

Frankenstein's Problem

Lucy Suchman¹

¹ Lancaster University, UK

Abstract. This text is based on an invited address presented at IFIP 8.2 'Living with Monsters' in San Francisco, CA, 11 December 2018. Taking the 200th anniversary of Mary Wollstonecraft Shelley's *Frankenstein* as a starting place, I explore questions of autonomy and control with respect to human/technology relations. I consider the ambivalence of these agencies, and recent initiatives in science and technology studies and related fields to reconceptualize the problem as matters of relation and care. While embracing this turn, I reflect as well upon the ambivalences of relation and care, and the need to address the resilient politics of alterity in our figurations (and celebrations) of the monstrous.

Keywords: Technological Autonomy, Control, Care.

Thinking with Monsters

Dirk S. Hovorka¹ and Sandra Peter¹

¹ University of Sydney, Sydney, AU

Abstract. Optimistic instrumentalism dominates the narratives and discourse(s) that attend recent technology advances. Most future-studies methods in current use depend on projecting properties, processes, facts or conditions of the present into the future. Absent is substantive engagement with the human condition and day-to-day life such technological futures entail. To critique the dominant discourse on future worlds, we offer *thinking with monsters* to disclose ‘living-with-technologies’ and the social, political, and economic alternatives to the optimism that pervades our rational instrumentalism. We argue that shifting the focus away from facts and towards *matters of concern* engenders a critical voice that enables participation in research that produces the (future) worlds that we seek to explain and understand.

Keywords: Future(s), Monsters, Socio-technical, Matters of Concern.

A bestiary of digital monsters

Rachel Douglas-Jones¹, John Mark Burnett, Marisa Cohn, Christopher Gad, Michael Hockenhull, Bastian Jørgensen, James Maguire, Mace Ojala, Brit Ross Winthereik

¹ IT University of Copenhagen, Rued Langaards Vej 7, 2300, Copenhagen, Denmark

Abstract. This article puts forward a bestiary of digital monsters. By bringing into dialogue scholarship in monster theory with that in science and technology studies, we develop the idea of the bestiary as a way of exploring sites where digital monsters are made. We discuss the role of bestiaries in narrating anxieties about the present. We proceed to populate our bestiary with various sociotechnical ‘beasts’ arising in collaborative research project on new data relations in Denmark. The paper argues for the place of the ever-incomplete bestiary in understanding digital monsters, for the bestiary’s role as gathering point within our project, and for its capacities to speak beyond a single research setting. Through the bestiary, we look toward the ways we already live with monsters and to the forms of analysis available for describing the beasts in our midst.

Keywords: bestiary, digital, monster.

Monstrous images of the past: photorealism and non-photorealism in archaeological information work

Isto Huvila

Uppsala University

Abstract. We argue that archaeological visualisations of the past form together with their makers and spectators a cyborg. The aim of this article is to show how these cyborgs reside in a human-technology continuum and how the nexus of agency is shifting and can be (attempted to be) shifted from humans to technologies and back by appropriating technologies in specific ways in a social context. The findings show that a life-like photorealistic visualisation, as an example of an information technology, can be seen as monstrous if it is considered as imposed difficult to control technology that expropriates agency of human actors. In contrast, a non-photorealistic, less life-like visualisations can be seen as less monstrous because of their reminiscence of traditional illustrations and lower level of detail. Implications of the monstrosity of technologies for information work in archaeology, and for other social and technical information technologies including information systems, information services and information literacy are discussed.

Keywords: 3D, visualisation, archaeology, photorealism, non-photorealism, cyborg, hybrid agency, information work

Available to Meet: Advances in Professional Communications

Burt Swanson

UCLA

Abstract. I recount a recent professional email exchange supported by a personal assistant, which went wrong for all parties, from which I draw several lessons, identifying the problem of blinded agency in everyday digital communications, and suggesting that distinguishing between personal assistance with and without agency may be deeply problematic.

Keywords: professional communication, personal assistant, artificial intelligence

Many-eyed monsters and their lure: Surveillance, seduction, and governmentality

Shyam Krishna

Royal Holloway, University of London

Abstract. Large scale digital systems employed for national population management regularly invoke narrative of surveillance risk especially of the ‘big brother’ kind. This has been true of India’s biometric digital identity program and China’s social credit system, both of which aim for universal national coverage and the financial inclusion of large underserved population. This paper analyses both these cases beyond the view of top-down panoptic state surveillance to use ‘liquid surveillance’ as a lens. By analyzing policy and media discourses multiple aspects of a complex surveillant power emerges. Efforts of inclusion as a practice of the state’s neoliberal governmentality is seen to cast individuals as a citizen-consumer hybrid. Power is then experienced by the surveilled individuals as combination of consumerist seduction of the market and surveillant control by the state. This is supplemented by traditional synoptic media messaging and, newer, more atypical surveillance mechanisms as peer-to- peer surveillance is routinised in social interactions by the prevalent and necessary use of the surveillant technology in question.

Keywords: Liquid Surveillance, Consumerism, Seduction, Governmentality.

Monstrous ‘Matterings’ of Academic Publishers: The Story of Elsevier

Stefan Klein¹, Simeon Vidolov¹, and Ojelanki Ngwenyama²

¹University of Muenster

²Ryerson University

Abstract. In this paper we explore the ‘monstrous’ transformations of academic publishers by telling the story of Elsevier. This monstrous becoming is interweaving both publishers and researchers into a new sociomaterial configuration, which is performing and being performed by new academic practices and identities. We first offer some insights into the current state of affairs in academic publishing, and attempt to uncover the intra-relations that constitute the undergoing transformations. We then offer insights into the digital infrastructure and services of Elsevier, which build on and underpin the neo-liberal turn in universities. Finally, we describe Elsevier’s move from traditional publisher towards information analytic business, and elaborate on the ethical implications for researchers by connecting the ‘re-materializing’ to the ‘re-mattering’ of academic practices.

Algorithmic Pollution: Understanding and Responding to Negative Consequences of Algorithmic Decision-making

Olivera Marjanovic¹ Dubravka Cecez-Kecmanovic² Richard Vidgen²

¹ University of Technology Sydney, Sydney, Australia

² University of New South Wales, Sydney Australia

olivera.marjanovic@uts.edu.au

Abstract. In this paper we explore the unintended negative social consequences of algorithmic decision-making, which we define as “algorithmic pollution”. By drawing parallels with environmental pollution, we demonstrate that algorithmic pollution is already here and causing many damaging, unrecognised and yet-to-be understood consequences for individuals, communities and a wider society. Focusing on transformative services (i.e., services that transform human lives, such as social support services, healthcare, and education), we offer an innovative way of framing, exploring and theorizing algorithmic pollution in the contemporary digital environment. Using sociomateriality as a theoretical lens, we explain how this type of pollution is performed, how it is spreading and who is responsible for it. The proposed approach enables us to articulate a preliminary set of IS research challenges of particular importance to the IS community related to living with and responding to algorithmic pollution, together with an urgent call for action. Our main practical contribution comes from the parallels we draw between the environmental protection movement and the newly created sociomaterial environment that needs protecting from the spread of algorithmic pollution.

Keywords: Algorithmic Pollution, Sociomaterial Environment, Negative Consequences, Algorithmic Justice.

Quantifying quality: Towards a Post-Humanist Perspective on Sensemaking

Eric Monteiro¹, Thomas Østerlie¹, Elena Parmiggiani¹ and Marius Mikalsen²

¹ Norwegian University of Science and Technology, 7491 Trondheim, Norway

² SINTEF Digital, Postboks 4760 Torgarden, 7465 Trondheim, Norway

Abstract. Processes of quantifying the qualitative have deep historical roots that demonstrate their contested nature. The ongoing push for Big Data/data science presupposes the quantification of qualitative phenomena. We analyse an ongoing case where the core of the qualitative – judgements, assessments, sensemaking – is being challenged by quantification through Big Data/data science-inspired new digital tools. Concretely, we study how traditionally qualitative sensemaking practices of geological interpretations in commercial oil and gas exploration are challenged by efforts of quantification driven by geophysical, sensor-based measurements captured by digital tools. Drawing on Wylie’s notion of scaffolding, we outline three aspects of the performativity of scaffolding underpinning geological sensemaking: scaffolding is (i) dynamic (evolving with additional data, quality assurance, triangulation), (ii) provisional (radically changed when faced with sufficiently inconsistent data) and (iii) decentred (in and through distributed, loosely coupled networks of practices). In our analysis, the quantitative does not unilaterally replace the qualitative; there is an irreducible, reciprocal relationship. Yet, there is scope for significant changes in the role, location and sequence of tasks of quantification within the qualitative as we reflect on by way of concluding.

Keywords: Scaffolding, Performative, Post-Humanist, Sensemaking, Big Data.

Understanding the Impact of Transparency on Algorithmic Decision Making Legitimacy

David Goad and Uri Gal

Department of Business Information Systems
University of Sydney Business School, Sydney Australia

Abstract. In recent years the volume, velocity and variety of the Big Data being produced has presented several opportunities to improve all our lives. It has also generated several challenges not the least of which is humanities ability to analyze, process and take decisions on that data. Algorithmic Decision Making (ADM) represents a solution to these challenges. Whilst ADM has been around for many years, it has come under increased scrutiny in recent years because of concerns related to the increasing breadth of application and the inherent lack of Transparency in these algorithms, how they operate and how they are created. This has impacted the perceived Legitimacy of this technology which has led to government legislation to limit and regulate its use. This paper begins the process of understanding the impact of Transparency on ADM Legitimacy by breaking down Transparency in Algorithmic Decision Making into the components of Validation, Visibility and Variability and by using legitimacy theory to theorize the impact of transparency on ADM Legitimacy. A useful first step in the development of a framework is achieved by developing a series of testable propositions to be used in further proposed research regarding the impact of Transparency on ADM Legitimacy.

Keywords: ADM, Algorithmic Decision Making, Transparency, Legitimacy

Dating with Monsters: the Practices of Big Data in Healthcare

Marthe Stevens, Msc. ¹, dr. Rik Wehrens¹ & Prof. dr. Antoinette de Bont¹

¹ Department of Health Care Governance, Erasmus School of Health Policy & Management, the Netherlands

Abstract In this paper, we explore how and when a Big Data in a hospital becomes monstrous and how people deal with this monstrosity. Our case study focuses on the Big Data initiative of a psychiatric hospital department. Inspired by the anthropological approach of Douglas [1] and Latour & Woolgar [2], we followed the data scientists of the initiative for six months. During our observations, we were surprised that – in contrast to many popular debates about ethics – the initiative was greeted with much cooperation and goodwill from the hospital staff and not experienced as a gigantic monster. At the same time, the data scientists experienced more monstrosity as they tried to capture everyday care into dichotomous categories in their models. We conclude that the rise of monsters is related to the perception, knowledge and practices of those who experience monsters. The degree of experienced monstrosity depends subsequently on the domestication process of the monsters. The domestication process in our case could be improved by bringing the monsters into the open and by dating with them as both the hospital staff and the data scientists need to evaluate their perception, knowledge and practices together. Only then can the Big Data initiative in this hospital reveal its full potential and can we live with our monsters in peace.

Keywords: Big Data, data scientists, monsters, ethnography, healthcare

Algorithmic Decision-making in the US Healthcare Industry

Marco Marabelli¹, Sue Newell² & Xinru Page¹

¹Bentley University

²University of Sussex

Abstract. In this research in progress we present the initial stage of a large ethnographic study at a healthcare network in the US. Our goal is to understand how healthcare organizations in the US use algorithms to improve efficiency (cost saving) and effectiveness (quality) of healthcare. Our preliminary findings illustrate that at the national level, algorithms might be detrimental to healthcare quality because they do not consider (and differentiate) contextual issues such as social and cultural (local) settings. At the practice (hospital/physician) level, they help managing the tradeoff between following national “best practices” and accommodating needs of special patients or particular situations, because hospital-based algorithms can be over-ridden by clinicians. We conclude that, while more data needs to be collected, a responsible use of algorithms requires their constant supervision and their application with respect to specific social and cultural settings.

Keywords: algorithmic decision-making; US healthcare; Accountable Care Organizations

The Healthcare AI Juggernaut: Is PHI Data Governance Possible?

Jenifer Sunrise Winter¹ and Elizabeth Davidson¹

¹ University of Hawaii at Manoa, Honolulu HI 96822, USA

Abstract. In this commentary we draw on Giddens’s metaphor of the relentless scientific progress of modernity as a juggernaut -- a powerful and dangerous force that is difficult to steer [5, p. 151] – to focus attention on the challenges of governing the personal health information (PHI) data essential to advancing AI and machine learning in healthcare. PHI data include a broad array of data from routine transactions to novel data types such as Internet-of-Things medical devices embedded in clinical settings, daily life and even in human bodies. PHI data governance addresses privacy, security, ownership, and use and reuse of health data as well as the underlying values and interests that shape data governance structures [8]. A tacit assumption is that wide-scale sharing of health data will necessarily serve the public good. Given the economic value that may be exploited from PHI data, such assumptions are not fully warranted [6, 8]. We highlight two attributes of AI deep learning that pose novel challenges to PHI data governance: the *scale and scope of data* consumed by deep learning algorithms, and the *opacity of algorithms* in regards to how data are utilized and new data or results are produced. As deep learning algorithms become more sophisticated, PHI data sources are compiled, linked, and used to develop profiles of individuals’ behaviors and for predictive health models [1, 4, 9]. Moreover, trace data that are not specifically related to health are also collected and mined to link everyday activities to health status or behaviors[7]. Second, a lack of transparency in corporate-public data sharing arrangements in AI partnerships, and the inherent opacity of deep learning algorithms raise questions about the feasibility of effective PHI data governance. In some cases, opacity may be intentional [2] to protect corporate intellectual property, while in other cases it may be due to the complexity of AI processing. Opacity is problematic for monitoring what PHI data are used and for understanding the purposes and outcomes of data use. Moreover, PHI data governance structures are unlikely to be sufficient to control the combined momentum of AI, deep learning and aggregation of PHI. We focus on two common approaches: *preemptive privacy regulation* and *informed consent*. Effective regulation depends on clear and comprehensive articulation of regulatory requirements as well as the regulating authority’s ability to evaluate and monitor compliance. Both are made more difficult by the scale and opacity of AI. The concept of informed consent is itself challenged so that current informed consent practices will not suffice to govern PHI data utilized in AI deep learning ventures. We conclude that critical research is needed to help “envision alternative futures whose very propagation might help them be realized” [5, p. 154], and that IS scholarship can inform, and thereby help actualize, more desirable futures by illuminating the diverse interests, values, and conflicts underlying technology developments [3] arising for the AI healthcare juggernaut

Keywords: Artificial Intelligence, Personal Health Information, Data governance.

Painting a false picture in high definition: Attributing Cesarean Sections to Individual Clinicians

Kathleen Pine¹ and Melissa Mazmanian²

¹Arizona State University

²University of California at Irvine

Abstract

As pay-for- performance schemes at the macro, meso, and micro policy levels are implemented, hospitals are impacted as they attempt to both meet certain target numbers and demonstrate improvement on target quality initiatives. In maternity care, consequential rewards and sanctions are being tied to a quality measurement that calculates the rate of low-risk C-Sections being performed on first time mothers. Our multi-sited ethnographic study examines how hospitals are turning this quality measurement on individual doctors in an attempt to lower their overall C-section rate. We show how the C-section measurement functions as a blunt but effective instrument when applied to organizations as a unit of analysis, but is distorted to the point of perversion when the unit of analysis is changed to individual clinicians, calling into question how measurements can distort the very realities they are meant to reflect and the potential consequences of doing so.

“Feminized or Feminine?”
Artificial Intelligence Cyborg Feminism:
From Performativity to Existentialism and Phenomenology

Emmanuel Monod¹, Robert Davidson² and Elisabeth Joyce²

¹Shanghai SUIBE University

²City University of Hong Kong

³Edinburgh University

Abstract. This paper questions the characteristics of Artificial Intelligence (AI) cyborgs from the standpoint of existentialism, phenomenology and feminist theory. The first contribution is to show that existentialism provides concepts such as existential project that may help to cross the boundaries between humans and AI cyborgs. The second contribution is to suggest that Heidegger’s phenomenology, through the concepts of care for others also crosses these boundaries. The third contribution is to show how feminist theory helps revealing the gendered aspect of the Cartesian split, such as, in cyborg feminism, the stereotype of masculine intelligence, technology and heroism, and in regard, the representation of AI female cyborgs as less *feminine* than *feminized*. While this technological stereotype dominated female cyborgs in science fiction, the fourth contribution is to indicate that it was recently undermined in situations of singularity and apocalyptic AI such as in *Terminator: The Sarah Connor Chronicles*, where an AI cyborg appears less *feminized* than *feminine*. The fifth contribution is to show the way the concepts of existential project, being-with and care for others are enacted in *The Chronicles*, suggesting a shift from anthropology to ethics that allows the cyborg figure to dissolve further the boundaries between human beings and technology.

Keywords: cyborg, performativity, existentialism, phenomenology, feminist theory, feminization, feminine.

Living with monsters: Introducing experience to the theorizing of sociomaterial entanglement

Irina Popova¹ Chris Ivory¹ and Anette Hallin²

¹ IMPACT Research Centre, LAIBS, Anglia Ruskin University, Cambridge, UK

² School of Business, Society and Engineering, Mälardalen University, Västerås, Sweden

Abstract. In this article, we propose experience as a way to further unpack the relationship between the social and the material and as a means to conceptualize our entanglement with the sociotechnical ‘monsters’ of everyday life. Experience, we argue, integrates the cognitive and the emotional as well as the social and the material and as such brings together disparate areas of sociomaterial theorizing. We argue that the precise qualities of the relationship between the social and the material can be understood by using McCarthy and Wright's [11] interpretation of Dewey [4-6] and their development of his different elements of experience for application to technology use. This article takes the first steps in developing a research approach that operationalizes these ideas within a socio-material sensibility.

Keywords: experience, sociomateriality, entanglement

Four Perspectives to Conceptualizing Material Agency for Studying Technology in Organizations

Sarah Lebovitz¹ and Natalia Levina¹

¹New York University

Abstract. Organizational researchers studying technology face the fascinating and difficult task of theorizing about the complicated interrelation of human and technological aspects of organizing. As the number of theories and concepts describing the role technology in social processes proliferates, researchers must work to understand which theoretical lens best reflects their own philosophical stance and research interests and how it differs from other lenses. This paper compares four sociological traditions that build the foundation for modern theorizing about technology in organizations – practice theory, actor-network theory, agential realism, and critical realism-- and reviews researchers' extensions to studying technology in organizations. We seek specifically to understand which perspectives can meaningfully account for differences in technologies (e.g., hammers versus robots) without being overly deterministic about material properties. Based on our reading of the literature, we highlight analytical advantages and common criticism of each theory and suggest potential ways of cross-pollinating concepts across theoretical divides without violating onto-epistemological assumptions of each theory.

Keywords: material agency, sociomateriality, practice theory, actor-network theory, agential realism, critical realism, technology

The design and use of technical properties: illuminating the role of affect and discourse

Edouard Pignot¹ and Mark Thompson²

¹WWU Münster - Münster University

²Cambridge University

Abstract. What are the manoeuvres through which software designers seek to address resistance and persuade users to adopt their technical properties? We draw on an ethnographic work conducted within a start-up where we have traced the design of a virtual experiential environment, using game technologies, intended for geologists. In particular, we argue that existing discussions around design-use insufficiently account for the possible mediating role of affective-discursive positioning. Our study enriches existing socio-material accounts by demonstrating that in the development phase the conceptualisation and materialisation of affordances results from a 4-ways informal negotiation. Our main finding is to identify design as a tension between vanishing and foregrounding positioning. While the programmers' narrative of gamification needs to vanish, geologists foreground their own views on pedagogy.

Keywords: affordance; affect; positionality ; discourse ; gamification; design

Project Managing as Assembling Efforts: Findings from an Enterprise System Implementation Project

Yukika Awazu¹ and Sue Newell²

¹IESEG School of Management

²University of Sussex

Abstract. In this short position paper, we propose a view of ‘project managing’ as assembling efforts. Drawing on the case of an enterprise system implementation project in a global product technology company, we discuss how project management was being practiced beyond using ordinary project management tools (e.g. governance structure, the list of project members, project schedule) and without a dedicated project manager. Rather, the project was being man-aged and pushed forward by two forces (driving force and brokering force). These forces are developed and sustained by multiple actors who have limited project management roles and their efforts to leverage project meetings. Currently, we are theorizing project managing. It would be great to have valuable feedbacks from IFIP WG 8.2 scholars on this theorizing process in relation to this year’s workshop’s themes.

Keywords: Assembling, Project, Enterprise System, Meetings

The Arrival of Algorithmic Phenomena into Business Culture: Exploring the Future of Entrepreneurship and Accountability

JP Allen

University of San Francisco

Abstract. This position paper invites the reader to think of algorithms as a cultural package that is migrating from one cultural context (computer science) to another (business administration). We discuss the analytic usefulness of this position using three contemporary examples of algorithmic phenomena.

Keywords: Algorithms, Accountability, Business Model

Unsanitary Practice: What Does Programming Have to Do with Beauty?

Marina Fedorova

University of California at Irvine

Abstract: The field of technosciences has been traditionally seen as the major domain where rationality lives. From the mid-nineteenth century onward, the idea has been that in order to exercise science or produce knowledge, one had to eliminate all subjective interferences (Daston and Galison 2007). Sciences have been sanitized from any kind of irrational or subjective behavior. Computer science is not an exception to this rule. Practices of writing code have been trapped in this tradition of positivistic thinking and are often discursively rid of any messiness associated with both human or non-human forces. But if we treat technoscientific practices as rational, situated and material we see only a part of the surface of things. I argue that what often subtly evade our research attention is aesthetics. I am going to show how developers use the language of aesthetics to describe their practices. In the case of programming, the focus on beauty and ugliness of code allows us to reveal how aesthetic judgments about code can orchestrate a developers' community from a blind spot of rationality

Keywords: programming, aesthetics, developer communities

The Digital Making of Real Monsters: The Escalation Process of Online Commitment to an Antisocial Identity

Christine Abdalla Mikhaeil¹ and Richard L. Baskerville²

¹IESEG School of Management

²Georgia State University and Curtin University

Abstract. Online communities can bring many wonderful benefits. But there is a dark side to the availability of online communities. An example is the lone wolf, i.e. extremely violent acts committed by a single individual who emanates from a community on the dark side. The purpose of this paper is to explain the process by which digital communities spawn the lone wolf. The process involves the escalation of individual's identification with traits that are antisocial. This research aims at providing an elaborated explanation of the mechanisms that lead single individuals to act violently offline. We argue that in the highly specialized online interactions context, self-presentation motives are underexplored in escalating commitment situations. This theory has the power to explain why individuals keep acting towards questionable endeavors.

Keywords: escalation of commitment; social identity; online communities; process explanation

A (Not-Just-Virtual) Space of Our Own: Exploring the Sociomaterial Constitution of a ‘Space of Resistance’ through Facebook

Mahya Ostovar

ESSEC Business School

Abstract. Virtual spaces are growing in prominence; in such a way that nowadays most aspects of our lives are entangled with an online dimension. Resistances also happen in the entangled online/offline world. The emergence and diffusion of online activism and the use of different types of social media in social movements (such as the Arab Spring) indicate this. But, as Ingold (2000) argues, we must not forget that these spaces are not given themselves; rather they are constituted through practices of people ‘dwelling’ therein. In this paper, I study a Facebook page, ‘My Stealthy Freedom’ (MySF), where Iranian women publish their hijabless photos in Iran’s public place to protest against the compulsory wearing of the hijab. Using a sociomaterial lens (Orlikowski 2007; Orlikowski and Scott 2008) and Ingold’s ‘dwelling perspective’ as my theoretical framework, I investigate: how do Iranian women constitute a space of resistance through their sociomaterial practices of everyday resistance to the compulsory hijab?

Keywords: Social media, Sociomateriality, Everyday resistance, Space

Temporality and sociomaterial assemblages as agential cuts Reflecting on the becoming ontology of digital medicines

Valerie Handunge¹, Eivor Oborn-Barrett¹, and Michael Barrett¹

¹Warwick University

²University of Cambridge

Abstract. Sociomaterial scholars agree on the state of constant emergence of digital artefacts, where stability, when achieved is temporal. Yet, most studies stabilize phenomena for analytical ease using agential cuts. There has been limited exploration as to how agential cuts may be used to examine temporal emergence of entangled agencies. This is unfortunate because it risks losing sight of the interpenetration between the past/present/future, which may reduce our visibility into vital temporal dynamics constitutive of sociomaterial assemblages. This study explores a new approach to examine the enactment of assemblages to bring out the temporal entanglement of distributed agencies. In so doing, we examine the interplay of the past in defining the present and the future visions (fluid and volatile) of value in this sociomaterial assemblage.

Keywords: Sociomaterial assemblages, temporality, agential cuts, value

Semiotic Overflow across Boundaries: Performativity of ‘Monstrous’ Mobile Apps

Divya Sharma¹, Agam Gupta² and Biswatosh Saha¹

¹Indian Institute of Management Calcutta

²Indian Institute of Management Rohtak

Abstract. Algorithms and databases running mobile and web-based applications (apps) capture large volumes of user data and use it to not only personalize their services, but also to publicly convey what is ‘hot’ and trending. While personalization leads to individual level implications, disseminating what is ‘hot’ can have wider public ramifications. However, it is not apparent how the implications of these apps flow beyond their sociomaterial boundaries to wider social context. This research surmises that once installed on the devices of the users, mobile apps are abandoned by their creators to be appropriated in unforeseen ways, ascribing a ‘monstrous’ character to the apps. Using app-based cab services and the traditional yellow taxis in the Indian city of Kolkata as case exemplars, and borrowing empirical and conceptual categories from Actor-Network-Theory, this research shows that material intermediaries can flow across the boundaries of the interactional frame of the mobile app world to the yellow taxi world, through unanticipated material enactments associated with the mobile apps owing to their ‘monstrous’ nature. This overflow, in turn, causes the performative semiotic construction of what is ‘hot’ and trending to also be transported, *without distortion in meaning*, across the boundaries of the app world.

Keywords: Semiotic Overflow, Intermediation, Performativity.

We have been assimilated: Some principles for thinking about algorithmic systems

Paul N. Edwards^{1,2}

¹ Center for International Security and Cooperation, Stanford University

² School of Information, University of Michigan

Abstract. This text is an opinion piece motivated by an invited keynote address at the 2018 IFIP 8.2 working conference, ‘Living with Monsters?’ (San Francisco, CA, 11 December 2018.) It outlines some principles for understanding algorithmic systems and considers their implications for the increasingly algorithm-driven infrastructures we currently inhabit. It advances four principles exhibited by algorithmic systems: (i) radical complexity, (ii) opacity, (iii) radical otherness, and (iv) infrastructuration or Borgian assimilation. These principles may help to guide a more critical appreciation of the emergent world marked by hybrid agency, accelerating feedback loops, and ever-expanding infrastructures to which we have been all too willingly assimilated.

Keywords: algorithmic systems; complexity; opacity; otherness; infrastructure

Algorithmic Pollution: Understanding and Responding to Negative Consequences of Algorithmic Decision-making

Olivera Marjanovic¹ Dubravka Cecez-Kecmanovic² Richard Vidgen²

¹ University of Technology Sydney, Sydney, Australia

² University of New South Wales, Sydney Australia

Abstract. In this paper we explore the unintended negative social consequences of algorithmic decision-making, which we define as “algorithmic pollution”. By drawing parallels with environmental pollution, we demonstrate that algorithmic pollution is already here and causing many damaging, unrecognised and yet-to-be understood consequences for individuals, communities and a wider society. Focusing on transformative services (i.e., services that transform human lives, such as social support services, healthcare, and education), we offer an innovative way of framing, exploring and theorizing algorithmic pollution in the contemporary digital environment. Using sociomateriality as a theoretical lens, we explain how this type of pollution is performed, how it is spreading and who is responsible for it. The proposed approach enables us to articulate a preliminary set of IS research challenges of particular importance to the IS community related to living with and responding to algorithmic pollution, together with an urgent call for action. Our main practical contribution comes from the parallels we draw between the environmental protection movement and the newly created sociomaterial environment that needs protecting from the spread of algorithmic pollution.

Keywords: Algorithmic Pollution, Sociomaterial Environment, Negative Consequences, Algorithmic Justice.

Quantifying quality: Towards a Post-Humanist Perspective on Sensemaking

Eric Monteiro¹, Thomas Østerlie¹, Elena Parmiggiani¹ and Marius Mikalsen²

¹ Norwegian University of Science and Technology, 7491 Trondheim, Norway
{eric.monteiro,thomas.osterlie,parmiggi}@ntnu.no

² SINTEF Digital, Postboks 4760 Torgarden, 7465 Trondheim, Norway

Abstract. Processes of quantifying the qualitative have deep historical roots that demonstrate their contested nature. The ongoing push for Big Data/data science presupposes the quantification of qualitative phenomena. We analyse an ongoing case where the core of the qualitative – judgements, assessments, sensemaking – is being challenged by quantification through Big Data/data science-inspired new digital tools. Concretely, we study how traditionally qualitative sensemaking practices of geological interpretations in commercial oil and gas exploration are challenged by efforts of quantification driven by geophysical, sensor-based measurements captured by digital tools. Drawing on Wylie’s notion of scaffolding, we outline three aspects of the performativity of scaffolding underpinning geological sensemaking: scaffolding is (i) dynamic (evolving with additional data, quality assurance, triangulation), (ii) provisional (radically changed when faced with sufficiently inconsistent data) and (iii) decentred (in and through distributed, loosely coupled networks of practices). In our analysis, the quantitative does not unilaterally replace the qualitative; there is an irreducible, reciprocal relationship. Yet, there is scope for significant changes in the role, location and sequence of tasks of quantification within the qualitative as we reflect on by way of concluding.

Keywords: Scaffolding, Performative, Post-Humanist, Sensemaking, Big Data.

Understanding the Impact of Transparency on Algorithmic Decision Making Legitimacy

David Goad and Uri Gal

Department of Business Information Systems
University of Sydney Business School, Sydney Australia

Abstract. In recent years the volume, velocity and variety of the Big Data being produced has presented several opportunities to improve all our lives. It has also generated several challenges not the least of which is humanities ability to analyze, process and take decisions on that data. Algorithmic Decision Making (ADM) represents a solution to these challenges. Whilst ADM has been around for many years, it has come under increased scrutiny in recent years because of concerns related to the increasing breadth of application and the inherent lack of Transparency in these algorithms, how they operate and how they are created. This has impacted the perceived Legitimacy of this technology which has led to government legislation to limit and regulate its use. This paper begins the process of understanding the impact of Transparency on ADM Legitimacy by breaking down Transparency in Algorithmic Decision Making into the components of Validation, Visibility and Variability and by using legitimacy theory to theorize the impact of transparency on ADM Legitimacy. A useful first step in the development of a framework is achieved by developing a series of testable propositions to be used in further proposed research regarding the impact of Transparency on ADM Legitimacy.

Keywords: ADM, Algorithmic Decision Making, Transparency, Legitimacy

Advancing to the Next Level: Caring for Evaluative Metrics Monsters in Academia and Healthcare

Iris Wallenburg¹, Wolfgang Kaltenbrunner², Björn Hammarfelt³, Sarah de Rijcke⁴ and Roland Bal⁵

¹ Erasmus School of Health Policy and Management, Rotterdam, The Netherlands, wallenburg@eshpm.eur.nl

² Centre for Science and Technology Studies, Leiden, The Netherlands, w.kaltenbrunner@cwts.leidenuniv.nl

³ Swedish School of Library and Information Science, Borås, Sweden, bjorn.hammarfelt@hb.se

⁴ Centre for Science and Technology Studies, Leiden, The Netherlands, s.de.rijcke@cwts.leidenuniv.nl

⁵ Erasmus School of Health Policy and Management, Rotterdam, The Netherlands, r.bal@eshpm.eur.nl

Abstract. In this paper we use the notions of play and (finite and infinite) games to analyze performance management practices in professional work. Whilst evaluative metrics are often described as ‘monsters’ impacting on professional work, we illustrate how metrics can also become part of practices of caring for such work. Analyzing the use of evaluative metrics in law faculties and in hospitals, we show how finite games – games played to win – and infinite games – games played for the purpose of continuing to play – are intertwined and how this intertwinement affects academic and healthcare work.

Keywords: gamification, performance management, universities, health care

Hotspots and Blind Spots: A Case of Predictive Policing in Practice

Lauren Waardenburg, Anastasia Sergeeva, and Marleen Huysman

School of Business and Economics, Vrije Universiteit Amsterdam, The Netherlands

Abstract. This paper reports on an ethnographic study of the use of analytics in police work. We find that the introduction of predictive policing was followed by the emergence of the new occupational role of “intelligence officer”. While intelligence officers were initially intended to merely support police officers by making sense of algorithmic outputs, they became increasingly influential in steering police action based on their judgments. Paradoxically, despite the largely subjective nature of intelligence officers’ recommendations, police officers started to increasingly believe in the superiority and objectivity of algorithmic decision-making. Our work contributes to the literature on occupational change and technology by highlighting how analytics can occasion the emergence of intermediary occupational roles. We argue that amidst critical debates on subjectivity of analytics, more attention should be paid to intermediaries – those who are in-between designers and users – who may exert the most consequential influence on analytics outcomes by further black-boxing the inherent inclusion of human expertise in analytics.

Keywords: Analytics, Algorithms, Predictive Policing, Occupational Change, Future of Work, Data-Driven Work.

Objects, Metrics and Practices: An Inquiry into the Programmatic Advertising Ecosystem

Cristina Alaimo¹ and Jannis Kallinikos²

¹ Surrey Business School, University of Surrey, Guildford, UK

² LSE, London School of Economics, London, UK

Abstract. Programmatic advertising is a large scale, real-time bidding process, whereby ads are automatically assigned to available spaces across types of media and geographic regions upon an individual user's browser request. The large-scale automation of programmatic advertising requires the establishment of standards and the development of technologies to govern the behavior of market participants (sellers, buyers, intermediaries). We present evidence on the rules of programmatic exchange and on the role played by a specific class of digital objects, focusing in particular on the metrics to which they are linked and how they define both the objects exchanged and the parameters of these exchanges. We furthermore demonstrate that the metrics and the technological complexes associated with them are constituted by the institutional field of digital advertising and its complex technological infrastructure. Rather than being simply means to monitor a pre-existing reality 'out there' (such as user or audience behavior) these metrics and techniques bring forward their own reality and heavily impact upon and shape the objects and processes of digital advertising.

Keywords: Automation, Digital Advertising, Performativity, Digital Objects, Information Infrastructures.

Re-figuring Gilbert the Drone

Mads Bødker¹, Stefan Olavi Olofsson² and Torkil Clemmensen^[1]

¹ Copenhagen Business School, 2000 Frederiksberg, Denmark

² Independent Researcher

Abstract. In the paper we offer a story of *re-figuring* a consumer drone as a way of “living with monsters”. If drones are “monstrous”, what potentials might lie in re-framing them as more benign, civic, or even perhaps enchanted? Based on a field study of work at a makerspace, we present re-figuring as a process of reflecting, interacting and imagining the function of a drone, using gradually developing intuitions as well as an emergent *felt* ‘sense’ of the drone in practice. Using an analytic trajectory broadly based on philosophies of affect, we suggest how felt relations to technology can potentially become further involved in a critical move towards re-figuring “monstrous” technologies.

Keywords: drones, re-figuring, design

Making a Difference in ICT Research: Feminist Theorization of Sociomateriality and the Diffraction Methodology

Amany Elbanna

Royal Holloway University of London, Egham, Surrey TW20 0EX, UK

Abstract. Over the last decade, sociomateriality appeared as a theme in IS research that has been interrogated with a variety of theoretical lenses. However, researchers have since raised methodological concerns regarding its application. This paper argues that a research methodology cannot be separated from either the theoretical lens that the research adopts or from its overarching purpose. Considering the broad range of theoretical lenses through which sociomateriality could be examined, this paper focuses on Barad's theory of agential realism [25]. The paper provides a brief history of agential realism to shed light on the reasons behind IS researchers methodological difficulty and offers a diffraction methodology as a possible methodological guide to IS research adopting this lens. Implication for research is discussed.

Keywords: Sociomateriality, Agential Realism, IS research methodology, Diffraction Methodology.