



## International Conference

# AI: RETHINKING THE WORLD

*Within the context of recent technological advances, the notion of Artificial Intelligence has become a wide-spread vocabulary. AI's implications and applications potentially challenge established practices in how humans engage with and within their social worlds. Simultaneously, AI will offer, or already has offered, new sets of cognitive abilities that are yet to be determined and understood. The conference seeks to extensively discuss the unpredictable, unknowable and interruptive nature of AI as well as specific workings of the existing Machine Learning models, their strategic potentials, ramifications and methods of use.*

### KEYNOTE

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#### **Karamjit S. Gill**

##### *“Artificial Intelligence: Looking through the Symbiotic Lens”*

In the data driven society of the 21st Century, we are grappling with the impact of automation on the one hand, and envisioning the common-good potential of augmented AI systems on the other. We face social challenges of governance, ethics, accountability and intervention arising from the accelerated integration of powerful artificial intelligence systems into core social institutions. The automation agenda of the work place continues to happen quietly out of public view, hidden behind the public mantras of “digital society”, “human-centered A.I.” and the “Fourth Industrial Revolution”. With the exponential rise of big data flows in networked communications and their manipulating algorithms, the gaps in translation are now too vast to grasp and address, rendering us unable to engage with difference through the shadows of machine thinking. Augmentation and automation places the human in the predicament to accept the calculation of the machine without judgment. Can we re-appropriate the idea of causality that has been taken by ‘science’ and reframe it in the making of everyday judgments and decisions? How can we harness collective intelligence as a transforming tool for addressing complex social problems? Can we transcend the instrumental reason of machine thinking to mould technological futures for common good rather than turning them into a single story of ‘singularity’. The talk will draw upon various AI narratives of the relations between society and the scientific project of AI and the challenges it poses for us to come up with possible symbiotic AI futures.



*Karamjit S. Gill is Professor Emeritus, University of Brighton (UK), Founding Editor of AI&Society Journal (Springer), Visiting Professor at the universities of Wales (UK), Urbino (Italy), Waterford Institute of Technology (Ireland), Beijing Academy of Soft Technology (China), and Symbiotic Network- Delhi University and NISTADS (Delhi, India), Arizona State University and UCLA (USA). Over the years he has directed cross-cultural research networks, including EU-India cross-cultural innovation network (EU); Europe-Japan network on human-centred systems; European postgraduate and doctoral research network in human centred systems (EU), Knowledge, culture and artificial intelligence network (EU); New Technology and Adult Literacy (EU); Computer Aided Animated Arts Theatre (CAAAT) Project and the Europe-Japan human centred systems (NTT Data, Japan-1990s); Culture, Language and Artificial Intelligence (COST- EC/Sweden). He has*

*been the founding Series Editor of the Human Centred Systems Society Book Series (Springer) He is also actively involved in the Community-University Partnership in social mentoring encompassing art, music and craft therapeutic environment and co-production. At Cambridge, he is involved with the Interdisciplinary Performance Research Network, The 'Re-' Interdisciplinary Network, Cambridge Digital Humanities Network, AI Community, and Cambridge Community Arts. At the European level, he is collaborating with PROMISE.eu, a European enterprise in Compliance.*

## PANEL: AI and Society

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**Focus:** *the complexity and variety of AI societal implications ranging from security and strategic concerns to more general philosophical issues*

### **Nik Hynek** (Moderator)

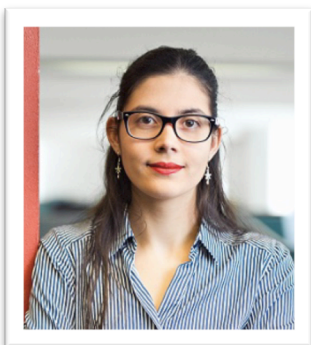


*Nik Hynek studied political science, international relations, geography, biology and psychology at the Masaryk University, the University of Plymouth, and the University of Bradford where he received his doctorate degree in Security Studies and International Politics. Currently he holds the title of Associate Professor (docent) after he received his habilitation at the Comenius University in Bratislava in Theory of Politics. Apart from the Department of Security Studies (KBS FSV UK), he also works at the Metropolitan University Prague. In the past, he also worked at the Institute of International Relations in Prague where he founded and directed a research centre on security and Comenius University in Bratislava. He was a visiting research scholar at the Saltzman Institute of War and Peace Studies at the Columbia University in New York; The London School of Economics and Political Science; Australian National University; PRIO; Carleton University in Ottawa; and Ritsumeikan University in Kyoto. Nik's articles have appeared in many top-ranked scientific journals. His last monograph was *Fringe Players and the Diplomatic Order* (Palgrave Macmillan, 2014, with Jozef Batora). Apart from working on a new monograph, he has co-edited a forthcoming book *Regulating Global Security: Insights from Conventional and Unconventional Regimes* (Palgrave Macmillan, 2019).*

### **Kanta Dihal**

*“Global AI Narratives: Understanding Intercultural Narratives on the Risks and Benefits of AI”*

Artificial intelligence is set to have an unprecedented global impact – and public perceptions will shape much of it, affecting how the technology is developed, adopted and regulated. But different cultures see AI through very different lenses: diverse religious, linguistic, philosophical, literary, and cinematic traditions have led to diverging conceptions of what intelligent machines can and should be. Many of these worldviews are currently excluded from impactful platforms and debates. This is why the Leverhulme Centre for the Future of Intelligence at the University of Cambridge set up the Global AI Narratives (GAIN) research project. This interdisciplinary research combines approaches from the humanities and social sciences (philosophy, film and literary studies, anthropology, and others) to address this lack of representation, through research on and dissemination of AI narratives around the world. In this talk, I will explain the methodologies and preliminary research outcomes of this project, and indicate its future directions.



*Kanta Dihal is a postdoctoral researcher at the Leverhulme Centre for the Future of Intelligence, University of Cambridge. She is the Principal Investigator on the Global AI Narratives project, which explores intercultural public understanding of artificial intelligence as constructed by fictional and nonfictional narratives. Kanta's work intersects the fields of science communication, literature and science, and science fiction. She is co-editor of the forthcoming collection *AI Narratives: A History of Imaginative Thinking About Intelligent Machines* (Oxford University Press, 2020) and is currently working with Dr Stephen Cave on the monograph *AI: A Mythology*.*

## Stephen J. Cowley

### *“Re-worlding Intelligence: Facing the Person Problem”*

Rather than take an axiom-based approach to theory-building, I use video data to illustrate ‘re-worlding’ or, roughly speaking, how persons gain and sustain a subjective grasp of their worlds. Once re-worlding is seen as crucial to personhood, the concept offers much to Artificial Intelligence. To reach beyond AI’s divisions, I begin with what Herbert Simon (1947) called intelligence units. Above all, experience of such domains makes re-worlding familiar: within such units, we gain skills in changing content and modes of action (both in social settings and through imagination). In time, living human beings learn to perform in such units as conscious persons. We exhibit intelligence or, in Dennett’s (1989) terms, act in ways that can be tracked by taking an intentional stance. The logic also applies to elephants. As Ross (in press) argues, to the extent that they show personhood/consciousness, this can only derive from sensitivity how anchoring wedges (AW) serve in managing/assessing social behaviour or, alternatively, how, together, they make affective use of public representations. Once elephant herds are viewed as intelligence units, with Ross (in press), elephants can qualify as non-human persons if – and only if – they show manifest awareness of AWs by indexing past experience. Of course, the same argument applies to human persons – and can be illustrated by videos of football training and/or a dyad made up of a mother and a nine month old baby. One can trace how personhood is subjectively enacted as, given embrained bodies, sensitivity to AWs is managed as persons attune to meshworks of changing social norms. In re-worlding, sensitivity to AWs is crucial to the rise of both practical and intellectual skills. Finally, I frame the case around the person problem, or “How could human bodies – and perhaps robot bodies [or, AI systems] – attune to norms and, by so doing, construct themselves into persons?” (MacDorman, 2007). Were AI workers to address such issues, I conclude, the field could gain unity and, perhaps, contribute to the well-being of those who exhibit personhood.

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*Stephen J. Cowley is Professor at the University of Southern Denmark (Slagelse Campus). His interdisciplinary work treats interaction, thinking and language as intermeshing phenomena. This view grew out of a Cambridge PhD entitled “The Place of Prosody in Italian Conversations.” This focused how attuning to voice dynamics shaped what happened next (as people enact relationships). Today, he calls this prosodic cognition. Building on acoustic analysis of sense-making, he turned to rapid aspects of encounters between adults, mother-infant interaction, human-human-robot interaction, simulated medical emergencies and experimental problem solving. This opened up a perspective on linguistic cognition that connects integrational critique of post-Saussurian work with views that trace language to the functional coordination of biological systems. Since 2005 he has coordinated a*

*grass-roots group of scholars who aim to transform the language sciences. In developing an alternative to viewing language as like the use of artificial codes, the Distributed Language Group have organized many academic conferences, workshops and special issues. On the distributed perspective, language is activity whose dynamics contribute much to human action, feeling and thought. In pursuing questions of method, Stephen has recently focused on health interaction and, specifically, learning in high fidelity medical simulations. Recently, he became secretary of the new International Society for the Study of Interactivity, Language and Cognition (ISSILC). His publications include *Distributed Language* (2011) and, to appear, a collection of papers entitled *Cognition beyond the brain: computation, interactivity and human artifice* (Co-edited with Frederic Vallee-Tourangeau)*

## Lindsey R. Sheppard

### *“AI and National Security: Competition in the Information Age”*

Artificial Intelligence (AI) has profound potential to affect the global economic and military balance of power. While AI has a long history, AI has begun to deliver noteworthy results within the last decade, particularly with the recent rapid progress in machine learning and the increased availability of data and computing power. Meanwhile, heightened international competition between states remains below the threshold of physical force in “unseen” but strategically important domains like cyberspace and the electromagnetic spectrum (EMS). While much public discourse remains to address the legal and ethical questions surrounding lethal autonomous weapons (LAWS), this area of AI enhanced systems is a small corner of the broader applicability of AI to national security. Moreover, AI remains highly problem-specific and context-dependent. This means that AI performs narrow tasks and is embedded in larger systems where its impact can be hard to see. Generally, AI will augment human operators faced with complexity and ambiguity at machine-speed. Across much of the security enterprise, rapid innovation resulting from AI and data-driven approaches offer the chance to fundamentally rethink systems, processes, and who may use them. However, nations seeking to gain advantage through AI are often hindered by an under-developed digital ecosystem – a skilled workforce and knowledgeable management; a digital capability for capturing, handling, and exploiting data; a technical foundation of trust, security, and reliability; and a policy and ethics framework – needed for AI to flourish. Simultaneously, adversaries seek to outpace their competitors by leveraging a quick cycle time to develop, procure, deploy, and continuously improve software-intensive systems. Nations must address the legal, ethical, and normative implications of AI systems while focusing research and development on critical areas: explainability and transparency in machine learning; robustness; verification and validation of both data and models; and military applications.



*Lindsey Sheppard is an associate fellow with the International Security Program at CSIS, United States, where she supports various projects in emerging technology, including artificial intelligence and machine learning, and in security applications, ranging from strategic to tactical. Ms. Sheppard contributes expertise in modeling and simulation, system architecture, electronic warfare, and radar from five years of experience in defense research and development. Before joining CSIS, she was a member of the technical staff at the Charles Stark Draper Laboratory and the Georgia Tech Research Institute, during which time she served as the systems engineering lead on multiyear efforts building simulation capabilities to evaluate technology and deployment solutions to support military operations. She holds an M.S. and a B.S. in aerospace engineering from the Georgia Institute of Technology.*

## Vít Strítecký and Petr Špelda

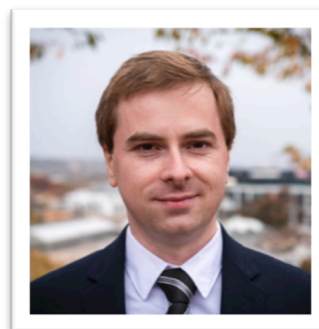
### *“Temporality and Machine Learning”*

The role of temporality remains among the forefront issues considered while we attempt to assess the future trajectory of ML (machine learning) developments, perhaps opening a venue to the eventual emergence of AI (artificial intelligence). However, consulting the existing approaches to ML/AI temporality developed in philosophy as well as particular disciplines, we’re left with an impoverished picture comprising the so-called ‘speed explosion’ and ‘singularity’. The former referring to the difference in time scales of human and individual artificial agents, the latter abducting the very same difference to buttress the notion of (temporal) singularity. Both assumptions are, however, analytically vacuous considering the ‘speed’ perspective remains divorced from representation learning, and worse still, ‘singularity’ keeps inviting fictitious concerns over the ‘End of History’. By connecting formal/statistical learning theory with the possible plurality of temporal planes, the paper offers an analytically fruitful framework. Its possible application is demonstrated by revisiting the problem of competitive co-evolution where it delivers novel insights regarding the interplay among agents occupying different temporal frames of reference. Its possible application is demonstrated by revisiting the problem of competitive co-evolution where it delivers novel insights regarding the interplay among agents occupying different temporal frames of reference.





*Vít Střítecký is an assistant professor in International Security at the Faculty of Social Sciences, Charles University in Prague. He studied Security and IR programs at the Charles University, Uppsala University, Sweden and University of St. Andrews, Scotland. In his research, he gradually focuses on the interplay between security and technology. In *Periculum*, he contributes to the cultivation of the project's research program on Artificial Intelligence (AI) which aims at synthesising machine learning with various philosophical topics. He currently works on a book looking at the AI implications for international order and together with his colleagues develops computer-assisted analyses of large data sets, mainly in the areas of propaganda or conspiracies.*



*Petr Špelda holds a Ph.D. from the Faculty of Social Sciences, Charles University. His research focuses on exploring the avenues connecting machine learning with long standing philosophical and security issues pertaining to Artificial Intelligence (AI). He is particularly interested in synthesising artificial representation learning with a range of epistemological topics comprising reliability of inductive reasoning, the nature of modal knowledge or investigations into the relation between AI and philosophy of science. He is also engaged in practical applications of machine learning methods towards analyses of security related phenomena.*

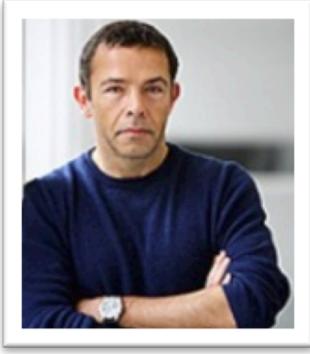
## CONVERSATIONS on AI and Anthropocene

*Focus: the application of AI as a technology of sensing through the analysis of how AI can be used to engage in a world increasingly conceived to be complex, unpredictable and unknowable*

**David Chandler** (Moderator: Conversations – PART I)

*“Technical Thought for the Anthropocene”*

AI is often understood to be the peak of humanity's hubris, the desire to replicate and magnify thought independently of its finite, fleshy and embodied container of the body. The fullest separation of the human from nature that can be imagined. The Anthropocene, the catastrophic reminder of thought's embodied being and of the dependence of thought upon matter, appears to ring the death toll for artificial intelligence and to restore natural intelligence to its original position, beyond human comprehension. For most theorists of the Anthropocene, technology is the enemy: a product of artifice and narrow instrumentality and materially destructive in the forms of extraction and pollution (Parrika's Anthrobscene). For some (Steigler's Neganthropocene) technology is neutral and can restore human capacities as well as alienating us from them (a Pharmakon). This paper seeks to experiment with seeing how technological advances of Big Data and the Internet of Things take us into the Anthropocene as a vector for posthuman becoming. AI is thus re-envisaged as accessing 'natural' intelligence rather than extending exponentially modernist forms of knowledge and control. Here, the key theorist will be Gilbert Simondon (read as the alter ego to Wired Magazine's Kevin Kelly's subject-centred understanding), who articulated technics as a posthumanist understanding of “What Technology Wants”: i.e. for us to shed hubris and instrumentality and instead to see technology as leading us back “Down to Earth” (Latour).



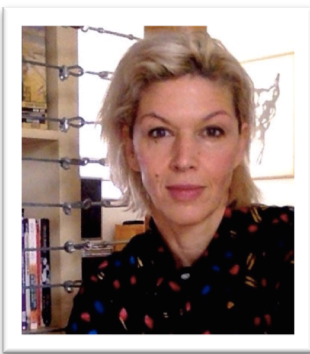
*David Chandler is Professor of International Relations at the Department of Politics and International Relations, University of Westminster. He is the founding editor of the Journal of Intervention and Statebuilding and the current editor of the journal Resilience: International Policies, Practices and Discourses. He is also the founding editor of the Routledge book series Studies in Intervention and Statebuilding and the current editor of the two Routledge book series, Studies in Resilience and Advances in Democratic Theory. Professor Chandler is the author of a number of monographs, including: Ontopolitics in the Anthropocene: An Introduction to Mapping, Sensing and Hacking (Routledge, 2018); Peacebuilding: The Twenty Years' Crisis, 1997-2017 (Palgrave, 2016); The Neoliberal Subject: Resilience, Adaptation and Vulnerability (with Julian Reid) (Rowman & Littlefield, 2015); Resilience: The Governance of Complexity (Routledge, 2014), and many others.*

*David Chandler has also contributed more than one hundred articles to international peer-reviewed journals (in the spheres of international relations, social theory, security, development, democracy, history, geography, political theory, philosophy, ethics and law).*

## **Elke Schwarz (Moderator: Conversations – PART II)**

### *“The World as Action Points: AI and the Reconfiguration of Experience”*

Decades of technological change find us enmeshed in cybernetic systems that dictate the rhythm, pace and logic of social and political life. Presently, Artificial Intelligence (AI) as a buzzword and a technological development is cast as the ultimate ‘game changer’ for economy and society; a technology of which we cannot be the master, but which nonetheless will ‘touch literally everything’. Hyperbole and narratives aside, the growing ubiquity of AI applications organises our present and future habitus in ways that render the possibility to think and act as a political being affected in perhaps unprecedented ways. Privileging speed and optimization, the AI tech hyperobject reconfigures experiential time in ways that unsettle our human relation to political temporalities, spaces, and knowledge, thus delimiting the realm for meaningful political thought and practice. This paper explores the conditions for political theory in an AI-structured Anthropocene and the possibility for political action. I argues the present idea and logic of AI as a prophetic system of social, political and economic action inevitably shrinks our human experiential world, rather than offering novel contexts for action.



*Elke Schwarz is Lecturer in Political Theory at Queen Mary University London. Her research focuses on the intersection of ethics of technology, politics and war, with an emphasis on the ethics of unmanned and autonomous / intelligent technologies. She is involved in a number of inter-disciplinary initiatives on the ethics of drone warfare and is currently working on a British Academy/Leverhulme funded project on military ethics and Artificial Intelligence. She is the author of ‘Death Machines: The Ethics of Violent Technologies’ (Manchester University Press), which investigates how technologies shape subjectivities, and, in turn, ethics. Elke is also co-convenor of the BISA working group ‘Ethics and World Politics’.*

## **Mareile Kaufmann**

### *“Drone/Body - Automated Perception and the Sensibilities of Sensing”*

At present, we are witnessing an increasing acceptance of drone deployment in emergencies: it can find victims, screen dangerous territory, direct aid, guide people out of chaotic emergency situations, and provide data for early warning systems. At the same time, drones are increasingly promoted as a tool that eventually outperforms human physical capacities: it is better suited than the human body to oversee emergency situations. These functionalities are largely discussed as intimately linked to the visual. The drone, however, offers more than new lines of sight: it hears sounds that may point to danger, it feels radiation, smells chemicals and interprets data. This talk explores these ‘better-than-body’ functions with respect to their potential to foster an argument about benevolent drone deployment in emergencies. More than that, it asks how the dynamic development of this sensing technology actually changes emergency

management altogether when it functions as a 'quasi-body'. Building on theories that acknowledge the formative power of technology, this talk fleshes out to what extent the drone's sensing capabilities influence the construction of emergency situations and the human body, thus linking artificial sensors to the 'anthropos' and the anthropocene. It describes how the drone combines electronic sensing capabilities with heightened mobility and the political economy of data collection and computation, through which it eventually contributes to the construction of what an emergency actually is.



*Mareile Kaufmann has been studying digital technologies for almost a decade. She has a background in cultural studies and criminology and is a post doc at IKRS working on the way in which digital technologies change and challenge surveillance practices. She also is a senior researcher at PRIO. She has edited special issues on Resilience and (In)security, Politics and 'the digital' and Doing and Mediating Critique and is the author of Resilience, Emergencies and the Internet: Security In Formation. Mareile heads the Critical Data Network, an initiative that seeks to understand the critical importance of digital information - from a critical perspective.*

## Rune Saugmann

### *"Machine Vision and AI: Making the World Algorithm-Ready"*

In this paper I explore debates about one of the core technologies behind the recent artificial intelligence boom, machine vision, and argue that while it plays a major role in enabling computational logics to access the social and natural world, it also carries major problems. This raises particular flags for the slippages that may occur when we seek to combine thinking about AI with debates about our being in an Anthropocene world. Machine vision may at first seem not to connect in obvious ways to the AI and the Anthropocene, but there are at least three interesting intersections. First, as a core driver of recent advances in artificial intelligence, machine vision debates can teach us about what logics and discourses lie behind the opaque moniker of AI. A 2012 breakthrough in the annual machine vision contest is one of the key events in the current boom in AI. Interestingly, it was achieved not by radically new computing logics but chiefly by cheaper hardware, it simply became easier to combine neural networks to create deep neural networks, or deep learning software, or artificial intelligence. But composition is not the only thing that AI has inherited or in common with machine vision. Anthropomorphic metaphors deployed to provide the discursive upkeep that technology is always dependent upon is another striking similarity, as scholarship on algorithmic governance and machine vision has amply pointed to. Third, machine vision is the absolutely most promising technology for recruiting the social world for computational logics. This is because as all other software seeking to intervene in the world, artificially intelligent software is dependent on the social and natural world being rendered as data and formatted in ways that make it algorithm ready. Machine vision is a technology that promises to leverage the ubiquity of digital cameras to do exactly that – categorize and inventorize any individual image and as such transform it into a database of the world as seen in that image, complete with image metadata such as date, time, location, sharing history, etc. This use, I argue, interfaces with the datafied view of social and natural relations that drive much thinking about the Anthropocene, and raises the question about whether thinking on the Anthropocene suffers from versions of the 'wishful mnemonics' that have plagued debate about new software capabilities?



*Rune Saugmann is an Academy of Finland post-doctoral researcher at Tampere University, and Docent at the University of Helsinki. His interdisciplinary research on the visual mediation of security has appeared in Security Dialogue, EJIR, Journalism Practice, European Journal of Communication, Global Discourse, JOMEC, Int'l Journal of Arts & Politics as well as numerous edited collections in IR and media studies. Rune is co-editor of Visual Security Studies (2018), the first volume dedicated to the visual study of security.*



PERICULUM is a transdisciplinary and inter-scientific collaborative research hub that brings together a collective of junior and senior researchers to cross-fertilise novel ideas regarding the present manifestations of future challenges. For more information, please, see <https://periculum.cuni.cz>.

## PROGRAMME

### AI: RETHINKING THE WORLD

09:30-10:00	Conference registration	
10:00-10:30	Opening speeches: <b>Jan Konvalinka</b> Charles University (Vice-Rector for Research) <b>Nik Hynek</b> Charles University (PERICULUM Lead Researcher) <b>David Chandler</b> University of Westminster Centre for the Study of Democracy (CSD Director) <b>Tomáš Karásek</b> Charles University (Head of Department of Security Studies)	
10:30-11:00	<u>Keynote:</u> <b>Karamjit S. Gill</b> – Professor Emeritus University of Brighton; “AI & Society: Journal of Knowledge, Culture and Communication” (Founding Editor)	
11:00-11:15	Coffee break	
<b>11:15-13:00</b>	<b>Panel Discussion: AI and Society</b>	
	<i>Moderator:</i>	<b>Nik Hynek</b> Charles University
	<i>Panelists:</i>	<b>Kanta Dihal</b> University of Cambridge; Leverhulme Centre for the Future of Intelligence (CFI)
		<b>Stephen J. Cowley</b> University of Southern Denmark; Centre for Human Interactivity (CHI)
		<b>Lindsey R. Sheppard</b> US Center for Strategic and International Studies (CSIS)
		<b>Vít Strátecký</b> <b>Petr Špelda</b> Charles University
13:00-14:00	Buffet lunch	
<b>14:00-15:15</b>	<b>Conversations on AI and Anthropocene (PART I)</b>	
	<i>Moderator:</i>	<b>David Chandler</b> University of Westminster
	<i>Discussants:</i>	<b>Mareile Kaufmann</b> University of Oslo; Peace Research Institute Oslo (PRIO)
		<b>Elke Schwarz</b> Queen Mary University of London
15:15-15:30	Coffee break	
<b>15:30-16:45</b>	<b>Conversations on AI and Anthropocene (PART II)</b>	
	<i>Moderator:</i>	<b>Elke Schwarz</b> Queen Mary University of London
	<i>Discussants:</i>	<b>David Chandler</b> University of Westminster
		<b>Rune Saugmann</b> University of Tampere; University of Helsinki
16:45-17:00	Closing of the conference	

*\*Please note: small alterations to the speakers list may be made*

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