



Using behavioural science for human-elephant coexistence in India

The Miriam Rothschild Travel Bursary for the Exchange of Knowledge and SCCS-Cambridge internship with Professor Lucia Reisch, El-Erian Institute of Behavioural Economics and Policy, University of Cambridge, UK

by Arjun Kamdar



I did my internship with Professor Lucia Reisch of the El-Erian Institute of Behavioural Economics and Policy at the University of Cambridge – to apply behavioural science to improve human-elephant coexistence interventions in India.

We chose to focus on this aspect of applied conservation as a majority of wild Asian elephants in India reside outside protected areas and frequently interact with humans. As a result, various conservation interventions in the country aim to nudge human behaviour and improve outcomes for local communities. Behavioural science incorporates insights from economics, sociology, psychology, and anthropology to better understand and predict human behaviours in different contexts, making it an ideal tool for designing conservation interventions in the highly complex and chaotic systems we work with.

The core objectives of this internship were to:

- Develop an intervention plan for improving the maintenance of community-based human-elephant conflict mitigation interventions in northeast India
- Connect with behavioural scientists interested in conservation science

- Get exposed to methods used in on-going behavioural science studies at the EI-Erian Institute



With members and friends of the EI-Erian Institute

Developing intervention plan and feedback sessions with the EI-Erian Institute team and Cambridge University Behavioural Insights Team (CUBIT)

In order to receive feedback on our current interventions already in practice to enable people and elephants to share spaces safely in northeast India, I presented the findings of our work titled 'human-elephant conflict mitigation as a public good: what determines fence maintenance' to the team.

Here, through sociological research we had identified *what* needed to be done to stoke the maintenance of collective HEC interventions like these fences, but were finding *how* to implement it challenging. Therefore, we were looking to use behavioural insights that incorporate the heuristics, biases, and mental models that people use to frame the governance and maintenance systems for such interventions.



Presenting human-elephant conflict intervention work to the EI-Erian Institute

Feedback from the EI-Erian team was of great help – I received several great leads that could bolster this work, as well as actionable pointers. For instance, creating the ‘endowment effect’ by getting young children of the village to paint on the bamboo posts that form the HEC fence could strengthen the sense of ownership that people have for this collective good, and hence improve maintenance. To prevent a downward spiral of poor maintenance leading to lesser perceived benefits which feeds back into poor maintenance could be arrested by drawing on findings from the ‘broken window theory’ which highlights how certain cues from the landscape either encourage or discourage rule-breaking and defection. These leads are helpful not just for our specific question, but also other collective community-based interventions in practice across the country such as predator-proof livestock pens, crocodile enclosures, and bear-deterrents.

Over the course of the month, Professor Reisch's mentorship was crucial in providing feedback, insights, and guidance for navigating the field and connecting with scientists and practitioners.

Following this, I also presented to the Cambridge University Behavioural Insights Team (CUBIT), where we received more leads. Here, I got to learn more about Dr Malte Dewies' work on designing participatory nudges for public policy in Rotterdam using a set of behavioural insights flash cards. This tool seemed ideally situated for conservation practitioners - where a diverse set of stakeholders need to design and implement interventions.

Organizing a brainstorming session to design nudges for HEC mitigation interventions

To introduce behavioural scientists to conservation challenges, and conservationists to the power of behavioural tools, Dr Dewies and I hosted a brainstorming session at the Cambridge Judge Business School. Here, we invited conservationists and behavioural scientists to brainstorm ideas for human-elephant coexistence. This exercise was extremely helpful, with participants' initial apprehension turning to excitement in the engaging exercises and ideas being generated. To be part of this tactile process went miles in showing me how to structure and conduct such participatory exercises.



Interactive brainstorming session with conservationists and behavioural scientists



Join us for a **brainstorming session** on using behavioural science to **design nudges** for **human-elephant conflict mitigation** in northeast India. Free and open for all!

Moderated by Dr Malte Dewies of the EI-Erian Institute at the Cambridge Judge Business School

14:30 - 16:00 on 16th March, Thursday in room S3.04

at the Cambridge Judge Business School

No RSVP is needed. For any questions please contact:

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Developing a grant proposal for using behavioural science for driving environmental impacts in rural India

Over the course of our discussions, Professor Reisch and I saw the potential for using behavioural science to nudge environmental action and human-elephant coexistence in eco-certified tea estates (eg. Rainforest Alliance and Trustea) in northeast India. To do this we proposed creating a framework titled NOSTRIL - applying behavioural insights to drive environmental impacts.

We co-wrote a grant proposal (with Professor Harini Nagendra) to use a trans-disciplinary approach, combining ethnographic tools and ecological information to create behaviourally-informed outreach material. These are low-hanging fruit for environmental action as they are widespread, mandatory, and highly salient. We brought on board the largest tea company in northeast India and six independent tea estates who are keen to adopt our results to be used across 32,000 hectares of tea estates with over 300,000 resident humans.

Interaction with the planetLab at LSE



Visit to the planetLab at the Grantham Institute, London School of Economics

During my visit, I also visited the planetLab headed by Dr Ganga Sreedhar at the London School of Economics to understand their work and present ours. This was very fruitful, as they are starting a project using behavioural service design to understand what causes HEC-fences to succeed or fail in Gabon. This is similar to our work, viewing the question of non-maintenance from a different lens. In addition, there were common areas of interest with other projects that were underway from which I learnt about new methods revolving around social norms and collective action in conservation.

Attending seminars at different Schools at Cambridge

Being situated at Cambridge Judge Business School and in Cambridge also provided several opportunities to learn about work from different fields, and connect with other scientists – a very unique and fulfilling opportunity. For instance, I met Professor Cass Sunstein, co-author of the book ‘Nudge’, one of the most popular behavioural economics books. He spoke about the contemporary debate in the field, that of behavioural interventions at a systemic level (S-Frame) versus at an individual level (I-Frame), and more generally for climate action.



With Professor Cass Sunstein and Professor Lucia Reisch

I also attended seminars held at the management and psychology schools – on best practices to translate management studies into practice, psychological studies on how choices in complex circumstances are made and found the fundamental frameworks to be relevant to the field of ecology and applied conservation. I was also able to attend talks on interdisciplinary research at the David Attenborough Building on the Peruvian peatlands and the concept of Biodiversity Credits - which was a good primer to this upcoming system. Further, I met with Dr Gayle Burgess, an interdisciplinary conservationist with TRAFFIC, who's pioneering work on identifying the behavioural drivers of corruption in the illegal wildlife trade was very insightful.

The SCCS conference was very exciting; learning about the power of new social science tools developed to identify sensitive behaviours by Dr Freya St John's team, the work of several students covering a fascinating range of topics, and connecting with like-minded early career scientists. I was also able to meet established faculty whose work I have been following and find very exciting such as Dr Rob Fletcher, Dr Chris Sandbrook and Dr Andrew Balmford.

Outcomes

- **Intervention plan** for improving the maintenance of collective community-based interventions for human-elephant coexistence in northeast India
- **Grant proposal** to create NOSTRIL - applying behavioural insights to drive environmental impacts in biodiversity-rich tea estates of northeast India
- [Blogpost](#) on how working on behavioural ecology and behavioural economics changed my perspective
- **Connecting with** and potential collaborations with academics and conservationists

Follow-up work is planned with research and conservation organizations in India to introduce behavioural science tools for designing their interventions. We are excited to implement these tools to reduce snakebite and human-elephant conflicts by creating behaviourally-informed interventions and supporting sustainable livelihood interventions. Further research work is planned to understand human decision-making regarding conservation action in a rural and urban contexts. We are also collaborating with organizations in our current networks to stoke interdisciplinary work combining behavioural science with ecology and designing participatory nudges, through workshops and webinars that are planned for September 2023.

I thank SCCS-Cambridge and the Miriam Rothschild Travel Bursary for the Exchange of Knowledge for this wonderful opportunity that has helped me both, professionally and personally. This opportunity was extremely productive and a great learning experience for me, and has certainly moulded my career trajectory as a conservationist by exposing me to people, places, and science that I would not have had access to otherwise. I look forward to incorporating these new learnings in practice, and sharing them with colleagues and friends.