

Commentary: sustainable development as theme and platform for interdisciplinary undergraduate research

Marco J Haenssger,

Global Sustainable Development, University of Warwick, UK

Institute of Advanced Study, University of Warwick, UK

Regional Center for Social Science and Sustainable Development, Chiang Mai University, Thailand

A striking theme among the inspiring contributions in this issue of *Reinvention* is 'sustainability'. As faculty member at the Division of Global Sustainable Development (GSD) at the University of Warwick, it is indeed a moment of joy but also an opportunity for reflection as the journal hosts two new pieces from our student body: Onubha Hoque Syed writes on the global health priority of drug-resistant infections in 'Investigating the factors behind differences in "lay" and "expert" medical knowledge in the context of fever treatment in Yangon, Myanmar' (Hoque Syed, this issue), and Virginia Thomas-Pickles, University of Warwick student, reviews the book *The Uninhabitable Earth: A Story of the Future* by David Wallace-Wells (Thomas-Pickles, this issue;) alongside Valerie Kay of Monash University (Kay, this issue). Other contributions to this wonderful issue touch on the notion of 'sustainable development' as well: ecosystem dynamics in Gunung Mulu National Park in Malaysia, the consequences – intended as well as unintended – of international humanitarian responses in Haiti, and the question of how environmental sustainability manifests in higher-education structures as well as curricula.

The presence of this theme in *Reinvention* is no coincidence: Sustainable development is an interdisciplinary – sometimes transdisciplinary! – endeavour which recognises that the challenges facing our world cannot be solved with just one set of tools, nor with the narrow analytical focus often introduced by rigid disciplinary boundaries. To illustrate this point, let us consider the topics covered by the GSD student contributions in this issue. Both drug resistance and climate change are commonly framed as the next great topics that the world will have to grapple – orders of magnitude more significant than even the impact of the COVID-19 pandemic, essentially in whichever metric we wish to apply (e.g. death toll, economic losses or

Reinvention: an International Journal of Undergraduate Research 14:1 (2021) impact on social organisation of humanity). However, the scope of GSD as a transdisciplinary field – superseding the conventional boundaries of any one discipline – helps us to understand how interrelated these subjects in fact are, rather than presenting as separate development challenges.

Research and thinking about drug resistance are intuitively dominated by medical perspectives (Haenssger *et al.*, 2019) – perhaps, for many, naturally so. After all, we are talking here about illness, pharmaceuticals and how we provide health care. But very recently, a range of studies into the subject has uncovered how drug resistance is not merely a biological process (one in which microbes develop a tolerance against pharmaceuticals through evolutionary selection processes that could fundamentally undermine pillars of modern medicine). From an interdisciplinary perspective, we begin to see drug-resistant infections as a global, social and even environmental phenomenon that we can link to micro-level interactions between doctors and patients as well as to macro-level patterns of the economic organisation of societies and inequalities – and the widespread dependence on antibiotics and other 'modern' pharmaceuticals could even reinforce these inequalities (Tompson *et al.*, 2021).

Onubha Hoque Syed's work exemplifies what we can learn from taking medical science perspectives out of focus and instead consider the dynamics embedded in patient–doctor interactions (Hoque Syed: this issue). By interpreting qualitative data from Myanmar through the capability approach (Sen, 1999), we see not only heterogeneous personal priorities but also distinct forms of knowledge and sensemaking that shape how patients access and use medical treatment. If the assertion of autonomy and dignity, conflicting ways of thinking about health, and the importation of Western solutions into a new context drive the use of antibiotics (and, biologically speaking, expose microbes to more evolutionary pressure), can we still regard drug resistance as a medical topic in which seemingly needless antibiotic use is all too often framed as 'irrational' or outright 'laziness' (Littmann and Viens, 2015: 215)?

And yet, it would be similarly limiting to consider drug resistance only as a social science subject. Should we indeed regard disciplinary boundaries at all, or rather define the specific layers and threads of analysis that are important for our understanding of such global development problems? The development of drug resistance is, for instance, amplified by environmental factors. Contaminated sewage (owing to lax or non-existent regulations or perverse economic incentives) can encourage the development of drug-resistant pathogens (Boaton *et al.*, 2021). These pathogens could subsequently spread locally and across borders – perhaps even

Reinvention: an International Journal of Undergraduate Research 14:1 (2021)
entailing the next global health crisis – as we resume our pre-pandemic travel patterns or as the microbes themselves adhere to and travel with the now ubiquitous microplastic particles that have come to represent the scale of anthropogenic activity (Liu *et al.*, 2021; WWF, 2019). Likewise, the micro-level social interactions examined by Onubha Hoque Syed are partly a reflection of local cultural contexts, but they can also be driven by the stress, uncertainty, and hardship induced directly and indirectly by global climate change (Doherty and Clayton, 2011; Mushavi *et al.*, 2020). Is it, therefore, even possible to frame and study a concept such as drug resistance *solely* as a biological, medical, social or environmental phenomenon?

That these considerations are not limited or specific to drug resistance becomes clear if we shift our focus to climate change as another GSD challenge. Climate change is clearly one of the most significant issues that the world will be facing in the twenty-first century, but it is not separated from other major challenges such as global inequalities, hegemonic systems of thought or – as we have just seen – drug-resistant infections. The reviews by Virginia Thomas-Pickles and Valerie Kay (this issue) highlight not only the apocalyptic threats and kaleidoscopic uncertainties that arise from climate change and that can undermine individual and collective action, but they also illustrate powerfully that global economic organisation and geopolitical structures at the same time enable and obscure the climate-change trajectory on which we find ourselves. The corollary of these considerations is that the tools and solutions of past mono-disciplinary research are insufficient to accommodate and manage the complex interrelatedness of global development challenges that inter- and transdisciplinary perspectives bring to the fore.

But cultivating such perspectives is no mean feat. Academic reward systems often require scholars to identify in accordance with traditional disciplinary niches, and ever more competition in the academic labour market will rather drive specialisation than generalisation (Haenssger, 2020). The polarised debates and disciplinary turf wars that such specialisation entails are evident in growing references to 'epistemic trespassing' (Ballantyne, 2019) that delegitimise 'non-expert' viewpoints outside one's own area of expertise – as if knowledge were siloed and absolute. To engage in interdisciplinary conversation and nuanced analysis, we need to cultivate humility about our own partial knowledge and training, as well as openness towards the partial insights we gain from other disciplines and individuals (who also need not be academics or 'experts'). As Sinden (this issue) illustrates, universities play a central and growing role in this context by training and demonstrating sustainability – environmental or otherwise. *Reinvention*, too, asserts its critical role in this space as a

Reinvention: an International Journal of Undergraduate Research 14:1 (2021)
platform to cultivate the interdisciplinary thinking that is so vital for constructive
engagement and for solving the problems of the future.

About the author

Marco J Haenssger is Assistant Professor in Global Sustainable Development at the University of Warwick, where he teaches health and sustainable development, research methods and supervises interdisciplinary dissertation research on the undergraduate level. A social scientist by training, he works at the intersection of development, wellbeing and socio-technological change. Marco has led and implemented interdisciplinary research projects across Asia with as many as 30 international collaborators and research team members, using a wide range of research methods spanning surveys, qualitative research, policy evaluation and participatory techniques. In his recent book [*Interdisciplinary Qualitative Research In Global Development: A Concise Guide*](#), he provides concrete guidance for how newcomers can navigate the at times obscure and contentious space of academic publishing in interdisciplinary research projects.

References

- Ballantyne, N. (2019), 'Epistemic trespassing', *Mind*, 128 (510), 367–95
- Boon, R. D., A. Meeyai, N. Alhusein, H. Buller, E. Feil, H. Lambert, S. Mongkolsuk, E. Pitchforth, K. K. Reyher, W. Sakcamduang, J. Satayavivad, A. C. Singer, L. Sringeriyuang, V. Thamlikitkul, L. Vass, M. B. Avison, M. B. Avison, N. Alhusein, R. D. Boon, B. Chantong, N. Charoenlap, N. Couto, P. Dulyayangkul, M. J. Gibbon, V. C. Gould, V. Montrivade, K. Phoonsawad, N. Rangkadilok, P. Ratanakorn, K. Sirikanjana, L. Sringeriyuang, T. Suriyo, S. Suwanpakdee, V. Thamlikitkul, K. M. E. Turner, L. Vass, K. Wichuwaran and A. Wiratsudakul, A. (2021), 'One Health drivers of antibacterial resistance: Quantifying the relative impacts of human, animal and environmental use and transmission', *One Health*, 12, 100220
- Doherty, T. J., and S. Clayton, (2011), 'The psychological impacts of global climate change', *American Psychologist*, 66 (4), 265–76
- Haenssger, M. J., N. Charoenboon, G. Zanello, M. Mayxay, F. Reed-Tsochas, Y. Lubell, H. F. L. Wertheim, A. Thepkhamkong, N. Sithongdeng, N. Khamsoukthavong, C. Phanthavong, S. Boualaiseng, S. Vongsavang, K. Wibunjak, P. Chai-In, P.

- Reinvention: an International Journal of Undergraduate Research 14:1 (2021)
- Thavethanutthanawin, T. Althaus, R. C. Greer, S. Nedsuwan, T. Wangrangsimakul, D. Limmathurotsakul, E. Elliott and P. Ariana, (2019), 'Antibiotic knowledge, attitudes, and practices: New insights from cross-sectional rural health behaviour surveys in low- and middle-income Southeast Asia', *BMJ Open*, 9, e028224
- Haenssger, M. J. (2020), *Interdisciplinary Qualitative Research in Global Development: A concise guide*, Bingley: Emerald
- Hoque Syed, O. (2021), 'Investigating the factors behind differences in "lay" and "expert" medical knowledge in the context of fever treatment in Yangon, Myanmar', *Reinvention: an International Journal of Undergraduate Research*, 14 (1)
- Littmann, J. and A. M. Viens, (2015), 'The ethical significance of antimicrobial resistance', *Public Health Ethics*, 8 (3), 209–24
- Liu, Y., W. Liu, X. Yang, J. Wang, H. Lin, and Y. Yang, (2021), 'Microplastics are a hotspot for antibiotic resistance genes: Progress and perspective', *Science of The Total Environment*, 773, 145643
- Mushavi, R. C., B. F. O. Burns, B. Kakuhikire, M. Owembabazi, D. Vořechovská, A. Q. McDonough, C. E. Cooper-Vince, C. Baguma, J. D. Rasmussen, D. R. Bangsberg and A. C. Tsai, (2020), "'When you have no water, it means you have no peace": A mixed-methods, whole-population study of water insecurity and depression in rural Uganda', *Social Science & Medicine*, 245, 112561
- Sen, A. (1999), *Development as Freedom*, New York, NY: Knopf
- Sinden, C. (2021), 'Incorporating sustainability into the academic institution', *Reinvention: an International Journal of Undergraduate Research*, 14 (1)
- Thomas-Pickles, V. (2021), 'Book review: The Uninhabitable Earth: A Story of the Future', *Reinvention: an International Journal of Undergraduate Research*, 14 (1)
- Tompson, A. C., A. Kamenshchikova, A. Broom, B. Greenhough, C. F. Rodrigues, C. M. Will, C. Brives, C. Kirchhelle, C. Macduff, C. d. L. Hutchison, E. MacPherson, E. Charani, H. Lambert, I. Walker, J. Dixon, K. Klelmann, K. Chuengsatiansup, L. Denyer Willis, L. Manderson, L. Ackers, M. J. Haenssger, M. Davis, N. Brown, N. Fortané, P. Nahar, P. M. Saukko, R. Irwin, R. Kochhar, S. Sariola, S. Hinchliffe, S. Nayiga, and C. I. R. Chandler, (2021), *Addressing Antibiotic Use: Insights from social science around the world. A report collated with social scientists of the*

Antimicrobials in Society Hub, London: London School of Hygiene and Tropical Medicine

World Wide Fund WWF (2019), *No Plastic in Nature: Assessing plastic ingestion from nature to people*, Gland: World Wide Fund For Nature

To cite this paper please use the following details: Haenssgen, M.J. (2021), 'Commentary: sustainable development as theme and platform for interdisciplinary undergraduate research ', *Reinvention: an International Journal of Undergraduate Research*, Volume 14, Issue 1, <https://reinventionjournal.org/article/view/823>. Date accessed [insert date]. If you cite this article or use it in any teaching or other related activities please let us know by e-mailing us at Reinventionjournal@warwick.ac.uk.