of 300 degrees Celsius. As these innovative, organic materials are more flexible and less fragile, they can be used for a variety of new applications. “For example, organic transistors can be used in rollable flat screens for mobile phones or tablets,” Ghada explains.

Ghada herself is more interested in small-scale applications, however. After her fellowship at FRIAS, she hopes to investigate the use of organic transistors as a component of human body sensors. These body sensors are placed on or under the human skin to measure and monitor certain bodily functions in order to evaluate them in real-time. “In the research field of human body sensors, power supply is a common issue,” Ghada tells me. She wants to draw on her experience in circuit design and the development of wireless receivers to investigate the possibilities for developing wearable power

supplies for body sensors – like every smartphone or tablet, body sensors need to be charged. As futuristic these body sensors may sound, Ghada is convinced that they will soon be an everyday reality.

After finishing her fellowship at FRIAS, Ghada would like to continue her research in Germany. “Freiburg is a beautiful place. And this is the first time I’ve had the opportunity to work somewhere where I don’t just interact with electrical engineers,” Ghada smiles. “My time at FRIAS has been an enriching experience.” (sb)



At the department of Microsystems Engineering Ghada Ibrahim is building and testing the prototypes of an organic field-effect transistor

FRIAS ALUMNA MONIKA BEDNAREK



Monika Bednarek

Associate Professor Monika Bednarek currently works in the Department of Linguistics at the University of Sydney, with previous posts held at the University of Technology, Sydney, and the University of Augsburg, Germany, where she completed her PhD in 2005. She first came to Australia in 2006 on a 2-year research fellowship from the Deutsche Forschungsgemeinschaft (DFG), and more recently was a Visiting Scholar in the Department of Linguistics at the University of California, Santa Barbara (2017) and a Visiting Fellow at the Reuters Institute for the Study of Journalism, and the Faculty of English Language and Literature at the University of Oxford (2013). Much of her research is located at the interface of linguistics and media discourse studies, with special focus on television and news discourse. Another research interest lies in the linguistic expression of opinion and emotion, and the combination of corpus methods with discourse analysis. Publications in this area include her 2008 book *Emotion Talk across Corpora* (Palgrave Macmillan).

Her FRIAS Research Project in 2015/2016 was a corpus linguistic analysis of linguistic practices and innovation in television dialogue. US TV series are globally popular products, and billions of viewers worldwide are exposed to the language used in such series. Yet we know surprisingly little about television dialogue as a language variety. Even though media linguistics is a big area, TV series have not yet been analyzed extensively by linguists. In addition, with the rise of internet and streaming services media consumption has drastically changed. Bednarek is interested in what the language looks like that so many viewers are exposed to on a daily basis. The project concentrated on identifying and explaining linguistic practices in US TV dialogue, with a focus on linguistic innovation. It combined corpus linguistic methods with questionnaires to investigate how dialogue is consumed by advanced learners of English. More specifically, she explored how German students from seven different universities engage with English-language series. Interest-

ingly, most of the surveyed students watch such TV series in the original (English) version, meaning that TV dialogue does have the potential to be an influential model of spoken English for advanced learners.

Moreover, the project analyzed a large corpus of dialogue from over 60 TV series, studying episodes from the first seasons of contemporary TV series, broadcast between 2000-2012, including comedy, drama as well as 'mainstream' and high quality shows. Working with this corpus of transcripts and specialized software Bednarek analyzed the dialogue both quantitatively (frequency) and qualitatively (functions). An interesting finding was that linguistic innovation is used for characterization and to connect to the audience. For instance, a group of friends in a series can be characterized as a group by looking at the particular kinds of adjectives and linguistic innovations they use. An example of a linguistic innovation in the series *The Big Bang Theory* is the combination of the words Tetris and

wrestling to form *tresiling*, describing a game that the 'nerd' characters have invented, while bazinga from the same series is an example of an innovation functioning as a catch phrase for a character. In some cases, linguistic innovations may spread to a wider audience, who might not actually remember the original reference or might never have seen the show. Moreover, such innovations may construct a particular narrative world, as in the case of *metahuman* from the fantasy series *Birds of Prey*, which refers to humans with inexplicable special powers.

Bednarek's research also confirmed the presence of a lot of emotionality in TV language and showed how surprisingly multifunctional TV dialogue can be. Considering profanity as an example, it was seen to have multiple different functions, as it can construct a character, but can also be used as catch phrase or plot device or for the creation of humor. Furthermore, Bednarek found that the series she analyzed show a lot of engagement with our contemporary

world, using words like *divorce* or gay relatively frequently and thereby picking up on societal developments. All in all, through its methodological innovation, its empirical basis and interdisciplinary approach the project made significant contributions to corpus research, debates on American pop culture, mass media communication, and television studies. (fr)

FELLOWS 2016/2017



FOCUS: CHEMICAL EPIGENETICS

◆ Prof. Bernhard Breit
04/2017 – 12/2017
Internal Senior Fellow
University of Freiburg
Organic Chemistry
Focus PI

◆ Prof. Oliver Einsle
10/2016 – 07/2017
Internal Senior Fellow
University of Freiburg
Biochemistry
Focus PI

◆ Prof. A. Ganesan
09/2016 – 12/2016
External Senior Fellow
(Marie S. Curie FCFP)
University of East Anglia
Organic and Medicinal Chemistry
Targeting Histone-Modifying Enzymes for Epigenetic Drug Discovery

◆ Prof. Stefan Günther
10/2016 – 07/2017
Internal Senior Fellow
University of Freiburg
Pharmaceutical Sciences / Pharmaceutical Bioinformatics
Focus PI

◆ Prof. Manfred Jung
10/2016 – 07/2017
Internal Senior Fellow
University of Freiburg
Pharmaceutical and Medicinal Chemistry
Focus PI



◆ Prof. Udo Oppermann

04/2017 – 09/2017
External Senior Fellow
(Marie S. Curie FCFP)
University of Oxford
Molecular Biology
Understanding the Role of Histone Demethylase LSD1 in Mesenchymal Stem Cell Biology and Musculoskeletal Ageing

HUMANITIES AND SOCIAL SCIENCES

◆ Prof. Francisco Arenas-Dolz

01/2017 – 12/2017
External Senior Fellow
(Alexander von Humboldt-Fellow)
Rijksuniversiteit Groningen
Comparative Literature
Embodiment and Cosmic Perspective-Taking in 20th Century Fiction
Texts in Multiple Voices: Digital Genetic Edition of Nietzsche's Lectures on Rhetoric

◆ Prof. Ronald G. Asch

10/2016 – 07/2017
Internal Senior Fellow
University of Freiburg
Early Modern History
On the eve of war: Europe between the Edict of Nantes and the outbreak of the Thirty Years War

◆ Prof. Sabina Becker

10/2016 – 07/2017
Internal Senior Fellow
University of Oxford
Modern German Literature and Culture
Dialectics of Attention: Immersion and Distraction in Modern German Culture
Laboratorium Weimar: Konstellationen in Gesellschaft, Kultur und Literatur 1918-1933

◆ Dr. Martin Bemann

10/2016 – 07/2017
Junior Fellow
University of Freiburg
History of Economic Knowledge and Economic Statistics
When the World Economy Began to Matter: International Economic Statistics, Economic Debates in Britain and Germany and Globalisation Processes between the World Wars

◆ Dr. Marco Caracciolo

09/2015 – 01/2017
Junior Fellow
(Alexander von Humboldt-Fellow)

Rijksuniversiteit Groningen
Comparative Literature
Embodiment and Cosmic Perspective-Taking in 20th Century Fiction
Texts in Multiple Voices: Digital Genetic Edition of Nietzsche's Lectures on Rhetoric

◆ Dr. Todd Carmody

10/2016 – 09/2017
Junior Fellow
(VW Mellon-Fellow)
Harvard University
English Literature and American Studies
Racial Handicap: Uplift and Rehabilitation in Postbellum America

◆ Prof. Carolin Duttlinger

08/2016 – 12/2016
External Senior Fellow
University of Freiburg
German Literature
How the Linguistic Brain navigates the Social World
Immersion and Distraction in Modern German Culture
Laboratorium Weimar: Konstellationen in Gesellschaft, Kultur und Literatur 1918-1933

◆ Dr. Joseph Harris

08/2016 – 12/2016
External Senior Fellow
University of London
French Literature and Theatre Studies
The Tragic Death-Wish: Violence and Murder in the Works of Pierre Corneille

◆ Prof. Wai Yip Ho

01/2017 – 07/2017
External Senior Fellow
(Marie S. Curie FCFP)
Hong Kong Institute of Education
Sociology / Islamic Studies
Re-emergence of Middle Eastern Traders in China: Islam, Inter-Asian Connections and the New Silk Road Network

◆ Prof. Winfried Fluck

03/2017 – 05/2017
External Senior Fellow
Freie Universität Berlin
North American Studies
Book Project: Reading for Recognition

◆ Dr. Erica Fretwell

01/2017 – 09/2017
Junior Fellow
(VW Mellon Programme)
University at Albany
American Literature
With Feeling: Sensation and Social Life in Nineteenth-Century America

◆ Prof. Werner Frick

04/2017 – 09/2017
Internal Senior Fellow
University of Freiburg
German Studies

◆ JunProf. Adriana Hanulikova

10/2016 – 07/2017
Junior Fellow
University of Freiburg
German Linguistics

How the Linguistic Brain navigates the Social World
Immersion and Distraction in Modern German Culture
Laboratorium Weimar: Konstellationen in Gesellschaft, Kultur und Literatur 1918-1933

◆ Prof. Henrike Lähnemann

07/2017 – 08/2017
External Senior Fellow
University of Oxford
German Medieval Studies
Internationalisation and Cooperation. Taking the Oxford – Freiburg Connection further

◆ Prof. Martin Loughlin

10/2016 – 07/2017
External Senior Fellow
(EURIAS Programme)
London School of Economics
Law / Legal and Political Thought
State, Law, Constitution

◆ Prof. Barbara Mennel

10/2016 – 07/2017
External Senior Fellow
(Marie S. Curie FCFP)
University of Florida
German Studies
Women and Work in Contemporary European Cinema

◆ Dr. Elisabetta Nadalutti

09/2016 – 04/2017
Junior Fellow
(Marie S. Curie FCFP)
Universität Duisburg-Essen
Geo-Politics and Ethics

Development in Border Areas and its Ethics' (DEBATE)

◆ Prof. Marie Seong-Hak Kim

10/2016 – 07/2017
External Senior Fellow
(EURIAS Programme)
St. Cloud State University

Legal History

Judicial Process and Constitutional Transitions in South Korea

◆ Prof. Caprice Knapp

05/2017 – 07/2017
External Senior Fellow
(Alexander von Humboldt-Fellow)

The Pennsylvania State University

Health Policy and Administration

Investigating Maternal and Child Health in Urban Areas

◆ Prof. Nicola Piper

04/2017 – 07/2017
External Senior Fellow
(Marie S. Curie FCFP)
Washington University in St. Louis
Germanic Languages and Literatures/Medieval Studies
Narrative Logic and Cognition: Storytelling in Medieval German Epics (1150 – 1230)

◆ Dr. Sandro Sessarego

09/2016 – 08/2017
Junior Fellow
(Marie S. Curie FCFP)
University of Texas at Austin
Hispanic Linguistics
Chocó Spanish: Casting Light on its Grammar and History

◆ JunProf. Bernhard Spielberg

01/2015 – 12/2017
Junior Fellow
University of Freiburg
Catholic Theology / Practical Theology
Global Transformations of Catholicism: Strategies of Plurality – Role Models – Questions of God

◆ Dr. Eva von Contzen

04/2017 – 03/2018
Junior Fellow
University of Freiburg
English Literature
Lists in Literature and Culture: Towards a Listology (LISTLIT)

◆ Prof. Immo Warntjes

01/2017 – 06/2017
External Senior Fellow
(Marie S. Curie FCFP)
Trinity College Dublin
History
Hermann of Reichenau and the Reckoning of Time in the Eleventh Century

◆ Prof. Aude Wirth-Jaillard

10/2016 – 07/2017
External Senior Fellow
(Marie S. Curie FCFP)
Université catholique de Louvain
Linguistics and Medieval History
Vox Populi. Medieval Speech from Below, from Spoken Words to Written Records

◆ JunProf. Evi Zemanek

04/2017 – 08/2017
Junior Fellow
University of Freiburg
German Studies
“Caricatures of Man-Made Nature: Reflections on Environmental Change in German Magazines from the Era of Industrialization”

◆ Prof. Christian Schneider

09/2016 – 12/2016
Junior Fellow

University of Freiburg
German Studies



LIFE, NATURAL AND TECHNICAL SCIENCES & MEDICINE

◆ Dr. Yury Belyi

10/2016 – 11/2016
External Senior Fellow
Gamaleya Research Center for Epidemiology and Microbiology
Microbiology
Molecular Mechanisms of Alteration in Eukaryotic Membrane Trafficking induced by Legionella Pneumophila, Vacuolar Pathogen of Phagocytic Cells

◆ Dr. Milena Bertolotti

06/2017 – 05/2018
Junior Fellow
(Alexander von Humboldt-Fellow)

University of Freiburg
Immunobiology
Mapping the Nanoscale Organization of the BCR Redox Machinery

◆ Dr. Stefan Buhmann

11/2014 – 09/2017
Junior Fellow
University of Freiburg
Physics

Macroscopic Quantum Electrodynamics and its Consequences

◆ Dr. Luca Corlatti

05/2016 – 04/2017
Junior Fellow
(Marie S. Curie FCFP)
University of Natural Resources and Life Sciences Vienna
Behavioural Ecology

Mating Systems and Anthropogenic Influence: a Life History Perspective on Mountain Ungulates

◆ Prof. Harry Holthöfer

08/2016 – 03/2017
External Senior Fellow
(Marie S. Curie FCFP)
University of Helsinki
Biomedicine
Urinary Exosomes for Novel Diabetes Diagnostics

◆ Dr. Ghada Ibrahim

11/2016 – 10/2017
Junior Fellow
(Marie S. Curie FCFP)
Electronics Research Institute, Giza
Electronics and Engineering
Development of RFID Circuit Building Blocks using an Organic TFT Transistor Technology

◆ Prof. Brian Laird

07/2016 – 01/2017
External Senior Fellow
University of Kansas
Theoretical/Computational Chemistry
Simulation and Theory of Chemically Heterogeneous Solid-Liquid Interfaces

◆ JunProf. Christian Leukel

04/2017 – 01/2018
Junior Fellow
University of Freiburg
Sport Science/Human Neurophysiology
Investigating the Corticospinal System in Humans

◆ Prof. Robert Murphy

02, 06, 10/2017
External Senior Fellow
Carnegie Mellon University
Computational Biology

Automated Interpretation of

Fluorescence Microscope Images

◆ Prof. Mihai Paun

06/2017 – 07/2017
External Senior Fellow
(Marie S. Curie FCFP)
University of Illinois in Chicago
Mathematics
Monge-Ampere Equations and Kodaira Dimension of Algebraic Fiber Spaces

◆ Dr. Stefanie Rätz

10/2016 – 05/2017
Junior Fellow
(Marie S. Curie FCFP)
Argentine Institute for Dryland Research, CONICET; and
National University of Cuyo
Biology
Understanding the Ecological Variability and Transiting Extrasolar Planets in Young Open Clusters

◆ Dr. Ian Riddlestone

09/2016 – 08/2017
Junior Fellow (Alexander von Humboldt Fellow)
University of Bath
Synthetic Inorganic Chemistry
Preparation of Stabilised and Free Silylum and Silicocenium Ions Featuring Known and Novel Weakly Coordinating Anions; Reagents for the Coordination and Activation of Small Molecules

◆ Prof. Christian Schnell

05/2017 – 08/2017
External Senior Fellow
Stony Brook University
Mathematics

Singular Hermitian Metrics on

Vector Bundles

◆ Prof. Alejandro Toro-Labbé

01/2017 – 07/2017
External Senior Fellow
Universidad Católica de Chile
Chemistry
A New Theory of Chemical Reactions

◆ Prof. Diego Vázquez

09/2016 – 07/2017
External Senior Fellow

(Marie S. Curie FCFP)
Argentine Institute for Dryland Research, CONICET; and
National University of Cuyo
Biology
Understanding the Ecological Impacts of Increased Climatic Variability

JOINT RESEARCH GROUPS FREIBURG/STRASBOURG

"Deep Brain Stimulation of the Ventral Midline Thalamus"
10/2015 – 09/2017

◆ Prof. Jean-Christophe Cassel

University of Strasbourg
Physical Chemistry
University of Strasbourg
Laboratory of Cognitive and Adaptive Neurosciences (LNCA)

◆ Prof. Ulrich G. Hofmann

University Hospital Freiburg
Neural Engineering, Translational Neurosciences

"Soldiers out of Control: An Entangled History of Accidents in the French and German Military, 1920–1970"
10/2015 – 09/2017

◆ Dr. Peter Itzen

University of Freiburg
Social, Economic and Environmental History

◆ Prof. Anne Rasmussen

University of Strasbourg
History of Science

FRIAS ALUMNI PROGRAMME

◆ Prof. Robert Alicki

07/2017
University of Gdańsk
Physics

◆ Dr. Joonwoo Bae

08/2017 – 09/2017
Hanyang University
Physics

◆ Prof. Jeff Siegel

06/2017
University of New England
Linguistics

◆ Prof. Matthias Wächter

07/2017
Centre International de Formation Européenne (CIFE), Nice
History

◆ Prof. Mark Greengrass

06/2017 & 10/2017
University of Sheffield
History

◆ Prof. Sabine Hake

06/2017 – 07/2017
University of Texas
Cultural Studies

◆ Prof. Barbara Johnstone

12/2016
Carnegie Mellon University
Linguistics

◆ Prof. Yael Maschler

02/2017
University of Haifa
Linguistics

◆ Dr. Florian Mintert

07/2017
Imperial College London
Physics

◆ Prof. Jeff Siegel

06/2017
University of New England
Linguistics

NEWS



◆ HEINZ MAIER-LEIBNITZ-PREIS 2017 FÜR EVI ZEMANEK

FRIAS Fellow JProf. Dr. Evi Zemanek vom Deutschen Seminar der Universität Freiburg hat den Heinz Maier-Leibnitz-Preis 2017 erhalten. Der von der Deutschen Forschungsgemeinschaft (DFG) und dem Bundesministerium für Bildung und Forschung (BMBF) vergebene Preis gilt als wichtigste Auszeichnung für den wissenschaftlichen Nachwuchs in Deutschland. Unter den diesjährigen Preisträgerinnen und Preisträgern wurde Zemanek als einzige Nachwuchswissenschaftlerin der Geisteswissenschaften ausgezeichnet. Evi Zemanek ist seit 2010 Juniorprofessorin für Neuere Deutsche Literatur und Intermedialität an der Universität Freiburg. Derzeit vertritt sie eine Professur am dortigen Institut für Medienkulturwissenschaft und forscht als Fellow am FRIAS. Ausgewiesen ist sie durch ihre vielseitigen komparatistischen Arbeiten zur europäischen Literatur und ihre Intermedialitätsforschung, speziell zu Beziehungen von Literatur und Bildkunst; dazu legte sie 2010 die Dissertation „Das Gesicht im Gedicht. Studien zum Poetischen Porträt“ vor. Im Jahr 2012 warb sie das DFG-Forschungsnetzwerk „Ethik und Ästhetik in literarischen Repräsentationen ökologischer Transformationen“ ein. Dank dieser und weiterer von ihr initiierten interdisziplinärer wie internationaler Kooperationen gilt sie als eine Wegbereiterin des Ecocriticism in Deutschland. Die literarisch-künstlerische Rezeption und Popularisierung ökologischen Wissens steht im Zentrum ihrer neuesten Arbeiten, so auch der im Entstehen begriffenen Monografie „Karikaturen der Natur“ zu Reflexionen des anthropogenen Umweltwandels in deutschen Zeitschriften aus der Ära der Industrialisierung. Diese Untersuchung zur Verflechtung von Umwelt-, Diskurs- und Mediengeschichte versucht im Sinne der Environmental Humanities die geisteswissenschaftliche Forschung mit der umweltwissenschaftlichen und umwelthistorischen zu verbinden. Im Beisein der Bundesministerin für Bildung und Forschung Prof. Dr. Johanna Wanka und dem Präsidenten der Deutschen Forschungsgesellschaft und ehemaligen FRIAS Fellow Prof. Dr. Peter Strohschneider nahm Frau Zemanek den Preis in Berlin entgegen. Die Feierlichkeit anlässlich der Preisverleihung war gleichzeitig auch ein Rückblick auf 40 Jahre Heinz Maier-Leibnitz-Preis.

◆ UNDERSTANDING PLANT EVOLUTION – PUBLICATION IN NATURE COMMUNICATIONS

How did ancestral plants cope with the problem of water loss once they started spreading on land? Former FRIAS fellows Dr. Danièle Werck-Reichhart and Prof. Ralf Reski discovered a biochemical mechanism in mosses that was crucial for the evolution of complex ecosystems on land. Earlier this year, their findings have been published in the open access journal *Nature Communications* under the title “A phenol-enriched cuticle is ancestral to lignin evolution in land plants”.

Werck-Reichhart and Reski were Senior Fellows of the Freiburg-Strasbourg Joint Fellowship Programme which aims to strengthen the research cooperation between

the University of Strasbourg and the University of Freiburg. The project addresses the evolution of plant phenolic metabolism that leads to the synthesis of biopolymers. Reski and Werck-Reichhart discovered that the enzyme CYP98 from the family of cytochromes P450 has played a significant role for prehistoric plants in order to produce their outer protective layer (cuticle). They showed that preventing the synthesis of this enzyme in the moss *Physcomitrella patens* stops the development of the mosses phenol-enriched cuticle that protects plants from drying out.

Plant cuticles came into being more than 450 million years ago when the first plants started colonizing ter-

restrial habitats. Protecting plants against water loss and harmful external influences, the waxy cuticles paved the way for the evolution of the complex ecosystems we are a part of today. For it was the prehistoric land plants that increased the oxygen content of the atmosphere, creating conditions that made animal and human life on land possible.

Publication:

Renault, H. et al. A phenol-enriched cuticle is ancestral to lignin evolution in land plants. Nat. Commun. 8, 14713 doi: 10.1038/ncomms14713 (2017).



Moss cover a tree. Together with a team of international researchers Reski and Werck-Reichhart have discovered a pathway with which these plants produce their outer protective layer. Photos: Ralf Reski

◆ COOPERATION ACROSS BORDERS: THREE JOINT RESEARCH GROUPS CONNECTING THE UNIVERSITY OF FREIBURG AND THE UNIVERSITY OF STRASBOURG ARE TO BE FUNDED FROM 2017 TO 2019

The Joint Fellowship Programme Freiburg-Strasbourg enters its third round. Since 2013, seven binational research-groups from humanities, economic and natural sciences have received the Programme's support. The need to offer more opportunities for high-level exchange of European researchers coming from the two Universities, was once again underlined by the number of highly qualified applications that the jury had to choose from this year. Three projects have been selected:

MapRNA: Mapping RNA-RNA pairings in vivo in bacteria and their importance in fast acclimation processes

The first group, headed by Prof. Dr. Wolfgang Hess, Professor of Genetics and Experimental Bioinformatics at the University of Freiburg and Prof. Dr. Pascale Romby, Professor of Molecular and Cellular biology at the University of Strasbourg, will study the interactions between small non-coding ribonucleic acids (RNAs) and their targets in two different bacteria. The aim of their project is to improve algorithms that can predict RNA interactions.

Objects of study will be the bacteria *Staphylococcus aureus* and *Synechocystis 6803*. *Staphylococcus aureus* is a major human pathogen that can be found on human skin and in the human respiratory tract as well as in food and water bodies. *Synechocystis 6803* belongs to the group of freshwater cyanobacteria. It has the ability for oxygenic photosynthesis and is therefore a major model for prokaryotic photosynthetic biotechnology.

By improving the understanding

of the physiology of the two target organisms, the research team aims to improve the development for anti-microbial drug design and, at the same time, to find strategies for enhancing the yield from photobiotechnology.

Implementation of Light-Powered Nanomachines into Polymer Bulk: From Fundamentals of Active Matter to Functional, Life-Inspired Polymer Materials

The second joint research group will investigate life-like materials by combining insights from molecular machines with research efforts in material science. Prof. Dr. Andreas Walther from the Institute for Macromolecular Chemistry at the University of Freiburg will join efforts with Prof. Dr. Nicolas Guiseppone from the Institute Charles Sadron of Strasbourg.

Their goal is the development of concepts for the integration of light-driven artificial nanomachines into polymer bulk materials to create active materials. Molecular machines generate mechanical movements on a wide array. For example, on a nanoscale they generate movements from chemical fuels or light, while on the macroscopic scale they participate in the actuation of our muscles. Walther and Guiseppone hope to demonstrate that the integrated nanomachines, when fuelled by an external source of energy, show adaptive mechanical properties like damping or contracting. With these properties the materials can later be used in, for example, the field of robotics.

Linking Finance and Insurance: Theory and Applications

The third FRIAS-USIAS research group will explore problems that lie at the intersection of banking/finance and insurance. From Strasbourg Prof. Dr. Jean Berard, the director of the Mathematical Institute, and Prof. Dr. Karl-Theodor Eisele, Professor of Insurance Mathematics, will collaborate with Prof. Dr. Thorsten Schmidt, Professor of Financial Mathematics at the University of Freiburg, and his predecessor and FRIAS alumnus Prof. Dr. Ernst Eberlein.

The proposed field is of particular interest under the current market situation, as the present low interest rate environment is both a big challenge for insurance companies and a key driving factor of stock markets. This shows the high topicality of this endeavor on one side and the enormous potential for future developments on the other side.

The group will focus on hybrid derivatives. This type of derivatives appears naturally in equity-linked insurance products, variable annuities and other financial products from the area of pensions and life-insurance. By investigating the valuation and risk-management methodologies of these derivatives, the group aims to study specific problems relevant to companies and to develop tailor-made solutions.

◆ FREIBURGER HORIZONTE: DIE ASYLPOLITIK DER EU – ORGANISIERTE HEUCHELEI?



Am 26. April 2017 sprach die Schweizer Migrationsforscherin Prof. Dr. Sandra Lavenex (Universität Genf) im Rahmen der Freiburger Horizonte über die derzeitige Asylpolitik der Europäischen Union. Mit dem Format der Freiburger Horizonte bietet das FRIAS einen Rahmen, den Austausch zwischen Menschen aus Wissenschaft, Politik und Zivilgesellschaft zu stärken. Gerade in diesem Themenfeld ist ein solcher Austausch besonders wichtig.

Als Expertin in den Bereichen Migrationspolitik und internationale Beziehungen sprach Frau Lavenex über ein zentrales politisches Dilemma in der europäischen Asylpolitik, das in den letzten fünf Jahren aufgrund der Zunahme von Fluchtbewegungen immer sichtbarer wurde. Alle Mitgliedsstaaten sind durch die Genfer Flüchtlingskonvention rechtlich dazu verpflichtet, Schutzsuchende aufzunehmen und ihnen die Möglichkeit für ein Asylverfahren zu

gewähren. Welcher Mitgliedsstaat für diesen Schutzauftrag zuständig ist, regelt seit 2013 die Dubliner Verordnung als völkerrechtlicher Vertrag zwischen den Staaten der Europäischen Union. Ziel der Verordnung ist es, dass Geflüchtete nur in einem statt gleichzeitig in mehreren Mitgliedsstaaten einen Asylantrag stellen können. Grundsätzlich gilt, dass derjenige Mitgliedsstaat Asylverfahren prüft, in den die Asylsuchenden zuerst eingereist sind. Da Geflüchtete in den letzten zwei Jahren beinahe ausschließlich über Mittelmeerrouten und den Landweg durch die Türkei in die EU einreisen, sind die Ankunftslander insbesondere Italien, Spanien und Griechenland. Die Dublin-Verordnung enthält zwar die Möglichkeit eines nachträglichen Transfers der ankommenden Geflüchteten, diese Möglichkeit sei jedoch kompliziert und werde in der Praxis kaum wahrgenommen. So folgert Lavenex, dass die Dublin-Verordnung im Angesicht der zunehmenden Fluchtbewegungen aus dem globalen Süden dringend reformbedürftig ist.

Tatsächlich gab es bereits 2001 Reformanstrengungen hinsichtlich der besseren Verteilung von Geflüchteten im Binnenraum der EU: Das Ergebnis war die „Richtlinie zum vorübergehenden Schutz“, welche unter anderem einen Solidaritätsmechanismus zwischen den EU-Mitgliedsstaaten zur ausgewogenen Verteilung von Geflüchteten sowie eine Festsetzung sozialer Mindeststandards für Schutzsuchende enthält. Diese Richtlinie kam jedoch nicht zur Anwendung, da sie nicht den

notwendigen zwischenstaatlichen Konsens fand. So ist die Handhabung der Ankunft von Geflüchteten bis heute uneinheitlich hinsichtlich der Verfahrensdauer und der Anerkennungsraten in den verschiedenen EU-Ländern. Auch zeichnet sie sich durch eine Vielzahl nationaler Zugangssperren, wie bspw. neu eingeführten Grenzkontrollen aus.

Der fehlende zwischenstaatliche Konsens hinsichtlich einer Harmonisierung der europäischen Asylpolitik stehe im Gegensatz zu dem allgemeinen Schutzauftrag, den der Staatenbund grundsätzlich gegenüber Asylsuchenden hat und sei somit „organisierte Heuchelei“. Heuchelei ist dabei jedoch nicht als normativer Begriff zu verstehen, sondern verweist in der politischen Theorie auf eben jene Kluft zwischen verfassungsrechtlichem Rahmen und politischer Umsetzbarkeit.

EVENTS

	gūøllie = fish	
	Sing.	Plur.
nom.	gūøllie	gūøllieh-
gen.	gūøllie	gūølli-
acc.	gūøllieup	gūølli-
ess.	gūøllien	gūølli-
iness.	gūøllien	gūølli-
lat.	gūølliest	gūølli-
illat.	gūølläi-	gūølli-
hom.	gūølliim(a)	gūølli-

A Pite Saami noun paradigm by Israel Ruong, archived at Institutet för språk och folkminnen, Uppsala

Human Document Project 2017

August 2nd – August 4th, 2017

Organisation: Gerald Urban, Jochen Kieninger, Bilge Nur Dincer, Eva-Maria Grether, Dev Ganatra (all from University of Freiburg)

Looking back, we see that key aspects of human culture disappear in the course of time. In the past there were often so-called "dark ages" which meant a cultural break and a loss of information.

Today, in the age of alternative facts, the question arises which data are to be considered relevant for the future. If American universities dealing with climate change already bring their databases out of the country, this is a pressing problem!

The Human Document Project aims to ensure that important aspects of contemporary culture can be preserved for a very long time (one million years and longer), as current data storage options are not appropriate for a long-term or even medium-term period.

The workshop takes place at FRIAS from August 2-4, 2017 and deals with all relevant aspects of data storage: content, storage systems, technology, data carriers, protection of storage media, coding and encryption. It is a multidisciplinary project to which natural sciences, social sciences and humanities can contribute. The project will present the state of the art in long-term archiving as well as the current problems of preserving information and scientific data in archives and libraries. Perhaps the most interesting aspect is that a selection of the content to be saved must be made. This deals with the "Conditio Humana": To see who we are and what we find worth preserving for many years to come.

FRIAS Junior Researcher Conference – Beyond molecular movies: Bringing time-domain spectroscopy to diffraction imaging

September 13th – September 15th, 2017

Organisation: Lukas Bruder, Simon Dold, Aaron Laforgue (all from University of Freiburg), Takashi Ooi (Nagoya University)

A principal goal in chemistry and physics is to fully map the dynamics on electronic timescales thereby "making a molecular movie" of the chemical processes. This can be applied to a wide range of species from simple processes such as proton transfer in water (important for radical formation in atmospheric chemistry) to complex processes such as how a protein unfolds (essential in molecular biology). Spatially, one must attain subangstrom resolution in order to structurally image the molecule while controlling the various degrees of rotational and vibrational freedom. Temporally, femtosecond to subfemtosecond resolution is needed to resolve the nuclear and electronic dynamics.

To study coherent effects, amplitude and phase information of quantum states has to be retrieved of which the latter is not directly captured in diffraction imaging techniques. Thus, complementary methods with high phase sensitivity are required which are commonly developed in the ultrafast spectroscopy community. For this conference, leading scientists working in the fields of spatial and temporal imaging of molecular dynamics are invited to discuss the recent developments and possible outlooks in the field.

1st International Symposium on Catalysis for Sustainable Chemical Synthesis – Joint Symposium of FRIAS and Nagoya IRA

September 25th – September 26th, 2017

Organisation: Bernard Breit (University of Freiburg), Joshua Wilbur (University of Freiburg), Tim Feist (University of Surrey), Takashi Ooi (Nagoya University), and Flore Picard (Université Paris-Sorbonne)

The symposium focuses on catalysis for sustainable chemical synthesis and is jointly organized by FRIAS (Freiburg Institute for Advanced Studies) and Nagoya IAR (Nagoya University Institute for Advanced Research). From September 25th to September 26th the conference takes place in the lecture hall, Chemische Institute, Albertstraße 21. Chemistry in general and Organic Synthesis in particular is an enabling science, which is in many cases the basis for innovations in the chemical and pharmaceutical industry and beyond. The development of an environmentally friendly, energy saving, sustainable and cost efficient new quality of organic synthesis is more acute than ever. Catalysis in organic synthesis can be an ideal solution to the problems of chemical synthesis. Hence, the development of ever more efficient and selective catalysts and catalytic reactions for important synthetic transformations in organic synthesis is at the forefront of molecular sciences and at the heart of this symposium.

Prof. Breit (University of Freiburg) and his colleague Prof. Ooi (Nagoya University) have managed to attain numerous internationally renowned speakers. The conference is accompanied by poster presentations of junior scientists. There are no conference fees.

**SAALS 3:
3rd Saami Linguistics Symposium**

October 18th – October 20th, 2017

Organisation: Michael Rießler (University of Freiburg), Joshua Wilbur (University of Freiburg), Tim Feist (University of Surrey), and Flore Picard (Université Paris-Sorbonne)

On October 18–20 2017, the 3rd Saami Linguistics Symposium will take place. The Symposium is the continuation of a series of international symposia previously held in Tromsø in 2006 and 2009. The purpose of the symposium is to give researchers the opportunity to present current research to their peers, participate in formal and informal discussions on relevant topics, and explore potential opportunities for future collaborative work. Especially younger researchers at the Master's and Ph.D. levels are encouraged to present their work. The keynote speech will be given by Matthew Baerman (University of Surrey) and will address the topic of inflectional morphology in a cross-linguistic perspective.

The symposium is being organized by Michael Rießler (FRIAS fellow) in collaboration with the Freiburg Research Group in Saami Studies and the Foundation for Endangered Languages Regional Interest Group «Northern Eurasia». Financial and organisational support come from FRIAS, the Department for Scandinavian Studies at the University of Freiburg, and the Hermann Paul Centre for Linguistics.

RESEARCH ACROSS BORDERS

This issue of the FRIAS News offered various perspectives on the topic of mobility. Mobility is a central aspect of every researcher's life today. For these last two pages, we asked four of our fellows to share visual impressions from their field research "across borders".

People's Action on Migration, Development and Human Rights, Manila, 2008

Like the cover, this picture shows people demonstrating at the Global Forum on Migration and Development (GFMD) in Manila in 2008. It was the first time that I took part in the GFMD, a non-binding, voluntary initiative of the United Nations Member States.

It opened up various new research perspectives for me to critically assess Global Migration Governance, transnational social movements and the connection between migration and development.

Stefan Rother, FRIAS Fellow 2014/15



Gran Paradiso National Park, Italy, October 2012

The picture was taken in 2012 in the Gran Paradiso National Park in Italy, on the border to France. During my studies on Alpine mammals, I frequently crossed borders between France, Switzerland and Austria. My research subject are mountain ungulates.

Other than humans, these animals do not know about jurisdictional borders. But these borders are one of the great challenges for wildlife researchers and conservationists, as the effective management of projects and populations needs to transcend administrative boundaries.

Luca Corlatti, FRIAS Fellow 2016/17



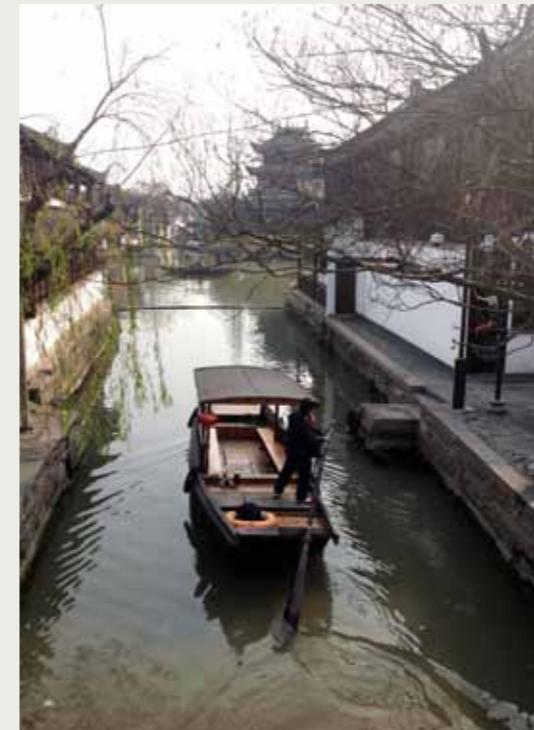
Saami in Arjeplog in Sweden, September 2009

The ten Saami languages are spoken across international borders in Norway, Sweden, Finland and Russia. Due to the small number of speakers and pressure from the respective majority populations, the languages are in danger of extinction.

This photo was taken along the Swedish-Norwegian border during the autumn reindeer round-up.

My colleague Joshua Wilbur and I are documenting several of the most endangered Saami languages by interviewing speakers and recording every-day activities and cultural events.

Michael Rießler, FRIAS Fellow 2017/18



Zhusijiao Watertown near Shanghai, February 2015

Zhusijiao has a Starbucks, dozens of souvenir shops crammed along the narrow alleys and an ancient temple occupied by very business-minded fortune tellers. Yet it also has a magic scholar's garden and traditional opera performances, the perfect place to expose oneself to modern China's contradictions. When I did fieldwork on Xi Jinping's reigning motto of the Chinese Dream in early spring 2015, Zhusijiao was livened up by teenagers on a school outing. Maybe it was their China Dream – or else their teachers?

Andrea Riemenschneider, FRIAS Fellow 2016/17

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