# Abstracts

Dirk Baecker

## Sociology 4.0 and is Precursors: A Sketch

Sociology is a child of the modern book printing society. With the transition to a society of electronic and digital media, institutional, structural and cultural self-evident facts of modern society are at issue, without sociology so far having sufficient granularity in its concepts to observe and describe the transition from modern to a "next" society. This article puts the transition from a modern society to a "next" one into perspective by placing it in the context of four media epochs of human society (oral, literal, printing press and "digital" society). And it is working on the determination of a basic sociological idea which, according to the thesis, focuses on problems of communication, i.e. the creation, maintenance and modification of dependencies between independent living beings, and in its own form has been conceived of long before the formulation of an explicit sociology. Each of these media epochs has its own "sociology", even if sociology only becomes explicit in modernity. It turns out that human societies have always been dealing with inscrutable communication partners, be they ghosts and gods, past and future times, "free" individuals or the "invisible machines" of the present. Sociology 4.0 is therefore the latest variant of knowledge to understand a communication oscillating between knowledge and ignorance and forming its own memory in this oscillation.

Sascha Dickel

## Postsocial society. Functional differentiation in times of digital communication.

Prototypical cases of open science indicate a tendency towards social dedifferentiation. Hence, the article asks if Luhmann's theory of social differentiation is still adequate to describe contemporary digital society. I argue that a social dedifferentiation of science would not contradict Luhmann's theory. Social dedifferentiation rather corresponds to an understanding of functional differentiation as a post social formation of society. I suggest that the actual challenge for systems theory is to expand its understanding of the post social – beyond the boundaries of human participants.

Tobias Wolbring

## The Digital Revolution in the Social Sciences: Five Theses about Big Data and Other Recent Methodological Innovations from an Analytical Sociologist

In recent years, both scholars and policy-makers place big hopes in the emerging fields of data science and computational social science to solve not only academic

puzzles, but also to cure many "real-world" problems in a wide range of areas such as health, crime, and poverty. In this paper, we re-evaluate these claims, highlight current problems of these nascent fields, and show what sociology has to contribute to and can gain from the digital revolution in the social sciences. We thereby focus on analytical sociology – a field at the intersection of classical sociology and modern computational social science, which places a strong emphasis on mechanism-based explanations and rigorous empirical analyses. In a nutshell, we argue that sociology has to bring a lot to the table with important contributions concerning not only substantive research questions, but also theoretical insights and methodological skills. Both sides – not only sociology, but also data science – could thus substantially profit from a closer exchange, while some problems still remain that hinder an even more fruitful collaboration.

Barbara Sutter and Sabine Maasen

## The Re-Invention of Sociology in, for and with a Society Digitalizing Itself

Digitalization fuels what Evgeny Morozov has coined technological solutionism: Whatever problem emerges, it might be solved by digital technologies. Sociology seems rather reluctant to join in this euphoria, as the problem that might be solved by digital sociology and/or a sociology of the digital is not right at hand. What can be easily found, however, are various phenomena at the interface of sociology and the digital. The authors collect traces of these interactions and – using Foucault's "principe de série" – arrange them along their intradisciplinary effects, their aims, allies and addressees beyond the discipline, and their socio-epistemic configurations – i.e. the authors follow the traces of sociology of, for and with a society digitalizing itself. It is shown, that these indicate an undergoing re-invention of sociology and that this project in the making calls for empirical-reflexive STS of sociology – and its society.

Elke Wagner and Niklas Barth

## The Communicative Construction of Data

The [ongoing] discussion about digital transformation can be read as a media debate. As the early starting point of this debate, we can identify the pervasion of society's infrastructure with computer-based recording machines that achieve enormous gains in complexity by reducing communication to calculations based on the binary code of 0 and 1. When we look at this debate media effects of the digital become highly visible in this context. The present article focuses on the classical sociological question of how the reality of a digital, data-based society is generated in communication. Our inquiry here is limited to the observation of the social-scientific discourse on Big Data. In reviewing the sociological literature from this perspective, we have chiefly encountered modified sociological distinctions drawn between observer and world, technical and human observers, and ultimately the

distinction between data and communication. We see a societal view of data that has differentiated a perspective on data as an entity that follows a logic of its own. In a fundamental sense, the sociological discourse that we have reviewed over the course of our reading suggests that it is the observation of data (I), communication of data (II), even the power of data (III), as well as the publicity of data (IV) themselves that actively intervene in communication processes and thus induce the transformation of social-scientific distinctions.

Katharina Kinder-Kurlanda

## Big Social Media Data as an Epistemological Challenge for Society

By challenging conventional social science research methods, 'Big Data' is currently the subject of a critical discourse in sociology. The epistemological foundations of social science research are as much at stake, as is the significance of the theory of science as the basis of (social) scientific work and the question of who gets to speak with authority about 'the social' and is being heard. Does Big Data enable new insights? How can the findings be verified methodologically and ethically? This contribution argues that the epistemological questions that arise with Big Data are related to the various experiences that arise in everyday research work. The everyday practices of researchers and their concrete problems in dealing with data (from accessing it to publishing findings) need more attention in the discussion about Big Data's epistemology; these practices are deployed in the context of the academic job market, publication policies, high costs of interdisciplinary work and an increasingly important role of social media platform providers. Big Data research is often conducted in (emerging) disciplines hat have no tradition of theorising scientific knowledge production. Uncomfortable, laborious and time-consuming ways of generating knowledge – which, for example, not always generate positive results and are difficult to maintain when faced with ever higher publication pressures as they prevail in more and more disciplines – are called for to create the necessary space for reflection on the epistemology of Big Data. The current situation offers an opportunity to bring in epistemological thinking and to identify points of contact where sociology and Big Data research can meet in order to unlock Big Data's potential by grounding it on epistomological foundations that have been subjected to critical reflection.

Roger Häußling

## Datafication: Data as Interfaces between Algorithmic and Social Processes

This paper approaches the topic of digitisation from a genuinely perspective of sociology of technology. The focus on technological aspects is currently found in two main approaches: the so-called computer-centered paradigm, which focuses on programs, binary processes and algorithms, and the database-centered paradigm, which focuses on the management of and access to data. In both approaches, the

central question of how digital and social processes are effectively united in the process of digitisation is until now unanswered. A further perspective for answering this question is seen here in the Relational Sociology. The present paper proposes that data be understood as interfaces between algorithmic and social processes. With an interface concept, the relational approach is able to analyze the core of the digitization process, the reciprocal effects of these two types of processes. For this purpose, a model of data technology couplings is developed.

Udo Thiedeke

## Digital Normality? – A media-theoretical observation of the horizon of meaning of digitized sociality

So far, sociology has grappled with the social conditions and consequences of digitization primarily epiphenomenal and theoretically inconsistent. Thus, the normality of a sociality under conditions of digitization can hardly be grasped sociologically adequately. The article therefore proposes, on the basis of a functional-structural media theory of cybernetic interaction media, to record the socio-technical quality of a social horizon of meaning of digitized communication. This horizon of meaning defines "cyberspace" as the normality of digitized sociality in the paradoxical expectations of a reality unfettered by cybernetic computation.

Josef Wehner

## "Numerical Coupling": On the Relationship between Mass Media and the Internet

This article deals with the relationship between mass media and the Internet or social networks. Three considerations are put up for discussion. First, it is argued that the Internet is not only used by the mass media as another distribution channel, but also for the compilation and analysis of user activity, in particular the online comments and reviews of mass media offerings. A second, subsequent consideration is that such online-compilation/computation of data helps the mass media to gain insights into the opinions and expectations of relevant user groups as well as it provides the users with previously unknown possibilities of information on mass media events and the experience of participation and affiliation. In the third step, it is proposed that the decoupling between broadcasters and audience or users that characterizes the system of mass media is bridged under conditions of online computation: numerical systems and corresponding formats of presentation provide a space of observation in which each side by means of numerical differences can reveal how it observes and evaluates the other side.

Nicole Zillien

## Digital Experiences – Patient's Patchwork Knowledge in Health-Related Online Forums

Patients undergoing infertility treatment are constantly confronted with complex decisions requiring scientific knowledge. Referring to scientific knowledge, which often is tentative and conflicting, however, frequently impedes the patients' decision-making. Against this background, we analyse how infertility patients perceive and utilise other patients' knowledge which was communicated and gained in infertility forums. A guiding premise of this article is that the characteristics of digital media help to bring scientific knowledge to a conclusion and, in this way, to translate it into an everyday decision-relevant resource. In a multimethod design, we carried out qualitative telephone interviews with 32 people with an unfulfilled desire to have children, a standardised online survey of 1,216 users of infertility forums as well as a standardised content analysis of three German-language infertility forums. Our study shows that patients' online forums constitute a place where scientific knowledge and lived experiences intertwine. In order to increase their chances of a pregnancy, infertility patients using online forums interweave scientific knowledge and personal experiences, go back and forth in this process, and form patchwork knowledge enabling them to go on in decisions involving uncertainty.

Bernadette Kneidinger-Müller

## TV as a social experience. Social TV as a substitute or complement to traditional TV dialogues

Digitization, mobilization and individualization describe socio-technological processes of change that influence everyday practices of television reception. The development of so-called social TV applications, which are often used by means of "second screens", is an example of this. This raises the question of how social TV applications can change the social experience of television reception. In this contribution it is shown, in which form social and technical developments contribute to the individualization and the rediscovered collectivization of television consumption. Based on theoretical considerations and empirical analyzes, it is discussed how social TV applications can become a substitute or supplement to traditional TV conversations.

Heike Greschke and Jagoda Motowidlo

## Living Apart together: Socio-technical Constellations and Practices of Care and Education in the Context of Transmigration

How can we grasp the relationship between technological development and the social appropriation of communication technologies (CT)? Based on the phenomenon of transmigration, this article proposes the term techno-social hybridization in order to highlight the mutuality of social and technological adaption, which is held

to be a key feature of mediatisation processes. Transmigration relies on cross-border mobile practices generating long-lasting transnational family relationships and simultaneously link individuals to places of origin and destination. Transmigration is hardly imaginable without CT – this has become particularly evident with the advent of electronic and digital technologies. Nonetheless, transnational family relationships can be traced back to the 18th and 19th centuries. In a diachronous comparative analysis, the article examines the emergence of transmigratory practices of care and education and their enhancing through the ages of communication technologies. We scrutinize how the mediatisation of social practices and the socialization of media technologies mutually depend on each other and changes the distribution of agency between human and technological participants. To summarize the results of the analysis, techno-social hybridization embraces three levels of interaction: First, the mediatisation of the social is interacting with a simultaneous socialization of media; second, the materiality of media formats converges with the modes of action and interaction into which they are admitted and which are transformed within, so that, thirdly, in socio-technical constellations functional elements of technological and human participants reflexively refer to each other.

René König and Patrick Sumpf

### Is the user always right? The inflationary reliance on trust in the context of online platforms

Online platforms provide the infrastructure for a smooth transmission of data between various actors (e.g. users, developers, advertisers). On the one hand, the platform-based Web 2.0 has opened the door to the internet for less tech-savvy users by hiding complexity behind conveniently usable interfaces. On the other hand, platforms have contributed greatly to a black-boxing of the internet as they make it harder to understand and control the underlying socio-technical complexity. At the same time, risks and uncertainties are largely transferred to the users who are expected to make informed decisions when they agree to the platforms' terms and conditions. The emerging system thus heavily relies on trust in and by the users – to an extent which we regard as inflationary. In the age of Big Data and the Internet of Things this development exacerbates: The digital deeply intertwines with the physical and data flows even more opaquely. We trace this development from the analytical view point of trust research and address the ensuing implications for governing platforms and digital sociology.

Christian Stegbauer and Alexander Mehler

### Reasons for the Formation of Ubiquitous Centre Periphery Structures and their Consequences

Investigating the relationship structure in internet-based social spaces nearly in all cases produces similar relational patterns, namely centre-periphery structures. This

pattern has considerable consequences for the possibility of equal participation in discussions. Information is concentrated on a few participants. This leads to an unequal distribution of power and influence. To explain the development of such inequality structures, we examine the causes of the structure formation. We find reasons in numerous restrictions that also have an impact on the Internet. These include cognitive limitations (only a few actors are known by name) and social constraints (for example with regard to the size of multilogues). Even time and space restrictions play a role on the Internet. centre periphery structures can be found in all of the social spaces we investigated: Internet chats, mailing lists, in the discussions on Wikipedia articles and also in the relationship structure of the entire Wikipedia. These findings are particularly interesting because it is.

Oliver Nachtwey and Philipp Staab

**The Production Model of Digital Capitalism**

The digitalisation of the economy is transforming companies, division of labour, and market structures. Its consequences for a systematic understanding of capitalist transformation, however, are barely analytically understood. Therefore, we propose a perspective on digital capitalism as a specific production model which differs from the Fordist and post-Fordist production model in significant ways. We develop an analytical framework of digital capitalism which is supposed to connect research on digitalisation with systematic studies of capitalism.

Andreas Boes, Tobias Kämpf and Alexander Ziegler

**Labour in the information space – informatization as a perspective for a sociological understanding of the digital transformation**

In the context of digital transformation a process of radical change is taking place in society. The ways how people communicate and access information, how their working world looks like, how they spend their spare time, how political processes work, how opinions are formed, how values are created, and how knowledge is shared are subject to fundamental changes. Amid this situation, sociology is confronted with the task of developing an adequate theoretical and empirical toolset for the analysis of digital transformation. In doing so, sociology encounters a public discourse that has become accustomed to speak in a reified form of the digital transformation of society and its subsystems. Againt this background, we aim to show that the theoretical perspective of informatization proves to be an instructive approach to sociologically analyse the digital transformation. Informatization doesn't put the main focus on the concept of digitisation, but on a sociological understanding of information and relates change processes in society to the development of the productive forces. On this basis, we argue that the development of the internet into an open information space is the main driver of digital transforma-

tion and demonstrate, taking the working world as an example, its disruptive impact on the society as a whole.

Sabine Pfeiffer and Anne Suphan

## Digitalisation, Work and Employment: Well-Known Contexts, Obsolete Categories, Novel Effects

In view of the transition to a digital society, public discourses such as sociology and labour market research are concerned with the – to some extent – far-reaching predictions of automatisation. The losers here would primarily be machine-oriented activities in industrial sectors, as these are assumed to be largely routine-based. This contribution challenges the quantitative labour market research which takes this line of argument, demonstrates the inherent limits of categorising activities into routine or non-routine, and confronts the macro data with contrary results from qualitative research into the sociology of labour. This evidence, which – to some extent – suggests that non-routine activity is in fact becoming more important in increasingly digitalised jobs, is then measured on the basis of the BIBB/BAuA employment survey and an index of work capacity (the AV Index). By means of the authors' own analyses and a comparison with the highly regarded study by Frey/Osborne, the authors question the categorisation routine/non-routine. Finally, the argumentation moves away from the empirical labour market level and discusses the results from the perspective of modernisation theory.

Uli Meyer

## Industry 4.0 as a Technological Vision for the Future

This article examines the ascent of the term and concept of Industrie 4.0 and the reasons for its success in Germany from 2012 until today. The debate on Industrie 4.0 takes place within the broader context of digitalization in various sectors of society. Alongside the more global vocabulary of digitalization, especially terms like 'big data' or the 'sharing economy,' Industrie 4.0 has established itself as a prominent buzzword in Germany. Industrie 4.0 is an example of an envisioned sociotechnical future. It also illustrates how ideas about the future of technology impact on the present. To grasp the emergence and success of such imagined futures, we draw on concepts from science and technology studies (STS) and the sociology of technology and connect them with ideas from organization studies. We argue that an envisioned sociotechnical future is successful when it provides a source of orientation to as many organizations as possible. Digitalization discourses, like Industrie 4.0, do impact on the present, but not in the way they are conventionally portrayed. While stakeholders and organizations base their activities around digitalization discourses, they do so in their own specific ways. We thus argue for clearer distinctions between (a) current discourses on digitalization, (b) organizational deci-

sion-making processes related to digitalization, (c) and changes in everyday processes and activities in and by organizations.

Uwe Matzat and Erik van Ingen

## Social inequality and the digital transformation of Western society: what can stratification research and digital divide studies learn from each other?

We examine what the social change induced by the ubiquitous use of social media and other Internet applications in Western society implies for sociological research on inequality and stratification. Stratification research on the one hand and studies of the digital divide on the other hand used to be quite separated. We provide an overview of research on inequality in the field of social media and other Internet-use research and argue that separation between this and mainstream inequality research is no longer useful. Digital divide research in the 1990 s examined which groups were disadvantaged with respect to access to the Internet. Later attention shifted towards a so-called second order digital divide, focusing on inequalities in the distribution of a diverse set of digital skills as well as inequalities in forms of Internet use. Recently researchers have started to address questions with regard to a third-order digital divide consisting of inequality in outcomes of Internet use. This type of research creates a bridge to traditional inequality research, as it focuses on the (real-life) consequences of what individuals do online. Since variation in Internet use leads to inequality of outcomes of Internet use, inequality of life chances is directly addressed by digital divide research. We argue that the ubiquity of use of social media in almost all human domains, and the fact that research has shown that this usage affects socio-economic positions and quality of life, urges inequality researchers to take into account digitalization as an important dimension of inequality. Most important, the shift to a third order digital divide provides the opportunity for both areas of research to focus on outcomes as a point of convergence. Looking ahead, we propose a comparative approach for future sociological research that takes into account findings of stratification and digital divide research.

Christian Papsdorf

## Regarding the reasons and obstacles of voluntary non-usage of the internet. An alternative perspective on ubiquitous mediatisation processes

This article provides an alternative perspective on the apparent unlimited diffusion of internet communication. Recurring to two complementary concepts, i.e. mediatisation and digital divide, it is shown that the deficits and shortcomings of internet communication cause four major issues that shed a different light on the internet usage. Those are (1) media restrictions of the communicableness, (2) privacy related constraints of content, (3) physical and mental restrictions of communications capacity and (4) limits of automation capacity. Subsequently, we discuss under what

circumstances non-usage is even possible with regard to the close entanglement of the internet and everyday life. The paper closes with four implications of this alternative perspective on internet research.

Tanja Carstensen

## Gender and the Digital – programs, findings and synergy effects at the intersection of sociology of gender and digital sociology

Technologies are a constitutive part of gender relations; at the same time, gender relations are inscribed into the design and use of technologies. This tight-knit relationship of technology and gender also becomes evident regarding digital technologies. However, the connection between digital sociology and the sociology of gender has, as of yet, hardly been elaborated, which is surprising not least because they share a set of common theoretical references, paradigms, issues, and research attitudes. The paper aims to identify possible synergy effects of both sub-disciplines, outlining the key assumptions, questions and concerns of each as well as summarizing findings on the main research areas of access, materialization, practices, division of labour, and publics. It can be shown that digital technologies both stabilize and destabilize gender relations. At the same time, the potential of collaborative research is illustrated.

Jeffrey Wimmer

## How Everyday Political Engagement Practices Transform: An Examination of the Usage of Social Network Sites

Surprisingly, the question of the superordinate social and media embeddedness has so far not been systematically taken into account in the analysis of political engagement and participation in the digital age. The article therefore wants to empirically explore the extent to which the subjective understanding of participation and the associated participatory practices have changed. On the basis of an explorative survey of 490 respondents on their media usage, media literacy, offline / online network as well as engagement motives and practices, the importance of media and non-media forms of engagement in the digital age and how they are embedded in communication networks will be highlighted. Additionally, the influence of the usage of social networking sites on engagement is examined.

John Postill, Victzor Lasa and Ge Zhang

## Monitory politics, digital surveillance and new protest movements: an analysis of Hong Kong's Umbrella Movement

In this article we seek to inject some dynamism and complexity into the current scholarship on digital surveillance. Drawing from ethnographic research in Hong Kong, we argue that digital surveillance is a multi-directional endeavour with top-down, bottom-up and horizontal dimensions. Therefore, it cannot be reduced to

desktop-down portrayals of an almighty 'surveillance state' – not even in advanced surveillance regimes like China's. Instead we suggest that digital surveillance practices must be set within a much larger, dynamic system we describe as monitory politics, a type of political action in which state and non-state actors surveil and shape one another's activities across a rapidly changing communicative landscape. To develop this idea, we first provide a brief methodological section based on our participant observation during the 2014 protests in Hong Kong, also known as the Umbrella Movement, after which we review the existing literature on China's surveillance efforts. We then sketch an account of the protests, followed by a discussion of the uncannily similar horizontal (or lateral) surveillance practices of local people and the police. We conclude that China's 'networked authoritarianism' (MacKinnon 2011, 2012) is far from being a perfect model of control, for numerous forms of dissent and resistance survive in the country, with the Hong Kong protests as a case in point.

Evelyn Ruppert

## Doing words with things of the Internet

Much of social and political life is now conducted through the Internet and social and power relations are ever more entwined with digital life. How might digital sociology then attend to fundamental sociological questions of power and subjectivity as people variously act through the Internet? There are of course many studies of how the Internet is remaking sociality, social networks, publics, politics, identities, subjectivities, or human-technology interactions. In various ways, they attend to how the Internet is altering relations not only between people but also between people and vast arrangements of sociotechnical conventions that have become part of everyday language, such as tweeting, messaging, friending, emailing, blogging, sharing, and so on. Interpreting the digital data that these 'registers of action' generate and their different forms of subjectivity represent an interpretive challenge for digital sociology and its emerging digital methods. In response to this challenge, I offer a conceptual framing that starts from Bruno Latour's account of 'how to do words with things' to interpret the various ways that subjects 'do words with things of the Internet'. The framing builds on the formulation that when subjects act, they perform different subject positions that are composites of obedience, submission, and subversion. I then focus on subjects who perform digital acts by subverting conventions of the Internet to make rights claims and in doing so bring a political subjectivity called the digital citizen into being.