AI Narratives and Unequal Conditions

analyzing the discourse of liminal expert voices in discursive communicative spaces

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Voice and agency have always been central to an understanding of the relationship between communication and inequality, but have taken on new urgency – and complexity – in the age of Artificial Intelligence. In their contribution to the International Panel on Social Progress, a team of leading media scholars notes that shifts in the nature and quality of governance have been catalyzed by the emergence of a networked information economy and the globalization of communication flows. They express particular concern over how the deployment of algorithms have 'ambiguous implications for corporate power and individual rights, for the public sphere and social progress' (Couldry *et al.* 2018: 6, 22). As media scholars, we share this concern, but are also curious as to how tech experts and activists understand developments in communication technology and, not least, its deployment. Do they see it as a boon or a bane?

Two fora, where such expert activists from around the world gather to discuss issues related to Internet Governance (IG), provide us a point of access to a sort of wired civil society, and a place to look for new answers to old questions about the flow of communicative power between actors on different societal levels. The annual gathering of RightsCon and Sweden's Internet Days (*Internetdagarna*) (ID), can be thought to comprise a communicative space that is both liminal and global. With the departure point that IG is as much about discourse and narrative - the way its challenges are grasped in words - as it is about technology, protocols and code, we analyze a sample of 30 expert voices from around the world to find answers to three research questions. First, what narratives about AI emerge from the discourse of these fora? Second, is a common narrative discernible, or do voices emanating from different spaces - be they professional or geographical - contribute different stories? And third, what can be learned from those differences when it comes to epistemological and empirical inequalities at the socio-technical interface? The voices are consciously selected to speak from different corners of theses communicative spaces, which are themselves characterized by diversity as well as independence from both institutions and industry.

In social science literature, liminality is often treated as synonomous with being on the margins or in the periphery. In the stories they tell, some of the speakers explain that they deviate from the mainstream ('I wasn't really fond of the sort of normal behaviours that were around me' is how one explains why the internet has always been 'a really comfortable place for me'). Seen in this way, liminality is about being in an ambiguous place: in the centre of an increasingly powerful expert community, but outside the mainstream. We use liminality in this sense of the word, but also as defined by an ordinary dictionary as 'occupying a position at, or on both sides of, a boundary or threshold'. The speakers in this study are deserving of this adjective. Many of them are difficult to categorize because they occupy several roles and move rapidly from one

position or sector to another in their professional lives - from the technical to the entrepreneurial; from policy domains to the sphere of the NGO.

We understand liminality in another sense as well, and that is in a mobile, dynamic one. The second dictionary definition of liminal is 'relating to a transitional or initial stage of a process'. It seems to be commonly understood in these fora (even though speakers do find the need to remind their audience) that societies are at a critical juncture, as AI and machine learning develop more rapidly than human responses. Their stories are full of histories that compare ancient times (i.e. the 1960s or '70s, but also the olden days of 2012) with the present, to highlight how societies find themselves in a period of transition. As one speaker put it:

> We face a choice. It's the most important choice of our time. One option is to be complacent. It can be like, let's just build machines that can do everything better than us, not worry about the consequences…On the other hand, that would be embarrassingly lame. I think we should be ambitious…and envision a truly inspiring high-tech future and figure out how to steer toward it.' (S3)

They are liminal actors in this sense because they are aware of this transition, in contrast to other social actors, who are not.

The communicative spaces

To situate this study in the larger field of IG studies, it can be said that it concerns a discursive space that both parallels and is intertwined with the acronymic landscape of IG, in which policy discussion and standard-setting fora generally have institutionalized and codified roles, outputs and tasks. The landscape that this paper concerns is dotted with similar discursive fora, but differs in that the people who populate it and speak at these gatherings have a footing in civil society through their participation in the fora themselves, where there is a more narrow focus on discourse - some of the speakers' policy-oriented professional roles notwithstanding.

In response to the unrest that followed the 2009 Iranian election, a movement was founded to rally 'digital activists and ordinary online citizens around the world, to assist political freedom movements and civil society who are being shut out from their rights to information, political expression and assembly protect digital rights' (Berkman Center 2009). Said movement morphed into the NGO known as Access Now, which fights for human rights in the digital age by combining technical support with policy engagement, and with foci that include privacy, freedom of expression, digital security and net discrimination (Access Now 2021). Part of its work involves convening such

gatherings as the annual RightsCon, first held in 2011. The summit (as it is thought of) has enjoyed exponential growth over the past decade, with meetings in Silicon Valley, Manila, Brussels, Toronto and Tunis. Forced online by the pandemic in 2020, the number of participants grew by 174% as compared with 2019. It is from RightsCon 2020, where 40.8% of its 7,828 participants from 158 countries self-identified as members of civil society, that material for this paper has been drawn.

The ID is an annual gathering hosted by The Internet Foundation (*Internetstiftelsen)*, the Swedish organization that administers the .se and .nu top domains. It has been referred to as 'a purpose-driven organization' (S2). While the Foundation is under the supervisory authority of a state authority (the Swedish Post and Telecom Authority), both it and the ID function independently. As with RightsCon, the ID developed significantly over the course of the two decades that followed its first iteration in 1999. At the outset, it was a conference for 'the industry', with a focus on the technical aspects of the internet in a relatively lawless landscape which, according to the Foundation, was of little relevance to society at large. But in 2013, the organizers decided to switch the focus of the ID from technology to ways in which the internet is actually used. This put the perspective of external actors and their particular areas of expertise on centre stage. That year, the number of participants leapt from 400 to 1500, and keynote speakers in subsequent years included such celebrities as Edward Snowden and Harper Reed. While similar to RightsCon in ways that make the two fora comparable, the civil society focus of the ID is less explicitly pronounced or statistically demonstrated, differing enough for the joint study of narratives emanating from both fora to be a significant first step in understanding AI narratives from complex expert voices on a wider scale.

Myth, narrative, socio-technico imaginaries

Whenever confronted with hype, writes Verdegem in a critical take on AI, 'it is of utmost importance to untangle what exactly is at stake and who is behind the discourses and myths created' (Verdegem 2021:1). The speakers whose talk we analyse encourage their listeners to do this - to question what could be called myths in the Barthean sense, which is common-sense understandings of the way the world works that tend to circulate unexamined because 'mythical speech' is comprised of 'material which has already been worked on so as to make it suitable for communication' (Barthes 2012/1957).

Much of the existing literature on AI narratives has a tendency to focus on those found in fiction or popular culture texts (see for example Devlin & Belton 2020, Recchia 2020, Thompson & Graham 2020, Yee 2017). While these investigations are useful in their respective fields, there is an inevitable reification of fiction narratives on AI as the

'go-to' metaphor when interrogating AI in non-fiction or 'real life' contexts. With this in mind, our use of AI narratives in the context of this study follows the perspective of Isabella Hermann. In her 2020 letter to the editor of *Nature, Machine, Intelligence*, Hermann cautions against using science fiction narratives as a reference point for understanding discourse about the ethics, opportunities and risks of AI. For Hermann, depictions of AI in fiction narratives serve to interrogate human issues using AI as a metaphor, which detracts from contemporary and more empirically-grounded AI questions. 'These questions have nothing to do with humanoid robots or conscious machines', she writes, 'but with the implementation of ethical values such as fairness, accountability, privacy and transparency' (Hermann 2020: 654). The AI narratives in focus in this paper do not originate in the realm of fiction, but in the realm of quotidian socio-technical realities and imaginaries of stakeholders across different groups, cultures and geographies.

But what do those narratives look like, and how might they be analysed? In the introduction to their monograph on imagining AI (albeit including the fictional sense), Cave, Dihal and Dillon (2020) see AI narratives as fundamental fuel inherent to the construction of socio-technical imaginaries — positioning past and future-thinking narratives about AI to inform contemporary thinking on the subject. More specifically, the authors posit that, "Narratives of intelligent machines matter because they form the backdrop against which AI systems are being developed, and against which these developments are interpreted and assessed" (Cave et. al 2020: 7). In the context of non-fiction narratives, narratives of intelligent machines form the backdrop against which AI systems can be understood by a broader audience, and provide a civil society, practitioner-based understanding of how AI, AI-engaged civil society actors, actors and institutions with hegemonic power, and ordinary technology users, intersect.

Considering socio-technical imaginaries, the idea of imagining should not be confused with futurist writings on artificial intelligence. Rather, as Jasanoff & Kim (2015) explain, although initially conceived as a national project — "collectively imagined forms of social life and social order reflected in the design and fulfilment of nation-specific scientific and/or technological objects" — the definition of socio-technical imaginaries has been broadened beyond the limits of the nation state, with the possibility for socio-technical imaginaries to be articulated and propagated by other organised groups like corporations, social movements and other professional societies, "to do justice to the myriad ways in which scientific and technological visions enter into the assemblages of materiality, meaning, and morality that constitute robust forms of social life" (4). Examining narratives constructed on the basis of these visions, emanating from actors engaged with different aspects of their respective materialisations, AI narratives emerge as a unit to be sought out in the textual materials being studied here.

On top of visions, AI narratives are used by powerful actors to generate specific understandings of AI implementation, both close to and far away from the empirical realities of technological deployment. Blending fiction and non-fiction AI narratives, Cave et al., apply this line of argumentation in both the spheres of communication technology companies and public policy. In the former, corporations like Google or Microsoft propagate specific narratives about AI to generate a specific public understanding of AI deployment, application, and the balance of its benefits and risks. Whether this is close to the empirical reality behind these narratives is not the point. Rather, our focus in analysing AI narratives is rooted in the idea that these narratives can drive public understandings of AI and thus impact decisions made by ordinary technology users using AI-fuelled technologies. In the public policy sphere, narratives can dictate the ways in which regulators decide to legislate around AI, if at all, and if so, to what extent regulation will actually impact AI deployment (Cave et al: 10).

Positioning AI narratives as fuel for social-technical imaginaries, and specifically studying AI narratives generated by and through empirical discourse or 'talk', a potential understanding of the contemporary problematics facing AI from diverse empirical perspectives can emerge. Moreover, by studying AI narratives from liminal actors in discursive communicative spaces, we are flipping the introduction to the concept as it is introduced by Cave et al. Rather than narratives generated by inherently powerful actors (i.e., communication technology companies and/or regulators), narratives from the other side of the proverbial 'aisle' will indicate how a corner of a non-state, non-corporate stakeholder group engages with AI problematics - defined as important by their own discourses and empirical understanding(s) of AI problematics. s.

In examining AI-focused outputs from RightsCon and ID, a concrete unit of analysis is needed corresponding to 'talk' from an analytical point of view. Through seeking out 'AI narratives', we gain purchase on not only the discourse of said narratives but also on the positionality of the speakers and how they in turn position the ordinary technology user in the stories they tell of AI. Rather than defining an AI narrative *a priori*, our approach is to identify them from the bottom up, by engaging with them empirically and attending to the stories that the actors in focus have to tell.

Material and method

The analysis is based on data collected from several sites: the 'AI and Algorithm' track of the digital-only iteration of RightsCon 2020 and recordings of discussions pertaining to AI from the ID of 2017-19.

Audio recordings of talk in these fora were transcribed - perhaps ironically, by algorithmic software - and the transcripts edited (i.e. corrected) by one of the authors,

who also listened to all the audio twice and conducted the interviews. The other author then parsed the transcripts using code questions derived from previous work with narrative analysis, adapted to this particular enquiry. Working together, both authors then aggregated the answers to the code questions in a typology, using a similar approach to that employed by researchers at the Institute for Strategic Dialogue in their categorization of (false) narratives about the covid-19 pandemic (Gallagher, Hart & O'Connor 2021:9; McIntyre 2021). The transcripts, as units of analysis, are treated in what follows as narratives, but are themselves replete with stories. The speakers explain and problematize by drawing on anecdotes of their own experiences, or those of colleagues. They proceed by way of exemplification and illustration, unpacking stories to show how AI and autonomous systems work, or fail to do so, what the reasons are and what the appropriate response to this is. As Rehak notes, 'the only way to discuss highly complex computer systems and their implications is by analogies, simplifications and metaphors' (Rehak 2021: 88).

Scholars from a wide spectrum of disciplines agree that narrative has the function of providing fundamental interpretive frames, helping us to organize our experiences and make the world comprehensible. Narratives not only provide us with information about the topic in question - the ones studied here are expert testimony - but also provide insights into how individuals imbue those events and actions with meaning. Collectivities and communities tell and share stories too. Cultures work 'mentally' in common, through a process of 'joint narrative accrual', according to Bruner. Continuity is provided by a 'constructed and shared social history in which we locate ourselves and our individual continuities' (Bruner 1991: 20). This means that the study of narrative is a way of gaining analytical purchase on the power dynamics that regulate understandings in society (Robertson 2010, 2017). Narrative analysis, it has been argued, enables scholars to be more aware of and responsive to the voices of the marginalized in society, which otherwise tend to be drowned out by the powerful and the mainstream (Carlisle 1994).

Narrative analysis typically distinguishes between a referential and an evaluative clause. The setting, comprised of the time, place, situation and participants or characters, is set out in the orientation, or the referential clause of the narrative, while the meaning of the action or series of events is commented on in the *evaluation*, or the 'story as told by the author'. Evaluative clauses are editorial and contain judgements. They 'have to do with why the narrator is telling the story and why the audience should listen to it' (de Fina and Johnstone 2015: 153), which is connected to the element of ethos in rhetorical analysis. Laying bare the power of a narrative often involves discerning and documenting the techniques used by the teller of a story to show how their words should be understood.

The code questions used to analyse these narratives probe both referential and the evaluative dimensions. The narratives have also been read across the two intersecting dimensions identified by Lieblich *et al.* (1998): holistic versus categorical, and content versus form. Reading along the categorical-content dimensions, categories of the broad topic of AI are defined, and separate utterances of the text are extracted, classified and gathered into these categories. This mode of reading focuses on the content of narratives as manifested in separate parts of the story, whatever of the context of the complete story. The categorical-form mode of analysis focuses on discrete stylistic or linguistic characteristics of defined units of the narrative, typically asking what kind of metaphors the narrator uses. Defined instances of this nature are collected from a text or from several texts and counted, as in the categorical-content mode of reading (Lieblich *et al.* 1998: 16-17).

Two aspects of the orientation were coded for this study: participants and setting. One set of participants was comprised of the speakers, and how they identify and position themselves. The other set was comprised of the participants in their stories. Who did the speakers distinguish as the actors involved in or impacted by AI and its governance or lack thereof, and at what level of society? The setting was operationalized as the perspective from which the story is told. Is the speaker's position that of insider, outsider, observer or other? And what is their vantage point - that of Silicon Valley/MIT, for example, or of the global south?

The next set of questions, still pertaining to the referential clause, was: what is AI, according to the speaker? And/or what is the technology or technological situation to which the speaker refers? Given our focus on 'talk', one question asked whether the speaker has anything to say about the importance of discourse and dialogue (as opposed to engineering and policymaking). Related to this is the question of whether speakers refer to popular discourse in the form of popular-cultural narratives of AI or other imaginaries, and the question of ideology and myth, in the Barthean sense of the word. Are there taken-for-granted assumptions about AI and related technologies that the speaker asks the listener to question?

With this, the analysis moves to the evaluative dimension, with narrative themes identified using two open-ended questions. What is the problem identified by the speaker? And what is the solution? In keeping with the categorical-form mode of narrative analysis and Rehak's remark above, attention was also paid, in the evaluation, to the use of figures of speech. These are often revealing when socio-techno imaginaries are in play.

The presentation of results in the next section is structured around these 'code questions'.

Orientation

Even if we pull them apart when parsing these stories, the different components of an orientation - time, place, situation and characters - often come in a single sentence, such as this:

> We're at this very interesting point where all this new technology
> that we're building is only going to make things worse and we're
> entering this new realm and I don't know what's going to happen,
> but it's up to us. (S5)

Focussing first on the characters in these stories, who is the 'us' that is referred to in the primary source material analyzed for this study? Due to space limitations, the answers to this and the other orientation questions are presented here in compressed form. As speakers often left it to the moderator to introduce them, more complete information is given in the appendix. The numbers in the appendix correspond to speakers identified in what follows simply as S5, S15, S25 and so on.

As can be seen from the appendix, the speakers include people who work in both public and private sector, in policy, academic and activist settings. There are programmers, engineers, people working for NGOs and activists, many of whom work professionally with popular communication as well as in more technical capacities. Some point out their training makes them sceptical, others that their background makes them enthusiastic. Interestingly, some of the more successful of the self-identified 'nerds', who have left their basement rooms to found enterprises and lead campaigns, are keen to emphasize their roots. 'I'm a hacker, and that really is more core identity', says one. 'For the most part, I'm a coder' (S5). Another says

> I love hearing about long histories of geeky culture because I grew
> up as a geek online in the early days when it was just those of us
> who were self-identified geeks, freaks and queers who were
> online. (S2)

These biographies are important for the ethos of the rhetoric, as it reminds the audience of the speaker's cultural capital - of why we should listen to their story, be it of how the internet has changed since its early days of democracy, diversity and promise, or why we should be worried about those changes.

> I came to this discussion through my own experience working at a
> computer vision company, where it was my job to create big piles
> of labelled data and feed them to the algorithms, to train them in a
> way that was responsible. And quite frankly, the experience that I
> had in watching the ways that these models fail, it guaranteed to
> me that we should never trust something as unpredictable and

unreliable as computer vision to be a sensor that gets to determine
whether somebody gets to live or die. (S14)

While many speakers, despite their origins, speak from the vantage point of the US, Europe or the 'developed world' in general (even if not all are 'a white guy from the US who looks like San Francisco', S5), other stories are told from the perspective of the Global South.

The stories told by the speakers in the sample are populated by a rich and varied cast of characters. They are, unsurprisingly, tech workers - engineers, programmers, systems architects and designers - who tend to be portrayed as cogs in the machine ('I've never met an engineer at Facebook Twitter, YouTube, who's just like, let's kill democracy' says S2). Several talk about the state, politicians and lobbyists (S5, S12, S14, S25, S26, S27) and/or the military and defence contractors (S4, S11, S12, S13, S14). Most make reference to economic actors, be they villains (Big Tech or business executives who pretend to be in favour of creative disruption, but are not really open to change 'because business as usual pleases the shareholders every three months' - S1) or role models. The latter include entrepreneurs who are 'crazy high-risk people', as S1 affectionately puts it, or a Peruvian who grew up in America, got rich, went back and started funding schools so he could get people who could work in tech, or 'visionaries' such as the leader of Google DeepMind; the inventor of Skype; Elon Musk and others 'who are not just crazy philosophers' (S3). Several tell stories involving AI researchers and other thinkers (who have tended to be 'a lot of old white guys', in the account of S4). The cast includes civil society (S16, S17, S25, S26, S27. S3 identifies the audience as people who are here 'because we're excited about the future') and, importantly, ordinary people. These who play the role of the extras in stories told by most speakers, but are occasionally cast as the main character in stories that focus on how human behaviour drives change.

What is AI?

What is the technology around which the stories revolve? Given the widespread expertise in the sample, there is a fuzziness about the key concept ('Artificial Intelligence - whatever that means', is how S6 puts it) that is perhaps surprising. This lack of clarity is something several speakers remark on and highlight as a problem. 'AI's become a little bit of a buzzword. Everybody seems to be working on it, everybody seems to be talking about it', says S10. 'But some would call it snake oil.' Another speaker notes the lack of clear definition, and that governments that implement the technology are not always talking about the same thing (S31).

Some speakers talk about AI as something good. Endless computing power and sophisticated machine learning is going to solve lots of problems, once we rethink and

overcome the biases. 'And the great news is it doesn't have to be the people who are dominating today who will lead us to the future.' (S1) Another says it accomplishes complext goals and has developed from being an academic exercise to something that can save lives (S3). Quite a few talk about it in neutral terms, for example as 'a general purpose tool that we can put into any kind of system to solve a problem' (S12) and emphasize that it is not as complicated as it's often made out to be. Rather than a mysterious technology, AI is a field, like physics (S7).

> AI is really simple, right? It's just machine learning and neural networks, which is just math. And the thing about math..is it's absolutely not new…[AI is] becoming the standard tool. It's becoming the tool, the foundation, many of our companies are building, many companies are betting on this. (S5)

But the audience can be left in little doubt that AI - whether those two letters are used to represent a technology, a field, or a societal development - is something of great importance. In some accounts, this is made explicit. AI, says S15, is a transformative force that 'has resulted in a fundamental shift around how we work, how we interact, how we transact'. For S17 it is 'the next critical frontier of the modern industrial paradigm as we know it' and will determine the future course of human development.

The problem of myth

As mentioned above, Verdegem's insistence on the importance of calling myths about AI for what they are resonates with talk in these fora. One of those myths is that AI is mystical, and concern is expressed that many people seem to think AI 'means doing magic with data' (S2). Even where there is not mystification, there is confusion: the general public seems to think AI is a specific technology - whatever 'happens to be the flavour of the day' - or confuse specific theories with multiple applications, like Big Data and Deep Learning, thinking mistakenly that they are 'the be all and end all of AI' (S7).

There are also myths to be debunked about AI and humans. One is that there is nothing humans can do that AI can't. 'If you ask Google, AI invents' (S4). A related myth is that AI is neutral and abstract, and less fallible than humans, who have prejudices. There is a 'fallacy that sees AI solely as computer science systems, where the whole discipline thinks in terms of abstraction - seeing fairness as a property of the algorithm rather than 'a property of the entire end-to-end system which is the people, the institutions, the laws, the context, the language'. (S9) Several speakers point out that people seem to think that data can speak for themselves and that technologies can make people smarter and do more ethical decision making than humans; that it is only people 'who don't

work in AI, who've never trained a model, who try to make claims like tech is neutral, or AI can be less biased than a human', as S14 puts it.

Another myth is that tech is automatically beneficial; that 'AI will solve all our problems…AI has discovered a new drug; AI can tell you what you're really feeling; AI can write amazing content' (S6). Related to this is the myth - or what S18 calls hype - that AI *has* to be used to solve the big problems. We have to 'escape these universal narratives that try to include us all in a rush into neoliberal development in which data-intensive AI solutions are the only answers to the problems are are not sure we have in the end', warns S16. In the Global South, it is governments rather than corporations that are 'pushing narratives' that need to be resisted about the necessity of AI to nation-building. 'That is a narrative that is being sold to the population. That we need AI to be able to secure our economy to be able to leap-frog kind of development challenges' (S9).

Another myth is that the regulation of AI will 'kill all the good innovation' (S6) which works in tandem with the myth that AI and related technology are neutral and not dangerous.

> There's this sort of myth of anonymity. "Oh, it's aggregated collective data."' It's possible to come up with '20 examples of how quick and easy it is to actually de-anonymise and actually re-identify people. Even with all the differential privacy and all the tools you throw at it. There are ways that's it's pretty possible to actually get very deep sensitive information out of data sets. (S8)

Most nefarious of all, perhaps, is the myth that the personal data on which AI technologies are built is a commodity to be bought and sold. This is a 'legal fiction' that disguises commercial decisions taken by Google and Facebook 'to commodify something that wasn't a commodity before.' (S21)

Identifying something as a myth means naming a problem, and some have already been alluded to above. But there are others.

Narrative themes: problems

The AI-related problems that recur in the narratives circulating in these communicative spaces are too numerous to itemize here. They have been grouped in sub-themes in Table 1 below. Some of these, however, are especially prominent or relevant to the topic of unequal conditions, and the language in which these narrative themes are expressed merits a closer look.

AI is being developed for the wrong purposes (S1, 2, 4, 11, 14)
In the early days of the internet, one speaker recalls, folks wanted to build technologies to fix things. The Silicon Valley mantra 'move fast and break things' was a proud one for many of them because

> we wanted to break things that we saw as broken. Never in our
> wildest dreams did we imagine that we were going to be breaking
> the social structures that really mattered. We didn't imagine that
> we could break democracy. We didn't imagine that we could break
> social cohesion. And yet here we are. (S2)

Another speaker describes the problem as being that AI is not being used to build things that are really useful, with a lot of venture capital going into 'bullshit innovations'. Were it not for these distractions, some big problems could be solved. 'The start-up culture is mostly slapping each other on the back, encouraging each other's reality distortion' (S1). Others call attention to the connection between defence funding and AI development, and express concern about the development whereby autonomous systems 'delegate life and death decisions to machines, programmes and algorithms', crossing ethical red lines, contravening international law designed to protect civilians, and potentially destabilizing on global security (S11). The development of killer robots means

> we will see a lot more accidents and see a lot more incidents of
> people being wrongly killed… These weapons will be not just used
> for purposes of war, but will sort of leak into domestic policing all
> over the world. Here in the US as we see the civil unrest with the
> Black Lives Matter movement, we saw for the first time ever a
> predator drone deployed over US soil. (S14)

AI was developed for the right purposes but hijacked (S5, 11, 14)
The killer robots mentioned above are in some cases developed by programmers who do not know what they are working on until too late. Technology designed for one specific use is used for something else without the knowledge of the programmers or developers' (S11). Even something that for long have been considered less scary - recommendation engines - were developed to enhance user experience but 'are leading us normal folks down a path of radicalization', according to one speaker. Work done in 'the old days' of 2012 and 2014 is something tech workers were proud of, but it was weaponized. 'We did not intend this whatsoever to happen'. The unintended consequences of 'inventions of hope' is that they have been turned against 'us'. (S5)

Tech companies/business interests are the problem (S9, 11, 12, 15, 16, 17, 19)
Big Tech is 'amassing unimaginable amounts of data, establishing control of the critical infrastructures', with the majority of the world's distributed data being held by a very few private hands. Amazon, Google and Microsoft 'will have the unbeatable advantage

in finding the next generation of AI solutions' (S17). The price on 'my data, my personal data, which has most value to myself' is set by companies that are commercializing it (S24). We need to stop 'big tech from writing a new constitution for the global economy through the WTO and other trade agreements that would allow them to rig the rules even further to accumulate even more wealth and power' (S15). If we allow everything to come into the private sphere, 'we have a different experience of the world. There's now a profit motive in our entire lived experience' (S21).

Data/AI has become a tool of political power
(S2, 5, 7, 8, 9, 11, 12, 13, 14, 17, 18, 21, 25)
States, governments, and some political forces are cast as the villains in many of these narratives, alongside those without corporate power. Algorithmic power is seen as tied to other forms of infrastructural and even coercive power (S18). In the US, lawmakers

> are old and typically white and don't know about the tech. They're also smart, so they know they don't know, which means they are going to ask for help. And I think the first person that's going to raise their hand are the lobbyists. And so that means that they're going to outsource their technology to people who have a very strong interest that they are fighting for. (S5)

There is 'a growing appetite amongst governments around the world to collect more data about where individuals are going and how they're getting there' (S25). In the Global South, rulers use nation-building narrative to justify the use of AI for surveillance and control of impoverished populations. They are 'trying to make the individual completely naked in the eyes of the government' (S8). In India, the narrative is that the personal data of citizens belongs to the state. In Africa, where there has been a 'sort of leapfrogging' in terms of technological development, 'reality is being platformized'. Governments - both domestic and foreign (in the case of China) - are using facial recognition and other technology in the interest of retaining and expanding their power and controlling populations. These developments are closely connected to the next sub-theme.

Inequality/AI exacerbates inequality
(S5, 6, 8, 9, 11, 13, 14, 15, 16, 17, 18, 20, 21, 25, 26, 27)
The relationship between AI and inequality is a problem highlighted by speaker after speaker. In the developed world, there is a growing divide between those who can afford the good things offered by AI, and those who can't.

> I think that we're going to have two worlds, people who can afford automation, like driving a Tesla or self-driving car, the fancy Volvo, et cetera, and the people who cannot. And so suddenly safety - not getting killed by the robots - becomes a luxury item. (S5)

The world is bifurcated along racial as well as economic lines. Concern is expressed by several speakers about the development of systems which will be used against marginalized communities. 'Emerging digital technologies often exacerbate and compound existing inequities, many of which exist along racial, ethnic and national origin grounds' is how one puts it (S11).

But there is also the problem of inequality in a global perspective, with technology not only being developed but regulated with the rich North and West as the point of departure, to the detriment of the Global South. There is a bundle of intersecting problems 'all connected through the pipeline of data, through the funnelling of wealth down from the higher echelons of the software community in Silicon Valley, into the Global South' (S14). AI technologies act as a key driver of 'the emergent, platform-based economic order that intensifies an already unequal and really unfair international development context' (S15).

> We have a global policy regime which 'has really impoverished
> the data capabilities of nations in the developing world through an
> unquestioned and uncritical push for free data flows… We see gig
> workers who relentlessly and endlessly serve this algorithm that
> mines data from them, gains them with rewards and punishments,
> and atomizes them so thoroughly that they can only see themselves
> as cogs in this vast machine. (S17)

In addition to inequalities between the rich and poor and between people of different colours in domestic settings, and inequalities between societies (the West and the Rest), for some speakers it comes down to a matter of a divide between global elites, and the victims worldwide - regardless of colour, gender or ethnicity - of the global financial crisis and of a new market regime built on new sources of digital data and artificial intelligence. 'Data is an intermediary step towards old fashioned wealth accumulation, accumulation that is highly unequal and often lines the pockets of foreign investors and corporations' (S18). This brings us to the important sub-theme of communication and other human rights.

Communication (and other human) rights are threatened; data ownership
(S2, 5, 7, 8, 9, 10, 11, 13, 14, 19, 21, 22, 26, 27, 28, 29)
The right to be informed, the right to inform, the right to privacy and the right to participate in public communication is enshrined at the global level by UNESCO resolutions. AI technologies are depicted in many of these narratives as giving rise to misinformation rather than information. High school students, in one example, might find themselves introduced to a notion like social justice or intersectionality, and use a search engine to figure out what it is.

> They 'throw it into YouTube - YouTube is the primary search
> engine for under-25s. What you get is these videos that are actually
> designed to push you towards a very specific agenda that suggests
> that these concepts are not part of a broader social set of issues…
> they are something that is meant to oppress you in different ways.
> (S2)

People's data is used without their permission to weaponize social media and feed them misleading information (S5). Journalism and freedom of information are imperilled (S8). AI is implicated in what one speaker refers to as 'information disorder' and identified as 'one of the most serious existential risks that we're facing in the AI era'. It sets the mindset for entire countries and creates both local and geopolitical polarization.

> One of the biggest challenges that we're tackling today is the
> effect of the amplification of AI. The exponential amplification of
> information circulation and ranking, prioritisation, and the way
> that is preying upon humans' unconscious…Information disorder
> is preying upon the fact that triggering [the hundreds of biases that
> are unconscious to us] is extremely profitable for the corporation
> and also for the politicians. (S7)

When it comes to the right to privacy, the state is using AI tech for surveillance purposes, 'to make the citizen as visible as possible' in places like India (S9). Personal data are being used by police and the military with 'obvious implications on the right to life, on the right to peaceful assembly, the rights to privacy, the rights to non-discrimination' (S11). AI-related technologies like computer vision computer are about mass surveillance, the consequence of which is a 'disproportionate violation of rights. Disproportionate surveillance of underrepresented marginalized communities - the African-American community, the Muslim community here in the United States as well' (S14).

At the heart of the rights discussion is the question of data ownership. While the consensus in these communicative spaces is that data should not be owned by the state or by corporations, there is less agreement as to whether it should be considered the property of the individual or whether it is a collective good. A fault line is discernible between Western conceptions of property rights and the view from the Global South, but the discussion is too nuanced and too interesting to be compressed into this presentation of results, and must be explored in another paper.

Table 1. Narrative themes: problems distributed according to speaker/concept category.

AI developers	AI technology	private sector actors	state actors	tech actors general	epistem-ology	media actors	inequal-ities
AI is developed for the wrong purposes	AI is developed for the wrong purposes						
AI (and suchlike) was developed for the right purposes but hijacked	AI (and suchlike) was developed for the right purposes but hijacked						
	The technology itself is a problem						
AI is opaque/the black box thing/lack of transparency	AI is opaque/the black box thing/lack of transparency	AI is opaque/the black box thing/lack of transparency					
Data/AI has become a tool of power	Data/AI has become a tool of power	Data/AI has become a tool of power	Data/AI has become a tool of power				Data/AI has become a tool of power
	Algorithmic systems have built-in biases						Algorithmic systems have built-in biases
Lack of/slow regulation			Lack of/slow regulation				
Lack of vision/lack of a plan					Lack of vision/lack of a plan		
		Tech companies/business interests are the problem		Tech companies/business interests are the problem			Tech companies/business interests are the problem
						the media are the problem	
			Different priorities in developed world & Global South				Different priorities in developed world & Global South
Com. rights threatened/violated	Com. rights threatened/violated		Com. rights threatened/violated			Com. rights threatened/violated	Com. rights threatened/violated
	thought-based problems				thought-based problems		
It's complicated	Inequality/AI exacerbates inequality		Inequality/AI exacerbates inequality				Inequality/AI exacerbates inequality

Narrative themes: solutions

The other overarching narrative theme relates to solutions that emerge from these AI narratives - the question of 'what can be done to preserve that space where people are able to push back against some of the excesses that we're seeing' as S10 put it. Here too, a number of sub-themes can be discerned, as can be seen from Table 2.

Perhaps unsurprisingly, given the prominence of the sub-themes of inequality and rights under the heading of problems, solutions relating to regulation, data ownership and the retention of human control over autonomous systems account for the lion's share of solutions in this discourse (S12, S13, S14, S16, S19, S20, S21, S22). There are calls to regulate the entire life-cycle of AI systems in the same way that food and drugs are regulated (S12), to agree on rules and frameworks 'that firmly put ownership of data into people's hands' and create 'a common space regime where you regulate access to data' (S18); rules that ensure everyone 'can enjoy all of the benefits that AI stands to bring to the world' (S14). What is needed are

> policies and processes in place that allow civil society to intervene,
> whether it's about framing rules about personal protection, whether
> it's about getting to the sensitive issues. (S17)

But the emphasis is as much - if not more so - on the raising of consciousness and knowledge levels; on the development and maintenance of the sort of socio-techno imaginaries and mindsets that are a precondition for a more just and equitable order, in which communication rights are respected and safeguarded and inequities are dismantled rather than exacerbated. There are calls for 'fresh' and 'different' thinking, more scientific thinking (S1, S2, S3, S4, S7, S16), and for demystification: 'busting myths and correcting misconceptions actually gives us more agency in relation to a technology that we find increasingly used in sensitive aspects of our lives' (S6). People need to become more digitally literate (S22) and to be made aware of the power grasps and political and cultural agendas in play (S2, S12, S13, S22, S24, S29). Despite the insider knowledge of disheartening developments and the problematic uses to which AI is put, there is a noteworthy thread of hope that runs through these stories, not all of which are dystopic. As one speaker put it, if we can

> think hard about what kind of future really inspires us, and think
> hard about how we can learn to steer our technology to take us in
> that direction, then I think we can look forward to an absolutely
> amazing future where the poor are richer, the rich are richer…
> everybody is better off both onEarth and maybe one day even
> elsewhere in the cosmos. (S3)

Table 2. Narrative themes: solutions distributed according to speaker/concept category.

AI developers	AI technology	private sector actors	government/ state actors	tech actors general	epistemology	media actors	inequalities
AI is the solution	AI is the solution	Innovation/new/ fresh thinking is the solution	Investing in (non-tech) infrastructures is the solution	Innovation/new/ fresh thinking is the solution	Innovation/new/ fresh thinking is the solution	Safeguard digital rights	Not being preoccupied with profit
Innovation/new/ fresh thinking is the solution	Innovation/new/ fresh thinking is the solution	Investing in (non-tech) infrastructures is the solution	Rethink organizations/ distribution of responsibilities	Rethink organizations/ distribution of responsibilities	Demystification is the solution		Fix society
Not being preoccupied with profit	Fix society	Rethink organizations/ distribution of responsibilities	Not being preoccupied with profit	Not being preoccupied with profit	Consciousness-raising		Investing in (non-tech) infrastructures is the solution
Rethink organizations/ distribution of responsibilities	Diversity	Not being preoccupied with profit	Fix society	Fix society			Diversity
Fix society	Safeguard digital rights	Diversity	Diversity	Be in touch with ordinary people/ get out of the tech bubble			Ethics & values
Diversity	Understand that it is a field that needs to be governed, not specific applications	Safeguard digital rights	Consciousness raising				AI is the solution
Be in touch with ordinary people/ get out of the tech bubble							
Safeguard digital rights							

Figures of speech

Overwhelmingly, the people in these communicative spaces spoke of building things - specifically, in the technological sense, but also metaphorically, with references to building shared futures, shared imaginaries, and shared worlds. As S4 put it,

> Architecture is about building worlds. Design is about building
> worlds. AI is about building worlds.

There were multiple references to breaking things as well, although this was more a thing of the past (when it was thought good) than the present (where the realization is that it is problematic). References to pirates and other rule-breakers also recurred. Related to this was the antithetical reference to knitting as opposed to cutting.

> There are all sorts of ways in which you can strategically re-knit a
> network. But what we're seeing right now is people are learning
> how to cut a network. They're learning how to polarize. They're
> making certain that the bridging connections between people with
> different values and ideas aren't actually enabled. (S2)

The problem of polarization and divides is also illustrated by the metaphor of building a 'walled garden' by owning your own data.

Another metaphor is that of the race - be it that of wisdom (which needs to be won) or folly. Business executives are depicted in one story as 'kind of walking off the cliff, like Wile E. Coyote, who's been chased by Roadrunner, you know, he keeps walking for a bit and eventually gravity takes over' (S1). There are allusions to 'all the king's data', that can't put broken things back together, to cogs in the machine, to devil's brews and, of course, to the genie having been let out of the bottle.

> It's a lot like the genie in those stories there's always some
> elaborate wish that kills or hurts the person that wished for it. I
> think AI is just like that genie, meaning that AI does exactly what
> we tell it, and I don't think we're prepared for that power. (S5)

Conclusion

We set out to analyze AI narratives emanating from a liminal communicative space that can be thought to represent, if not civil society writ large, then a sort of neo-Habermasian public sphere in between the spheres of the powerful (those who rule over the realms of global tech businesses must be added here to those who rule over states) and the private spheres of the citizen (or consumer, or internet-user, or member of society). The extent to which the realm of the private has been colonized by the realm of the powerful is a recurrent theme in the narratives. We undertook this foray because we are interested in gaining a better understanding of the communicative dimensions of inequality, which in the digital age has led us to the discourse on 'AI' - the scare quotes signalling that these two letters signify both a technological development that is understood in different ways by different actors, and a more general reference to how autonomous systems and machine learning are impacting both on how humans communicate with each other and how that behaviour is being commodified in ways that impact on our communication rights.

In analysing the talk that emerged in the liminal space of RightsCon and the Internet Days, we sought the answers to three broad questions. The first is what narratives, of relevance to internet governance, emerged from the discourse that we mapped. The second was whether a common narrative is discernible. We expected, when we set out, that 'insiders' (be they on the inside because of their technical expertise or because they wield influence) might have a different take on these issues than those speaking for the marginalized - that the view from Silicon Valley was liable to be different from the vantage point of the Global South. But would those differences turn out to be variations on the same theme, or different stories altogether? And finally, what can be learned from those differences when it comes to epistemological and empirical inequalities at the socio-technical interface?

Oliveira (2017) provides us with an apt way to start making sense of the view on AI communicated by the voices analyzed here, and how we can begin answering our research questions. Crisis points 'in which it becomes impossible to imagine any truth or meaning to history' can, he writes, 'be understood as a recurrent phenomenon, as a part of the unfolding of history itself". By listening to this wide array of voices across occupational, political, geographical and social spectra, we find a dazzling number of crisis points or problems in both fora. Most notably, given that the voices audible here were listened to with special interest because of their connection to AI, and inequality was a recurrent and strong theme across both fora and the aforementioned spectra, recognition of the relationship between AI and inequality characterizes how AI is being spoken about by this group of actors.

However, as Oliveira reminds us, crisis points are not new. Moreover, through analysis of how this group of actors conceptualizes, understands, and explains AI, an equally dazzling number of solutions to contemporary problematics emerge.

To answer our research questions, a concrete word should first be devoted to what this analysis does **not** tell us. Rather than being a representative study, this analysis is a first step into a discursive world characterised by (some dichotomous) dialectical relationships in one liminal corner of the socio-technical worlds that speakers operate in and move between. This typology was not generated as a starting point for a new field of research, but rather, it acts as a way to stop and take stock of what Oliveira calls 'the unfolding of history' as it relates to AI. In the context of emergent technologies, the process of unfolding is sped up to match the constant and omnipresent deployment of new technological advancements.

The viewpoints identified in these narratives should not be understood as the perspective of technologically-concerned individuals or groups writ large. Instead, this analysis demonstrates that complex narratives of socio-technical systems highlighting the inequalities related to AI are not only being told, but are listened to by actors with the same diversity of affiliations as those actors who *provide* us with these narratives. Borders are blurred for actors in both fora, and across those borders the speakers studied here provide us with narratives of AI as both generative of inequality *and* as a tool for righting the current wrongs in socio-technical systems.

Further quantitative and qualitative study is required to understand what the significance of fora like RightsCon or Internetdagarna within the wider ecosystem of similar fora. By bringing forward a typology of how AI is discussed, and highlighting who is attributed with the responsibility both for causing problems and deploying potential solutions, we gain insight into how this group of liminal actors understand their, and others' socio-technical worlds.

To approach our first research question, the narratives that emerge across both fora are critical in nature. Critical, here, describes narratives that take multiple perspectives and understandings into account. Rather than bowing to political or social pressures to continue down the road of unfettered technological development or deployment, and rather than bowing the the apocalyptic AI narrative that much popular culture tends to produce — the liminality and diversity of these actors when analysed as a group demonstrates an interesting and noteworthy 'middle ground'. The narratives identified attribute responsibility not only for who or what is at the root of the identified problems (see Table 1) but also for who or what might bring about solutions. It is not only actors attributed with responsibility, but concepts and things such as the technology itself, or epistemology — differing the content of these narratives from much popular culture representation of AI.

The focus on and understanding of inequality as related to AI is well-researched, as seen in the literature cited here. An empirically-grounded understanding of how liminal actors speak about that relationship where there are clearly problems rooted in diverse forms of inequality. Inequality across geographies, social classes, and across levels of power - similar on a macro plane, with differences dependent on context.

Turning to the second and third research questions, however, we cannot claim that these actors are all on the same harmonious macro-level page. For example, while some speakers see individual data ownership as a solution to the current inequalities faced by technology users, others see individualistic understandings of data ownership at the very heart of why inequalities exist and continue to be perpetuated. While some speakers firmly root themselves in the realities of the politics of the United States or of India, others approach the problems they identify through a global lens.

Despite critical thought and nuanced understanding of a wide range of socio-technical realities, this analysis indicates that there are both variations on the same theme **and** differences in how the speakers understand problems and solutions across both fora. From a comparative point of view, narratives from both fora come together under the umbrella of AI, and problems and solutions are attributed to specific actors and concepts. Criticality of one's socio-technical reality does not mean that one can escape from it. For example, who the 'AI-Developers', or 'Government Actors' are according to one speaker differs from the perspective of another speaker — often depending on the socio-political context the speaker finds themselves within. However, both speakers might attribute a problem, or a solution to the 'AI-Developer' or 'Government Actor'.

It is by conducting this preliminary research into how AI is discussed by liminal actors using a wider sample and *across* different fora that we can begin to understand not only the complexity of the problems at hand, but who these actors see as responsible for generative positive change for the future. The 'problematic person/concept' in each of the problematics according to the speakers, differs from case-to-case, and it is by generating this non-generalisable typology that we can begin to more clearly see how liminal expert actors concerned with AI understand their world(s). Inequality abounds in AI-related issues and contexts, but the voices analysed here show us that 'not all is lost'. The 'Age of Anxiety', when listening to these actors, is characterised by that same level of awareness, but adds by a number of ways forward and concrete actions to be taken as related to actors, concepts and things. In short, it all depends where one finds themselves.

Many of the solutions identified point to an ideal of collective problem-solving. That is we cannot ignore our immediate socio-technical context, as it is inescapable. But, by thinking collectively, or on a global level, there are solutions that may be applicable (relatively) across the board. Actors and concepts are context-dependent, but in the

context of this study the same themes arise out of these differences examining the narratives through a wider lens.

With this preliminary analysis, avenues for further research include a more in-depth and broader analysis of similar fora, a more focused study on one aspect of the problems and solutions brought up here, or a new and improved way to understand the blurring borders and rich discussions that these actors present to the world. As mentioned, crisis points are not new. In a fast-paced, oft-misunderstood, and complex field such as AI, stopping to remind ourselves what is being talked about and how, is one small way to start grasping the socio-technical reality we find ourselves within, and what might happen next.

Appendix: Speakers

Categories per speaker:

(1) *where* they work (continent or global)

(2) type of profession [A] Media, [B] Academy, [C] NGO, [D] Government/Policy affiliation [E] Activist [F] Expert (Organisation), [G] Private Sector

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1. Speaker 1 - Europe, [A][F][G]
2. Speaker 2 - North America, [G][F][C][B]
3. Speaker 3, Europe & North America, [B][F]
4. Speaker 4, North America [G]
5. Speaker 5, North America, [F] [G] [D]
6. Speaker 6, Europe, [C]
7. Speaker 7, Asia, [B]
8. Speaker 8, Asia, [F][C]
9. Speaker 9, Asia, [F][C]
10. Speaker 10, Europe, [F][C][B]
11. Speaker 11, Global, [F][C]
12. Speaker 12, South America [B]
13. Speaker 13, Global, [B][F]
14. Speaker 14, North America[C][F][G]
15. Speaker 15, Global, [C][E]
16. Speaker 16, South America [C][F]
17. Speaker 17, Asia, [C][F]
18. Speaker 18, Europe, [B]
19. Speaker 19, Europe, [C][F]
20. Speaker 20, Global, [C][F]
21. Speaker 21, North America[B][C][F][G]
22. Speaker 22, North America, [E][F]
23. Speaker 23, Africa, [D][F]
24. Speaker 24, Asia, [E][F]
25. Speaker 25, North America, [G]
26. Speaker 26, South America, [G]
27. Speaker 27, North America, [C][E][F]
28. Speaker 28 , North America, [B]
29. Speaker 29, North America[C][D]
30. Speaker 30, Europe (failed to connect) [B]

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