Farina Madita Dobrick
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RESEARCH

Research Ethics in the Digital Age

Ethics for the Social Sciences and Humanities in Times of Mediatization and Digitization

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The German Excellence Initiative funded this publication as TU Dresden has been selected as one of Germany's 11 Universities of Excellence.

ISBN 978-3-658-12908-8 ISBN 978-3-658-12909-5 (eBook)
https://doi.org/10.1007/978-3-658-12909-5

Library of Congress Control Number: 2017956137

Springer VS

Printed on acid-free paper

This Springer VS imprint is published by Springer Nature
The registered company is Springer Fachmedien Wiesbaden GmbH
The registered company address is: Abraham-Lincoln-Str. 46, 65189 Wiesbaden, Germany

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Digital Publishing

Applying Research Ethics to Different Digital Environments

Introduction

Jana Fischer, Farina Madita Dobrick, Lutz M. Hagen[1]

Digitization and mediatization are core processes of ongoing social change. In the course of mediatization, communication increasingly manifests itself via mass media or telecommunications. Therefore, more and more information becomes accessible in the form of data. Digitization converts data into universal digital formats which eases computer processing, leads to the convergence of different media, and thus further fosters mediatization.

Both processes alter social behavior and cultural traditions, thereby generating new objects of study and new research questions for the social sciences and humanities. Further, mediatization and digitization increase the data volume and accessibility of (quantitative) research and proliferate methodological opportunities for scientific analyses. As a consequence, they profoundly affect research practices in multiple ways, e.g.:

- researchers increasingly apply quantitative and automated methods,
- researchers are spoilt for choice by a plethora of rather new and often sparsely explored methods for collecting and analyzing behavioral data,
- the relevance of computer science and mathematics grows for the social sciences and humanities and vice versa,
- research is more prone to invading the privacy of individuals who are the subject of research,
- the line between scientific research and market research tends to blur,
- scientific research seems disadvantaged as compared to commercial research by big players commanding big data repositories of the internet.

Digitization not only provides new data and algorithms, but also a changing research practice in which new norms in scientific behavior need to be developed and old norms need to be scrutinized. Moreover, the ethical perspective points towards a prospective impact assessment on research practice.

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F.M. Dobrick et al. (Hrsg.), *Research Ethics in the Digital Age*,
https://doi.org/10.1007/978-3-658-12909-5_1

Research ethics, therefore, need to reflect on implicit normative orientations and consider all actors involved, as well as discuss new digital areas of research, justification, testing, sharing and communication.

One example for such normative orientations was developed by the Ethics Working Committee of the members of the Association of Internet Researchers (AOIR), composed of ethicists and researchers from various regions and countries. They produced two major reports to assist researchers in making ethical decisions about their research and in ever-changing technological contexts (Markham & Buchanan, 2012). This committee had the idea that researchers, students, ethicists, and related institutional bodies and academic organizations in the domain of Internet research may turn to these ethics documents as a starting point for their inquiries and reflection. Because of this, the guidelines were developed out of the day-to-day practices of researchers in a wide range of disciplines, countries, and contexts, as well as consider a wide range of ethical issues and questions that may become relevant in the context of internet related research (Markham & Buchanan, 2012). As an example for those issues and questions, see Figure 1:

Types of data collected	**Types of Venues/ Contexts**	**Commonly asked questions about**
Interactions, behaviors, transaction • Hyperlinks • Comments or Recommendations • File or Information Sharing • Forwarding / Replying • Interpersonal Interactions, Conversations • Networks	Direct Communication (formal or informal interviews via real-time or asynchronous text, audio or visual) ...	How is protection of autonomy of participant/author achieved through informed consent or protection of vulnerable persons? ...
	Special Interest Forums (e-mail or web-based conversations and archives, e.g. threaded discussion forums, chatrooms) ...	How do terms of service (TOS) articulate privacy of content and/ or expectations for privacy? Does the author/subject consider personal network of connections sensitive information? ...
Production, Presentation • Texts • Images • Video • Audio • User motions and movements • Configurations or personalization of devices ...	Social Networking (e.g. LinkedIn, google+, Facebook, Twitter, Tumblr, Flickr, FourSquare) ...	Does research purpose and design balance possible conflicts between participants and researcher perceptions of public/private and sensitive/ nonsensitive? Is the data easily searchable, retrievable? …

Fig. 1: Extract of the appendix 1 (Markham & Buchanan, 2012, p. 18)

There are other, although not overarching, approaches in the field of (qualitative) social science that formulate an ethical codex as an orientation for ethical research principles. For example, Unger (2014) depicts different principles for research ethics in the field of social science: objectivity, integrity, adequacy, voluntary, informed consent, privacy and data minimization. In this context, she also discusses the obstacles and problems that might occur during the research process while trying to adhere to all of those ethical rules/principles (Unger, 2014). Furthermore, those guidelines specifically concentrate on the (qualitative) research process itself and not on potential consequences. Moreover, the principles are focused on social science and more or less ignore other research fields.

Therefore, this book aims to discuss the consequences of digitization and mediatization concerning the subjects, objects, and addressees of research in the social sciences and humanities within a transdisciplinary perspective. In its first section, some of the core problems are identified:

- Understanding of research ethics and its role in times of digitization
- Discussion of scientific integrity and how digitization seemingly leads to its decrease as well as new options to detect scientific fraud thanks to digital media
- Understanding legal conditions/frameworks under which digitized research falls
- Discussing the successes and failures of digitization in lifelong learning and advantages as well as disadvantages of data generated by the interaction between learners and the digital learning object

In the second section of the book, case studies of research, projects in the field of social digital research show some of the problems appearing in practice in the field. This concerns on one hand the digitization of everyday lives in different contexts like e.g. telemedicine, work environment, industry 4.0 or fundamentally changed communication in crisis situations. From a perspective of the communication science, the alteration of journalism caused by digitization is also relevant. In this context, ethical problems occur not only on closer considerations of journalistic work, but they also emerge in regard to user-generated content.

Moreover, research standards and practices in emerging economies, in which digitization may progress more slowly have to be considered. In those countries, digitization may concern areas of life and problems that did not attract any attention in westerly-dominated research landscapes.

The concept of this book reflects up on and was further developed following a summer school held in October in 2015 in Dresden, Germany. The main

focus of this summer school was a transdisciplinary discussion of research ethics in the social science and humanities in times of digitization and mediatization.

The summer school was funded by the German Excellence Initiative giving all participants the possibility to attend. TU Dresden has been selected as one of Germany's 11 Universities of Excellence.

The summer school consisted of talks and workshops by international scientist and experts from various fields providing an interdisciplinary perspective and knowledge to the discussion of the research projects and their ethical challenges of the doctoral candidates participating in the summer school. Those two fundamental parts are as well represented in this book[2].

This book collects and points out a great variety of challenges the individual researcher but also the scientific community and institutions face in times and as a consequence of digitization and mediatization. Thereby it demonstrates the importance and the necessity of interdisciplinarity in research projects that work in digitized and mediatized fields. Meaning that only research projects that integrate the knowledge of ethicists, informatics, legal scholars and social scientists can successfully tackle relevant questions of a digitized and mediatized world.

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2 The first part contains the keynotes as to core issues while the second part is composed of participants' contributions to the summer school.

Keynotes as to Core Issues

Research Ethics in the Digital Age: Fundamentals and Problems

Hermann Diebel-Fischer[1]

Keywords: research ethics, history of research ethics, interdisciplinarity

Abstract

This paper outlines different readings of the term research ethics and presents the approach of integrated research ethics. This approach steps beyond an understanding of research ethics as applied ethics and calls for the development of ethics frameworks not within the classical structures, i.e. in theology or philosophy departments, but organized in a post-departmental interdisciplinary structure.

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1 Introduction

Research, science, and scholarship play a prominent role in our society – a role which is becoming more and more important. However, of all the endeavors and projects that take place in the scientific community, only a small amount is noticed by the public. Major breakthroughs and scandals are headline material for newspapers; most of the scientific and scholarly work – be that great results or failures – will only be noticed by fellow scholars, even though it might be contributing to developments which are undesirable for the public. Efficient control over research activities is not possible for individuals within a society. But still people place trust in those who are engaging in research activities. This trust can, at least partly, be attributed to research ethics.

Universities, colleges, profit and non-profit research organizations, as well as companies, are places where people work on research in science, engineering, and the humanities. 'Research' is an umbrella term for a large scale of paradigms and methods in pursuit of the attainment of knowledge. A theologian who works with books at his desk is different from a biologist who works in her laboratory in more ways than just their respective work place environment. Not only the topics they research differ from one another, but the possible applications of knowledge gained by each differ as well – and thus this knowledge's impact. However, every research result may have small yet unforeseeable impacts which is why, regardless of the research area, possible outcomes should be considered as early as possible.

But both the theologian and the biologist have more in common than one might first notice – both are academics, both work guided by methods and theoretical frameworks, the results of their work are intersubjectively comprehensible. They engage in research activities to gain knowledge in an open and unbiased way.[2] Both follow the idea of scientificity. Both are free to choose research questions at their will and do not have to justify their decisions.[3] They may choose the research objects and methods they want, but they have to deal with the moral questions attached to the decisions they make. Boundaries are set by the law and codes of conduct, ethics, professional practice of the respec-

2 Cf. R. K. Merton's ethos of science, in which he points out four characteristics: "Universalism", "'Communism` (in the non-technical and extended sense of common ownership of goods", "Disinterestedness," and "Organized Skepticism." (Merton, 1958, p. 553-561).

3 These are the ideal circumstances for tenured professors in Germany who are not engaged in third-party funded research or contract research, but generally everyone can claim it. This independent research does not require any legitimation from outside, however, if humans or animals are involved, it might require approval from an ethics review board (cf. Turner, 1986, p. 16).

tive learned societies.[4] In Germany, research is protected by article 5 (3) of the Basic Law (constitution) (Grundgesetz, 2016), yet this defensive right does not release researchers from responsibilities they hold beyond any legal regulations.[5] This 'burden' which individual researchers have to bear and which cannot be delegated to collectives,[6] will be analyzed in this paper.

Outlining the structure, the tasks, and the benefit of research ethics in the digital age requires that we first clarify the questions we debate: What is research ethics, and what are the characteristics of the digital age and how are they related? This is important when we talk about research ethics *in* the digital age since this implies that there might be certain conditions which can yield further implications. In this paper, the argument for an integrated approach of research ethics is outlined.

2 Fundamental questions concerning research ethics

Even if ethics seems to be an everyday issue, we must not forget: Ethics is an *option*, nothing more but also nothing less than this. That might appear as a triviality at first sight, yet, there is more to it. Reflecting on actions is a decision that has to be made, as this reflection (prior to or even after the completion of an action) is not a condition tied to actions. Where some might think this is a natural thing to do, others disagree.

Since ethics is optional, it is required to promote ethics if one deems it useful. Ethics is both an area of research within the arts and humanities ('*Geisteswissenschaften*' in German) in which theories concerning the reflection on actions are developed – which help checking the validity of justifica-

4 Examples of codes of conduct and ethics codes are: Ethical Decision-Making and Internet Research: Recommendations from the AoIR Ethics Working Committee, Version 2 (Markham & Buchanan, 2012); Ethik-Kodex der Deutschen Gesellschaft für Soziologie (DGS) und des Berufsverbandes Deutscher Soziologinnen und Soziologen (BDS) (2014). It is common practice in German scholarly societies in social sciences to impose these codes (DGPuK, 2015; DVPW, 2016). This is not always seen as an ideal situation, as Günther points out structural problems connected to questions of motivation, liability, and competence (2003, p. 199f).

5 According to Scholz, scholarly research and science ("Wissenschaft") is "a particularly autonomous circumstance of life, which is rooted in and comprises a plethora of intellectual and autonomous as well as communicative cognitive processes and imparting processes, and which remains open (has to remain open) regarding its definition." (my transl.) Yet, there are restrictions (Scholz, 2014, margin no. 85.87f.).

6 According to Birnbacher (2013, p. 19), there are no collective agents, because collectives do not have to capability to reflect on actions, nor are they able to reason. Therefore, we cannot evaluate collectives with respect to morality, even if we can attribute actions to them. The attribution of characteristics of awareness is only possible with respect to individuals within the collective.

tions of moral statements (Düwell, 2013, p. 37) – and it describes the application of this knowledge to a specific area of research ('applied ethics'), which is as what research ethics is generally understood.

As we cannot assume that it is obvious what the right decision is within a certain setting, we need one or more methods that help to provide orientation towards what action should be pursued. These methods for the evaluation of different courses of action, as helpful as they may be, can also be object of controversies as the decision for a method is an action which again can be the object of an ethical evaluation.[7]

This problem will have to be left aside and we will directly proceed to the analysis of the term 'research ethics.' This compound noun hints at a special kind of ethics which is connected to research. Presumably, research ethics belongs to the field of applied ethics – but there is another option.

Schweidler identifies three readings of the German term "*Wissenschaftsethik*" ("ethics of science" including all academic disciplines), which are (1) research ethics, (2) the ethos of science as put forward by Merton (1958, p. 553), and (3) "the responsibility of research" (2005, p. 957, my transl.). The latter is found in Lenk's work, who analyzes ethics of science and research ethics with regard to responsibilities within the field of science and research and beyond (Lenk, 1991, pp. 54-75).

Ethics of science (in a broader sense, including the arts and humanities) and research ethics are not unambiguously defined areas, as they are merely constructs which help provide orientation on the wide field of ethics. Similar to the blurred boundaries between the fields of economic ethics and the ethics of politics, we can find overlappings between ethics of science and research ethics. Both terms are used interchangeably (Graumann, 2006, p. 253). In Germany, however, the law understands *Wissenschaft* (the aggregate of all academic disciplines): "as a generic term for scientific or academic research and academic teaching" (Scholz, 2014, no. 85). Notably, this differentiation is not upheld throughout the discourse on research ethics and ethics of science as teaching is marginalized. Graumann differentiates between research ethics, which deals with research and the ethics of science, which deals with "the triad science, technology, and society",[8] (2006, p. 253, my transl.) which is also an arbitrary position and not a natural setting.[9]

7 This is a problem which is called "Münchhausen trilemma": it is either an "infinit regress", a "logical circle", or stopped by "breaking off the process" (Albert, 1985, p. 18). This problem will not be discussed in this essay.

8 This idea can also be found in the title "Technik- und Wissenschaftsethik" ("Technology Ethics and Ethics of Science", my transl.) (Hubig, 2003).

9 This however puts a focus on technology in a narrower sense (technical artefacts) and leaves aside all non-technical disciplines.

If we take Graumann's proposal of research ethics as ethics that focuses on research, then ethics of science could be understood as a superordinate ethics (but not metaethics) that focuses on research and researchers, research institutions and their relation to society, individuals, culture, law, etc. In this case, research ethics would be a special case of ethics of science, which would take the general settings and conditions of *Wissenschaft* (all academic disciplines) into account. Then, Lenk's account of the term responsibility could be employed in an appropriate way. Lenk (1991, p. 61) proposes an analytic differentiation in (1) "responsibility concerning actions and the results of actions," (2) "responsibility with respect to roles and tasks," (3) "responsibility regarding morals," which is always attributed to an individual, and (4) "legal responsibility," which he understandably leaves aside, as the reflection on morals and morality and the legal sphere aim at different goals: the first at the good life, the latter at the creation or protection of legal peace. Lenk (1991, pp. 61ff) notes that these responsibilities may collide which makes prioritizations inevitable. He also differentiates between an inside view of the responsibility of researchers which focuses on the "ethos", i.e. the basic convictions and attitude of a researcher, and an outside view which focuses on ethics (Lenk, 1991, p. 58).

3 Problems in research ethics

Research ethics can be understood as a two-part endeavor: first, as part of ethics as an academic discipline which is usually situated in the philosophy or theology department (i.e. as part of foundational research in ethics), and second as ethics which is applied to research processes which are not connected to ethical questions (i.e. as applied ethics). Both carry the same name, yet differ in the level of reflection. This becomes a problem, when the discourse on fundamentals and the discourse concerning the application of ethics are drifting apart. Merging both understandings of research ethics into one process yields an environment in which the problem of the drifting apart disappears.

Prior to exploring the options for this merger, we need to take the possibilities of research ethics into account: Who are the actors in this field and what is done there? When people demand 'science requires ethics' or 'research needs boundaries,' they employ abstract nouns while meaning those who work in this field. Thus, research ethics will always have to consider people even when it takes institutions into account. The content of research ethics, however, is not clearly defined. The examples that can be found in literature range from how to deal with plagiarism (Rieble, 2014, pp. 11-23), fraud (Elger & Engel-Glatter, 2014, pp. 25-42), to general accounts of responsibility in the academic sphere. Some are very specific, others, such as Jonas' concept of a "Heuristic of fear"

(1984) are more general. Lenk (1991, pp. 54f) criticizes that many works in this field (not Jonas' though) are inadequately general, as they lack differentiations regarding terminology in ethics and with respect to the term responsibility.

Research ethics can be applied in three modes, if you leave out the fourth option of a proactively (in the sense of discussing actions that have not yet been conceived) acting research ethics. This is impossible as per definition ethics reflects on actions which must be there first, before ethics can meaningfully act, even if these actions are only hypothetical. Hence, ethics is always reacting.

The modes are (1) external reacting research ethics, (2) internal reacting research ethics, (3) integrated research ethics[10].

Ad (1): External reacting research ethics describes the case in which an individual or a group of ethicists evaluate the work of others. This may either be an invited or an unsolicited ethical evaluation and can be propelled by negative or unwanted consequences of research activities. It is also possible, but less common, that research ethics endorses and legitimizes a certain kind of research. Mittelstraß calls this a "repair ethics" (my transl.), which he deems better than not employing ethics at all, yet still delivering a damning indictment of human reason. Ethics then appears as degraded to checklists and a "recipe book" (my transl.) which provide advice on how to act. He castigates this idea of research ethics and ethics of science as a "technocratic" (my transl.) approach, which disregards humans as "ethical beings" (Mittelstraß, 1992, pp. 217f, 252f; 1991, 89-108). Even though Mittelstraß's account of this terminology and the way ethics is dealt with is strongly related to publications from the field of engineering, especially from the VDI (*Verein deutscher Ingenieure, Association of German Engineers*), we can see it as a general example of external, reacting research ethics, because the reflection on morals and morality is outsourced to checklists with norms which were developed externally and which display a "peculiar positivism of values" (my transl.), thus relieving researchers from independent reflection on what they do. It is also reacting in a classical way as it is only employed in the aftermath and not parallel to the (planning of the) research process.

Another version of external research ethics is the ethics brought to science by scholars from the humanities – these scholars are professionals in the field of ethics. Their ideas and responses to problems that appear in or as results of research can help recognize problems which were originally unknown or ignored, because the researchers were neither trained to recognize them nor aware of the implications of their research for areas not directly related to it. Dealing with such problems is part of the research ethicists perform, which may cause a follow-up problem we will look at when we consider interdisciplinarity.

10 Which still is reacting, yet in a different sense, as we shall see.

At this point, a digression is necessary to take a further problem into account. Körtner (2015, p. 640) hints at a moral hazard which might arise from the constellation described above: scholars from the humanities might artificially render research plans, processes, or results problematic as this provides objects for their own research, helping to obtain third-party funding and earning academic merits. This is an audacious assumption, yet as a hypothetical scenario, it seems plausible (even if it is prone to fail in the long run as such strategies can be uncovered). Here we encounter another problem, which is not focused on research alone as it is emerging in an academic or scholarly setting, in which the hunt for third-party funding has developed strange effects. External funding can be necessary for a career in academia. This explains the free rider strategy, but does not, in any way, justify it.

A way out of this moral hazard are review procedures by review boards not only for research projects, but also for research ethics-research. Yet here, again, we come to the point where we need a very first instance which cannot pursue a '*do ut des*' principle and is thus not prone to encounter a moral hazard.

Ad (2): Internal reacting research ethics describes a case in which researchers work for themselves on ethical problems they encounter or identify in the process of their research without consulting specialists. This way, no external parties who might act in their own interest come in. However, the price that researchers, as well as all the stakeholders, have to pay is that organizational blindness may render problems invisible. Internal research ethics may also raise awareness and lead to employment of external research ethics, which alleviates the problem but does not solve it.

Ad (3): Integrated research ethics does neither only accompany the research nor work alongside the research process, but is seamlessly integrated into the academic sphere, in research as well as in teaching. Students – as future researchers – thus gain knowledge and competences in ethics in their course of studies from faculty staff and not from external lecturers.

Every academic discipline has borders, which separates them from others. These borders are imaginary and result from the pragmatic decision to reduce complexity. As helpful as this reduction of complexity may be, it is an impediment to employing an integrated research ethics strategy. Ethicists are usually working in theology and philosophy departments, but overcoming these borders will allow synergetic processes. Ethics will then not be taken to other departments, but be an integral part of them. In 2005, Heinrichs, Hübner, Heinemann and Fuchs (2005, p. 39-43) named research ethics as part of the curricula in the sciences and medical studies a "desideratum" (my transl.) which, if implemented, would provide students and graduates with an insight into ethics. A similar demand was put forward by the IEEE in their proposal for *Ethically Aligned Design* (2016, p. 37f).

The establishment of integrated research ethics is a long-term project which requires structural changes in the way departments (at German universities) are organized. There is no best-practice model I know of (in 2016). In such an environment, researchers have acquired the ability to employ ethical knowledge from the beginning onward and can consult with professional ethicists in their departments, who also have a deep insight into the research projects that are worked on. These ethicists are neither outsiders nor mere consultants, and not to mention they are not chaplains for others but established and equally entitled members of the research groups. Once these structures are established, a culture of interdisciplinarity can develop and unfold, broadening the scope of research processes and thus providing structures which take the research's overall impact on society into account. Ethics will then not be perceived as something which was imported or dragged in from outside, either from philosophy or theology departments or from other fields. The latter would be the case when concepts from bioethics are introduced to social sciences. This creates incompatibilities and allows ethics to appear as a burden researchers have to bear (Israel & Hay, 2006, p. 1).

Ethics, as an academic discipline within academic disciplines, can moderate processes and function as a catalyst, but only if it is not employing prefabricated ideas and regulations. Instead, it has to be developed within an area of research, not as an application of ideas but from the very beginning. Any ethical framework that is imported might be seen as a handy tool at first sight, but once problems with this tool arise, a custom-tailored solution will be even handier.

4 Problems with interdisciplinarity[11]

Ethics is a wide field in itself and even when focused on research and science it is still complex. Professional knowledge from academic disciplines and professional knowledge that provides orientation from the field of ethics have to be brought together. The usual way to organize this is through an interdisciplinary approach – which is easily called for but hard to achieve. The pitfalls that come along with interdisciplinarity need to be known in order to avoid them.

Looking at professional knowledge, we can assume that researchers have professional knowledge of their fields; sometimes they might be the only ones who know about the problems in this field. The professional ethicist is, most often, a non-specialist in professions other than ethics (and philosophy or theology, respectively).

11 I am grateful to Christian Schwarke for outlining these issues and discussing them with me.

Three questions arise from these circumstances: one deals with the questions of understanding and perception of matters and problems, another with questions of self-perception, and the third one with questions concerning the institutionalization of ethics.

(1) Understanding/Perception: Leaving behind the idea that there are "two cultures" in academia which lack the ability of mutual understanding (Snow, 1993), we can still find problems which impair the possibility of a productive coexistence. This problem is caused by the way researchers speak and explain. To understand an academic discipline that has its own terminology and professional language, outsiders not only need a dictionary – they have to learn a new language. Every discipline seeks to grasp its objects of research as concise as possible with its own 'tools', which leaves little room for knowledge from other disciplines. This might yield the effect that researchers deem their understanding of matters as best or most suitable while they ignore important aspects that remain uncovered by the approaches they employ.

Another important factor is the insurmountable asymmetry in debates in ethics of science and research ethics: Ethicists make other researcher's work (mostly the work of those who work empirically) an object of their own work. Yet, that does not work the other way: Ethics cannot be an object in this process.[12]

(2) Boundaries of professions: Furthermore, interdisciplinarity does not simply mean collaboration, but it means merging fundamental work. This is not the best situation, but this problem can only be solved if one person carries both of the following attributes: a professional ethicist and a professional in a certain area of research. Yet those who are both might have to live with their colleagues who happen to think that they do not work in 'real' science or do not fully belong to a certain academic discipline. This can result in an obstruction of interdisciplinary projects. This problem of acceptance is caused by normative consequences of an understanding of the imaginary boundaries between professions.

(3) Institutions: The third complex of problems is connected to the question as to whether it is desirable to institutionalize ethics. On the one hand, this is helpful because by means of this, ethical questions receive a legal frame and can step out of field of arbitrariness. Ethics, under these circumstances, would be an established part of academia in both science and research. On the other hand, institutions invite others to outsource their responsibility. But what we need are scientists and scholars who are aware of ethical questions that are

12 Even if we look at the example of a moral hazard Körtner describes, those affected will not be able to respond to that (illegitimate) behaviour without employing ethics, in which they are not experts.

related to their research. And here another problem comes in: Whichever question one hands over to an institution is dealt with in that institution according to the rules of that institution and the result will also be following these rules. These rules are not necessarily the rules of science.

Furthermore, institutionalizing ethics also creates the moral hazard described by Körtner, as more availment of such an institution means more (yet illegitimate) legitimization, which is not only an obstacle to research processes but also – if uncovered – a great disservice to the academic sphere.

5 The digital age

Now, we need to explore the term 'digital age,' which is similarly complex as the term 'research ethics'. Nevertheless, in this paper we can only roughly sketch the idea behind this term. The digital is not a term that has come up recently, nor does it have a clear definition. All of us have a basic understanding of what is meant when someone talks about 'the digital age.' However, if we sat down and gave a concise account of what 'digital age' means to each of us, chances are that there are as many different descriptions as there are people writing answers.

Not all is new or different in the digital age. Stalder's (2016) diagnosis of the "culture of digitality" (my transl.) is best served to get an idea of what has changed. The culture of digitality, according to him, is a process that has started in the 19th century and has accelerated in the 1960s, leading to a society and culture in which "social action is more and more embedded in complex technologies, without which these processes are hardly imaginable and not manageable at all." (Stalder, 2016, p. 11). He identifies "three forms" that are "characteristic" (my transl.) of this culture: (1) Referentiality, meaning the reuse and continued use of existing cultural artefacts, (2) communality, as a description for collective efforts to create and preserve semantic frames, to generate various courses of action, and to exploit resources, and (3) algorithmicity, meaning "automated decision making processes", and thus practices to reduce complexity and to produce information, by means of processing and managing data that is obtained by machines (Stalder, 2016, p. 13). The key word here is big data.

The digital age not only provides new research methods, but has also generated new research areas and questions as it has a major impact on our society. The claim that research needs ethics was not unheard of prior to the digital age, yet in the days of social networks, surveillance and tracking by public agencies and private companies this topic has garnered attention, as the analysis of these

data can yield moral problems concerning privacy even if the data handling is covered by the law.[13] There is – at least in some subgroups of our society – an awareness for problems attached to these new possibilities. Helbing (2015, p. 4) hints at another characteristic of the digital age: the impossibility to attribute responsibility to individuals. The emerging new era brings along disruptive features which call for regulations.

6 Research ethics – an impairment to progress?

Research ethics, if employed as unbiased and open-minded, might stop or slow down research processes. This can be seen as an impairment to progress since the decision to not follow a certain path means that its possible result will remain unknown. This is the price not only the researchers and the scientific community must pay, but society must also be willing to pay this price. The decision against a way of gaining results, however, does not mean that this strand of research will be stopped entirely. The development of induced pluripotent stem cells (iPSCs) to replace embryonic stem cells in research shows that a moratorium or a strict limitation to research possibilities may fuel the development of alternatives (Klimanskaya et al, 2006; Devineni et al., 2016). Social scientists might face a similar situation in which they will have to take detours to obtain the results they look for.

Taking it one step further: Can the will to know per se be already morally undesirable? If we denied this, knowledge would be neutral. Knowledge, however, does not exist independently from human beings, who are moral beings. Knowledge is – if at all – in theory neutral. This may evoke a conflict concerning academic freedom, yet a closer look at this matter reveals that it is (ideally) academia itself which imposes restrictions. Questions like these were still "new land" in the sciences thirty years ago (Ströker, 1984, pp. 10f).

Should we impose general restrictions for some branches of research? This is neither useful nor reasonable. As described above, ethics can only react. A prospective general restriction could not be categorized as a reaction, hence general restriction cannot be wanted by ethics. (This does not mean that we should not follow principles, it means that we should not identify areas of research as generally unethical.) Research ethics is – in the end – an evaluative process which analyzes cases. The decision against a legally unproblematic

13 Think of biometric passports and passenger name records, web trackers, fitness trackers, cashless shopping – all of this creates large amounts of data which allow to identify individuals, which some deem helpful for catching criminals, whereas others hint at the price we pay for this – the loss of privacy and the possibility of abusing these data in various way.

research project due to the outcome of risks analyses should always be the "final means" (DFG & Leopoldina, 2014, p. 14). It is the researchers who bear the burden of taking responsibility. They ultimately decide, which is why they should not only be able to assess projects from their discipline's view. Taking a paramount view at cases, from as many perspectives as possible, is a competence they require to evaluate situations and risks without being unnecessarily overly restrictive or too permissive. It sometimes is a fine line, but they are professionals and with appropriate training, they will be capable of coping with these issues.

7 The integrated approach to research ethics in the digital age

As stated above, the digital age provides new research methods and possibilities that will foster developments in the social sciences. These methods are not neutral regarding morality – employing them, even if out of curiosity, may result in problems which could lead to public distrust in academic endeavors. Safeguarding these projects requires an ethics that suit the new situation. This ethics is best developed within this new environment to avoid the problem described by Israel and Hay (2016, p. 1). The way biomedical ethics wants researchers to work with humans can be roughly transferred to social sciences. However, there are limits to this approach. Take for example an automated assessment of tweets by a large amount of people. There is no *easy* way to contact each individual to ask them for permission and to obtain an informed consent. This is one example of problems that arise when the amount data that is used becomes larger.

Privacy becomes more important as more data related to individuals is stored either accessibly to the public (as in social networks) or only accessible to the people who collect and process the data. Furthermore, experiments carried out without informing those who (involuntarily or unknowingly) take part in it, also create a problem. We would expect that a publication of the findings is difficult, however, Kramer's, Guillory's, and Hancock's article was published in the *PNAS* (2014). Retrieving this article online leads to a document that has an "Editorial Expression of Concern" placed in front of it (Verma, 2014, p. 10779). The editor hints at the "Common Rule" of the US Department of Health and Human Services Policy for the Protection of Human Research Subjects, which PNAS has adopted, but also points out that this rule is not applicable to Facebook as it is a private company. "It is nevertheless a matter of concern that the collection of the data by Facebook may have involved prac-

tices that were not fully consistent with the principles of obtaining informed consent and allowing participants to opt out." (Verma, 2014, p. 10779).

This statement is, to my mind, the easy way out. Either there is doubt – then they should refrain from publicizing the article or there is not, then a statement such as Verma's is unnecessary. This situation shows that there was no procedure put in place to deal with this case. To avoid situations such as this one, it is necessary to embrace research ethics not only in the data collection and processing processes but also in the places that distribute other's works. This once again emphasizes the need of an integration of ethics. Research ethics is then ideally understood not as applied ethics but as the development of ethics as a collaboration of all the stakeholders in research for all stakeholders in research – rendering ethics itself an interdisciplinary endeavor (Schwarke, 1994, p. 11).

If those who are involved do not only follow rules and apply prefabricated ethics to their work but develop and employ methods to evaluate what they do on their own, they will consider the broader picture, thus taking a wider circle of stakeholders into account. This will not eliminate the potential of conflict, but it will create a culture of research and an environment in which other's interests are considered from the beginning. This does not come for free but it will be beneficial: researchers will profit from an increased trust in their work, those whose taxes are invested in research programs will know that the people who spend the money are well trained.

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What's Responsible for the Retraction Boom?

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Keywords: scientific integrity, retraction

Abstract

In this chapter, we discuss whether the seeming increase in the amount of misconduct in science is a real phenomenon, and how the structures and processes of scientific publishing, as well as of the scientific community, may contribute to this.

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https://doi.org/10.1007/978-3-658-12909-5_3

1 Introduction

Elisabeth Bik loves to look at pictures – but not for the reasons one might think. Bik, a microbiologist formerly of Stanford University in California, has a keen eye for image manipulation in science, and she has used that skill to demonstrate a rather stunning fact: Roughly 4% of published papers in certain fields contain problematic figures, roughly half of which appear to have been "inappropriately manipulated."

Of course, the phrase "inappropriately manipulated" implies that there is such a thing as appropriate tinkering, which could entail routine cropping and other tidying up that can make a figure look more convincing to readers. Yet those steps are intended to alter the aesthetic presentation without changing the intellectual significance. What Bik's results appear to suggest is occurring is deliberate -- as well as inappropriate -- manipulation.

Why would scientists become graphic artists? For the following obvious reasons: to make their findings look more robust so that they catch the eye of an editor or peer reviewer at a high-impact journal so that, as the ultimate goal, they have a better chance of winning a promotion and more grant funding.

Equally alarming, Bik – who painstakingly analyzed more than 20,000 articles by hand to reach her conclusions – discovered that the number of suspect images appears to have surged roughly four-fold since the turn of the millennium – from about 1% of articles she examined from 2000 to nearly 4% of papers published in 2014.

Of note, the likelihood that a paper will have a problematic image depends significantly on the origin of its authors. Papers from China and the United States are far more prone to such red flags as those from other countries, while those from authors in Australia and Spain, for example, appear less affected.

As Bik and her colleagues reported in 2016 in the journal mBio (Bik, Casadevall, & Fang, 2016) the fault here lies with both the researchers who play loose with their images and scholarly journals, many of which seem oblivious to the potential for such tinkering. "The marked variation in the frequency of problematic images among journals suggests that journal practices, such as prepublication image screening, influence the quality of the scientific literature," Bik and her co-authors wrote.

But was has become of those problematic papers? Retractions have and always will be a rare event in scholarly publishing, accounting for only a tiny fraction of the 1.4 million (and climbing) scientific papers released every year. Yet the number of retractions indexed in MEDLINE exploded over the past decade, rising from a few dozen annually in the early 2000s to 467 in fiscal 2013, data show (McCook, 2016). The number leapt to 684 in Fiscal Year 2015,

but fell back to 664 in 2016. Whether this loss of momentum represents a true plateau or a brief pause remains to be seen.

Two of Bik's co-authors -- Ferric Fang, of the University of Washington, and Arturo Casadevall, now of the Johns Hopkins University -- along with R. Grant Steen, were instrumental in fostering a critical shift in the understanding of what is driving the recent surge in the number of retractions from the scientific literature. (Fang is a member of the board of directors of our parent nonprofit organization, The Center For Scientific Integrity.) As they reported in a widely-cited 2012 article in the Proceedings of the National Academy of Sciences, misconduct accounts about two-thirds of retractions of scientific papers, three times the figure proposed in earlier studies (Fang, Steen, & Casadevall, 2012). Moreover, in an echo of the Bik study, the percentage of articles retracted for misconduct rose approximately 10-fold between 1975 and 2012, according to Fang, Casadevall and Steen.

2 What's Responsible for the Retraction Boom?

Is misconduct itself increasing? The Bik et al. study suggests it might be, but the jury is still out. Surveys suggest that about 2% of scientists admit to behavior that would constitute misconduct, such as fudging results to nudge an experiment in the desired direction, but at least until 2009, that percentage did not appear to be changing over time (Fanelli, 2009). Meanwhile, the apparently low rate of misconduct decades ago may have been artificially suppressed by the failure of journals at the time to adequately report cases of fraud and other inappropriate actions by authors in retraction notices. Indeed, until relatively recently, journals frequently allowed authors to write their own retraction notices or issued uninformative statements that simply noted the retraction of a paper without identifying the reason for the move. Obviously, neither of these options should be considered a best practice.

In any case, many recent papers that deserve to be retracted go un-flagged, while journals have not thus far evinced the appetite for purging their archives of old articles they ought to shed. Some editors complain that their job is to preserve the integrity of their pages in the present, that they are not archivists, that studies from, say, the 1980s are largely irrelevant anyway so why bother. (Of course, this argument eradicates the meaning of science entirely, which is the accumulation of knowledge, and subtly reinforces the deeply pernicious practice of glorifying the published paper even over the valid article.) Others maintain (with some validity) that they have neither the time nor resources to devote to such a project.

Consider the experience of David Allison. Allison, a nutrition researcher at the University of Alabama at Birmingham, and his colleagues recently demonstrated how difficult it can be to move editors to retract or correct papers with obvious – and actionable – flaws. Writing in Nature in 2016, Allison and his colleagues described their experience contacting editors to get them to pull or correct 25 articles with major errors that he had identified (Allison, Brown, George, & Kaiser, 2016). Only one journal issued a retraction notice as a result of the prompting. A few journals issued corrections, but did not retract the articles. "Too often, the process spiraled through layers of ineffective e-mails among authors, editors and unidentified journal representatives, often without any public statement added to the original article," Allison's group wrote in frustration.

In other words, the bottom line is that even with the burgeoning scholarship around the subject of retractions in science, the data are and most probably will remain incomplete. Still, there is good news: some journals do appear to be taking problematic papers more seriously. Major publishers now screen submitted manuscripts for signs of plagiarism, a process made possible by the availability of software that can detect suspiciously similar text between the submission and articles already in the literature. Similar efforts are being made to bulk-screen images for signs of manipulation, duplication or other inappropriate practices. However, these technologies are far from being available to most journals.

Finally, researchers in certain fields, such as anesthesiology, neurology, and psychology, are using the tools of forensic analysis to look for manipulated or fabricated data. The use of this approach is most vividly apparent in the cases of Yoshitaka Fujii. Fujii, a Japanese anesthesiologist, has lost 183 articles to retraction over concerns that he concocted his data (Marcus, 2013). A statistical analysis of his work had revealed astronomically low odds that Fujii's results were the result of real experiments (Carlisle, 2012). In other words, he almost certainly made them up. Researchers then used the same approach to assess the studies of one of Fujii's frequent co-authors, Yuhji Saitoh (Carlisle & Loadsman, 2016). They found overwhelming evidence that Saitoh, too, had fabricated his data. At the time of this writing, however, just one of Saitoh's articles has been retracted (Saitoh, Sashiyama, Oshima, Nakata, & Sato, 2012).

3 Conclusion

Progress notwithstanding, journals still have room to improve. It's important to note that Bik and her co-authors had a lot of trouble publishing their findings.

Their manuscript was rejected multiple times, despite having noted scholars as authors.

In their Nature article, Allison and his colleagues note what they consider to be a half-dozen critical issues in science publishing, failings that could easily be righted, and quickly (Allison, Brown, George, & Kaiser, 2016). Editors move too slowly to correct or retract, they claim; finding where to send criticisms of papers is difficult, sometimes maddeningly so; informal concerns are rarely addressed – and lead to action rarer still; journals do not like taking action even when confronted with "invalidating" errors; whistleblowers often face backlash; and getting access to raw data from authors is much more difficult than it should be.

Although as we have noted, science is making strides in policing itself. Yet, real progress -- the sort of paradigm shift that many observers believe is necessary -- will not come unless and until researchers begin to de-emphasize the published paper as the supreme metric of scholarly productivity. Without such a change in philosophy, the incentives to cheat will be too tempting for many to ignore.

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Data Protection Laws, Research Ethics and Social Sciences

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Keywords: Data Protection Law, Research, Informed Consent, Anonymous Data

Abstract

This paper examines fundamental principles of European data protection law and subsequently uses two case studies in order to illustrate some data protection issues arising within the context of research in social sciences.

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https://doi.org/10.1007/978-3-658-12909-5_4

1 Introduction

It is beyond doubt that research on humans in social sciences is much less risky than biomedical and psychological research, which may cause physical and mental harm to test persons. Because of tragic incidents in the past, biomedical research projects have now been regulated by complex rules, procedures and supervisory authorities, such as ethic commissions, in order to minimise the risks associated with research projects.

However, academic research in the field of empirical social sciences may also involve risks for test persons, mainly with respect to privacy violations. Until recently, the discussion on privacy issues and data protection within social sciences research has not attracted much attention. This is changing due to new challenges caused by technical developments such as enhanced possibilities to aggregate and analyse huge sets of data, in particular big data analyses, increasing the probability to identify individual test persons, and by the growing amount of publicly available data, e.g. via social networks. Furthermore, new questions arise in the context of data documentation and of granting open access to research data, as may be required by scientific journals or research funding organisations (Kämper, 2016, p. 4; Schaar, 2016, p. 2).

On the one hand, these technical developments pave the way for new approaches to empirical research, but on the other hand, they make it necessary for researchers, research organisations and legislators alike, to examine whether the existing legal and organisational framework still achieves an adequate balance between research and privacy interests.

Therefore, this paper examines fundamental principles of German and European data protection law and subsequently uses two case studies in order to illustrate some data protection issues which are relevant in the context of social science research.

2 Data Protection vs. Freedom of Science

It is worth recalling that the freedom of scientific research, as well as the protection of privacy and of personal data, is protected as a fundamental right by national constitutions (GG[2], Art. 1, 2 (1) and Art. 5 (3)) and also by the European Charter of Fundamental Rights (Art. 7, 8 and 13). On one hand, everyone has the right to the protection of personal data concerning him or her, whereas on the other hand, scientific research shall be free of constraints. As these two

2 German Constitution.

conflicting fundamental rights are of equal value, their application has been specified by legislative measures in order to find an adequate balance between the freedom of science and data protection in each individual case.

3 Basic Principles of (European) Data Protection Law

As legal situations may differ significantly from country to country, this paper only focuses on the legal situation in Germany and the changes, which will be brought about by the *EU General Data Protection Regulation* in 2018 and will affect all Member States of the European Union.

For the time being, the general framework is set by the *EU Data Protection Directive* from 1995, which has led to a partial harmonisation of the national data protection laws of the EU member states. In Germany, data protection is regulated at the individual state level by the "*Landesdatenschutzgesetze*"[3] and at the federal level by the "*Bundesdatenschutzgesetz*" (BDSG). These general data protection laws are supplemented by many more specific data protection regulations, e.g. in the area of public archives, social security etc.

From 25 May 2018 onwards, however, the data processing in the Member States of the EU falling within the scope of Union law will be governed by the *General Data Protection Regulation* passed in April 2016. The aim of the General Data Protection Regulation, subsequently referred to as GDPR, is to ensure a consistent and high level of protection in spite of the rapid technological developments and, at the same time, to remove the obstacles to cross-border flows of personal data within the European Union (GDPR, Recitals 6ff). From May 2018 on, all data processing within the Member States will principally be governed by the GDPR, which gives only a narrow margin of manoeuvre for Member States to retain their national rules. At the moment however, there are a lot of insecurities as to the interpretation of the provisions introduced by the GDPR.

3.1 Personal Data

Data protection laws only apply to "personal data", relating to an identified or identifiable person. As set out by Art. 4 (1) GDPR, an identifiable person is "one who can be identified, directly or indirectly, in particular by reference to

3 For example in Saxony the "*Gesetz zum Schutz der informationellen Selbstbestimmung im Freistaat Sachsen*" (Sächsisches Datenschutzgesetz – SächsDSG).

an identifier such as a name, an identification number, location data, an online identifier or to one or more factors specific to the physical, physiological, genetic, mental, economic, cultural or social identity of that natural person". Data protection law applies to all kinds of personal data, regardless of their importance, their sensitivity and regardless of the question whether the data have already been made public by the person concerned.

In contrast, the processing of anonymised data is not subject to the restrictions posed by data protection law (GDPR, Recital 26). So when a researcher collects only anonymous data during a research project or when he or she deletes all identifiers, thus removing all possibilities to identify the data subjects (e.g. Kinder-Kurlanda & Watteler, 2015, pp. 5ff), data protection laws are (no longer) applicable. However, the GDPR imposes very strict standards by defining data as anonymous only when the data subject is no longer identifiable and cannot be re-identified by any reasonable means available, now or in the future, due to technical developments (GDPR, Recital 26). It is obvious that the continually enhancing possibilities to search and analyse data pose a major challenge to an effective data anonymisation.

Anonymous data have to be distinguished from pseudonymised data. According to Art. 4 (5) GDPR, "pseudonymisation" means the processing of personal data in such a manner that the personal data can no longer be attributed to a specific data subject without the use of additional information, which is kept separately. So data is pseudonymous when all identifying information is stored at a separate place and when a person's name and other identifying characteristics are replaced by a label in order to preclude identification of the data subject or to render such identification substantially difficult. Personal data which have undergone pseudonymisation, but still can be attributed to a person by the use of additional information, are still to be considered as personal data (GDPR, Recital 26; cf. also Albrecht & Jotzo, 2017, p. 59; Molnár-Gábor & Korbel, 2016, p. 277). Thus, data protection laws have to be obeyed also when dealing with pseudonymised data. However, the pseudonymisation of data helps to reduce the amount of processing of personal data and, therefore, to comply with the principle of data minimisation.

3.2 Principle of data minimisation

As a fundamental principle, data processing shall be limited to the minimum amount of data necessary in relation to the purposes for which they are processed (cf. e.g. Art. 5 (1) c) GDPR). This implies e.g. that personal data which are not relevant for the research purpose shall not be collected at the outset. The principle of data minimisation has not only an impact on the quantity, but also on the quality and on the intensity of data processing (Schulz, 2016, para. 36ff).

For example, both the Saxonian Data Protection Act, which is applicable to Saxonian Universities such as the TU Dresden, as well as the GDPR stipulate that data used for research purposes may not be related to identifiable persons, but have to be anonymised or pseudonymised when the purposes of the search can be fulfilled in that manner (SächsDSG, § 36 (2); GDPR, Art. 89 (1)).

Furthermore, data protection acts may set strict rules as to the publication of data. For instance, according to the Saxonian Data Protection Act (SächsDSG, § 36 (4)), personal data may only be published if either the data subjects have given their consent (*see infra* 3.4) or alternatively if it is absolutely necessary to include personal data while presenting research findings on events of contemporary history, provided that the publication does not violate legitimate interests of the data subject. If neither of these alternatives applies, the publication may only comprise anonymised data (*see,* on that subject, *supra 3.1*). These legal aspects also have to be considered when research funding organisations mandate a certain level of data sharing in order to foster an "open science" approach, and therefore require the publication not only of the research findings, but also of research data.

Another effect of the principle of data minimisation is that personal data have to be deleted when they are not required any more. However, Art. 5 (1) e) GDPR exempts personal data which will be processed for scientific or historical research purposes from this "storage limitation".

As this issue shows, the legislative aim of reducing the amount of personal data – with regard to both quantity and quality – may conflict with the very nature of research in social sciences, which depends on the use of personal data. So in many cases it e.g. cannot be assessed at the outset which data will be of relevance for the research purpose. This is especially true for the application of data analytics methods to large amounts of data.

3.3 Legal Basis for Data Processing

Data processing is only lawful if the data subject has given his or her consent or if the law permits the data processing. For the time being, research done by German universities is regulated by the Data Protection Acts of the federal laender. So e.g. the Saxonian Data Protection Act stipulates that personal data may only be processed if this firstly is necessary for scientific research, especially if the aim of the research cannot be reached otherwise, or only through disproportionate efforts, and if secondly the research interest weighing in favour of the data processing prevails over the privacy interests of the persons concerned (cf. SächsDSG, § 36). Therefore, researchers carry the burden to justify that it is necessary to collect and process personal data in the proposed

quantity and quality and that the research interests predominate privacy interests.

After the GDPR will have become applicable, the legal basis permitting the data processing for research purposes will have to comply with the conditions set out in Art. 5 and 6 GDPR (Albrecht & Jotzo, 2017, p. 81). Because of this, national data protection laws will have to be checked and eventually to be reformed. As the GDPR leaves a certain margin of appreciation to the EU member states, however, it may still be the case that in this respect national data protection laws within the EU will not be fully harmonised.

3.4 Informed Consent

When the processing of personal data for research purposes is not permitted by the law, it is only allowed if the person concerned has given his or her consent. Consent is only valid if it is given on a free and voluntary basis (GDPR, Art. 4 (11)) and if the data subject has received concise, transparent, intelligible and easily accessible information on the purposes and the scope of the data processing (GDPR, Recital 32).

The requirement of adequate information is supposed to make the data subject understand the context and the consequences of his authorisation, thus enabling the data subject to make conscious, rational and autonomous choices about the processing of his personal data. However, one point of criticism raised against the concept of "informed consent" is that it may lead to an "information overload" and thus may also have counterproductive effects (Schermer, Custers & van der Hof, 2014, p. 177). Especially when highly complex data processing is involved, it is a very demanding task to draft the information in such a way that it is concise and transparent on the one hand as well as intelligible on the other hand.

According to German data protection law, consent has to be given in writing, unless these formal requirements get into conflict with research interests or unless other special circumstances apply (BDSG, § 4a (1), (2)). However, the need for consent to be made in writing will be lifted by the GDPR. It also has to be taken into account that a test person has the right to withdraw his or her consent at any time (e.g. GDPR, Art. 7 (3)).

As a matter of principle, the data may not be processed in a manner that is incompatible with the purposes for which the data have been collected (GDPR, Art. 5 (1) b); cf. also GDPR, Art. 6 (4)). Thus, the law tries to ensure that personal data is not processed for a purpose which was unforeseeable for the data subject at the moment when consent was given (Schantz, 2016, p. 1844). Generally speaking, any secondary uses are prohibited.

The scope of this exclusion depends on whether the research purposes included by the declaration of consent are construed narrowly or widely. Until now, data protection law has favoured a very narrow construction (Kühling & Martini, 2016, p. 451). Some data protection acts of the federal laender explicitly limit the use of the data to the very research project for which the data have been collected (e.g. NDSG[4], § 25). In this case, any re-use of data in the framework of another research project would be prohibited. This example shows that the declaration of consent and the information provided to test persons have to be drafted very carefully in order to reflect the future uses of the collected data.

However, in the long run, the exclusion of secondary uses will be lifted for research purposes. According to the GDPR, any further processing for archiving purposes in the public interest, scientific or historical research purposes or statistical purposes shall not be considered to be incompatible with the initial purposes (GDPR, Art. 5 (1) (b)). This provision has been criticised by the forum of German data protection officers since it would permit data processing for secondary uses almost without limitations (Datenschutzkonferenz, 2015, para. 2).

Furthermore, the GDPR specifies that data subjects should be allowed to give their consent not only to a specific research project, but also more generally to certain areas of scientific research when this is in line with recognised ethical standards. However, the GDPR also states that data subjects should have the opportunity to give their consent only to certain areas of research or parts of research projects to the extent allowed by the intended purpose (GDPR, Recital 33). In this respect, the GDPR will grant a substantially more generous legal framework to the processing of data that have been collected with the consent of the persons concerned.

3.5 Sensitive Data

With regard to especially sensitive data, such as personal data revealing racial or ethnic origin, political opinions, religious or philosophical beliefs, trade union membership, genetic data, biometric data for the purpose of uniquely identifying a natural person, data concerning health or data concerning a natural person's sex life or sexual orientation, data protection law sets even more restrictions. For example, the GDPR, as a matter of principle, prohibits these data to be processed. However, in order to promote scientific research, the GDPR permits the processing of sensitive data, if this is necessary for archiving pur-

4 Data Protection Act of the Federal State of Lower Saxony

poses in the public interest, for scientific or historical research purposes or statistical purposes.

4 Two Case Studies

The paper will now discuss two research projects in order to illustrate some issues arising with regard to social science research. Although both research projects have been conducted in the United States, this paper will only analyse the legal situation from a European perspective. It is neither intended to analyse the discussion within the United States nor to examine the US-American legal framework, which may differ from the German and the European legal regime.

4.1 The "Tastes, Ties and Time" Project

In the "Tastes, Ties and Time" Project, a group of researchers from Harvard University and the University of California, Los Angeles collected profile data from the Facebook accounts of an entire class of college students from a US university. As the dataset represents nearly a complete cohort of college students, it allows the observation of how the social network changes over time (see for a detailed account of the study Lewis, Kaufman, Gonzalez, Wimmer and Christakis, 2008, pp. 330ff; see for an in-depth legal and ethical analysis Zimmer, 2010, p. 315).

Details of the project

The students' profiles were sampled at 1-year intervals over a period of four years. The dataset included demographic, relational, and cultural information on each student. Research assistants collected the data manually from the students' Facebook pages and only included data that were accessible to them by default. In addition, the researchers obtained each student's official housing records from the university.

The researchers had requested the consent of Facebook and of the college, as well as of the college's committee on the use of human subjects. However, the students involved had not been informed about the research project and had not been asked for their consent.

As the project had been funded in part by the National Science Foundation, which mandates a certain level of data sharing, the Facebook dataset was planned to be made public in four waves. The researchers had taken various precautions in order to protect the anonymity of the students. The researchers

subsequently removed e.g. the students' names, delayed the release of the cultural interests and required other researchers to agree to certain terms of use.

Despite these efforts, however, after the publication of 1,700 Facebook profiles during the first wave, the college in question could very quickly be re-identified simply by accessing the explanatory codebook, which included detailed descriptions and frequencies of the various data elements. A simple internet research revealed that only Harvard College offered the specific variety of the subjects' majors. Apparently, no individual subjects were identified, but that could also easily have happened, e.g. if some nationalities were only represented by one person.

Anonymisation

At first, this case study draws the attention to the fact how difficult it is to achieve effective anonymisation. Although the students' names were replaced by unique identification numbers and the e-mail addresses and phone numbers were removed, individual students could have easily been identified due to the fact that the dataset still included each subject's gender, race, ethnicity, hometown state and major. This re-identification might have required some extra knowledge of that kind that e.g. the class of 2006 included just one German student. However, these facts can easily be searched for in external sources, such as newspaper articles on enrolment etc. If an individual student had been identified, then very private issues such as political views or sexual preferences might have become obvious, resulting in a significant breach of privacy (Zimmer, 2010, p. 319).

As stated above (*see supra* 3.1), in legal terms, data is only anonymous if the data subject is no longer identifiable and cannot be re-identified by any reasonable means available now or in the future, even not by using external sources of knowledge. According to these standards, the researchers involved did not anonymise, but only pseudonymised the data. Thus, according to the GDPR, the data are still to be treated as personal data and therefore underlie the restrictions of data protection law.

If a complete and irreversible anonymisation of the data is impossible without causing the data to lose their scientific value, as might be true in this case, then – according to the German and GDPR legal framework – there is a need to balance whether the research interests prevail over the students' privacy interests. To my mind, it is difficult to argue that the act of publishing the dataset was in line with German data protection law and the GDPR – especially taking into account that the Facebook dataset may include also sensitive data e.g. on the sexual orientation. Even if the institution funding the research project mandated the publication of all research data, a prohibition to publish per-

sonal data imposed by data protection law would take precedence over any possibly conflicting open data-obligations.

Use of "public data"?

As a second issue, this case study raises the question under which conditions data may be used for research purposes without the persons' consent, if the data have been made public by the persons concerned, e.g. in telephone directories, on websites or in social networks. On one hand, one can argue that – as the data are already public – not much harm can be done to the persons concerned. On the other hand, it may still go against the person's interests if his or her data are used by researchers in new settings and contexts. Furthermore, some internet users even may not reflect on the question or may not even know which information will actually be made public. Over and above, even if the data have been made public with the full knowledge of the person concerned, their use nevertheless impinges upon the person's ability to control the flow of personal information.

German data protection law acknowledges the general interest to process public data. As fundamental rights grant the freedom to inform oneself by using and saving publicly accessible sources (cf. e.g. GG, Art. 5 (1); European Convention on Human Rights, Art. 10; EU Charter of Fundamental Rights, Art 11), it must also be permitted to save any personal data included in these sources (Gola, Klug, Körffer, 2015, para. 80; Wolff, 2016, para. 32). Data protection laws are applicable also when public data are processed. However, in a number of provisions, the processing of public data is deemed to be permitted in specific situations provided that the data processing does not infringe legitimate privacy interests of the data subject. Thus, in the specific cases enumerated by the law, there is a priority rule pleading for the admissibility of the data processing, subject to a balancing of the interests involved (cf. e.g. BDSG, § 14 (2) no. 5, § 28 (1) no. 3, (3) no. 1). Furthermore, the unlawful processing of public data is not considered a summary offence and is, therefore, not subject to any fines (cf. BDSG, § 43 (2)).

However, as far as can be seen, the special provisions on data processing for research purposes do not explicitly mention, as a criterion, whether the data have been made public, thus leaving a grey area. Yet, it is a well defendable position to argue that the publicity of the data has to be taken into account also in this context. As discussed above, researchers have to establish that the research interest prevails over the privacy interests of the persons concerned. The publicity of the data constitutes a strong argument speaking in favour of the admissibility of the data processing, but there are also other factors to be reflected in the course of this consideration, such as the context, the kind of data,

the intensity of the data processing etc. In order to create more legal certainty, it would be desirable if the German legislator used the upcoming reform in order to introduce a priority rule, also in the context of research, by stating that data which have been made public by or with the consent of the person concerned may be used for research purposes, unless this violates legitimate privacy concerns.

However, it also has to be considered that even if the processing of the data in the course of the project may be permitted, this may not be the case for the publication of the data. At least under the current legal framework, publication of the research findings – as opposed to the research itself – may on principle only include anonymised data and embrace personal data merely as an exception, if this is indispensable for the presentation of research findings on events of contemporary importance (*see supra* 3.2).

Moreover, it is a very tricky question to figure out which data can be considered to be public. It goes without saying that data, which due to privacy settings are only accessible to a limited number of persons, have not been made public. On the other hand, information accessible even to unregistered users are classified as public. However, some voices in academia argue that any website or social network requiring a registration cannot be categorised as public, even if everyone can sign up free of charge (Wolff, 2016, para. 83). This example shows that there are many shades of publicity and it remains uncertain which nuance can be considered as public in the legal sense.

These difficulties also come into play with regard to the case study. It has been called into question whether the data published by the students on Facebook were made public in the sense of being accessible to everyone. The data collecting was conducted by research assistants belonging to the same university. So if the students had chosen in their privacy settings to make their profiles only accessible to fellow students belonging to the same university, the data would be available only to a limited public, but still be accessible to the research assistants (Zimmer, 2010, p. 318).

Transmission of data from university to researchers

The case study yet raises a third issue regarding the housing data and the students' private e-mail addresses conveyed to the researchers by the university. Presumably, the data processing for administrative purposes by the university itself is covered by the students' informed consent. However, their transmission and use for scientific purposes constitute an unauthorised secondary use (Zimmer, 2010, p. 322).

As opposed to the current legal framework, the GDPR will permit data processing for research purposes, even if this is incompatible with the initial

purposes (GDPR, Art. 5 (1) (b); *see supra* 3.3). So, this example shows how the GDPR will facilitate research by uncoupling the legal permission from the purpose of the consent given by the individual.

4.2 Behavioural Research on Facebook

As second example, I would like to refer very briefly to a study conducted by a team of in-house data scientists from Facebook on "emotional contagion" (see for details Kramer, Guillory, Hancock, 2014, pp. 8788ff).

Details of the project

In this study, the researchers withheld either negative or positive posts in news feeds in order to observe the effects on users' emotions. The study came to the result that emotional states can be transferred to others via "emotional contagion". When the amount of positive expressions was reduced in an individual's newsfeed, the individual produced fewer positive posts, and rather produced more negative posts. When negative expressions were reduced, the opposite pattern occurred.

Informed consent?

Firstly, this case study raises the question whether the manipulation of the posts by the Facebook scientists may have been permitted by an informed consent. Nowadays, Facebook's "Data Policy" explicitly refers to the fact that Facebook conducts surveys and research, tests features in development, and analyses information to evaluate and improve products and services, develop new products or features, and conduct audits and troubleshooting activities (Facebook, 2016). Every user who signs up for Facebook is asked to indicate that he or she agrees to the terms of use and Facebook's data policy.

Generally speaking, consent to data processing may also be included in terms of use. However, as explained above (*see supra* 3.4), permission is only valid if it is an informed consent, i.e. if the data subject has received concise, transparent, intelligible and easily accessible information on the purposes and the scope of the data processing. Therefore, it remains an open question whether this very broad contractual clause provides the data subject with sufficient information, especially with regard to the fact that Facebook did not only observe users' behaviours, but actively withheld certain posts and thus manipulated the users' communication (Góralczyk, 2014). Furthermore, as journalists discovered, the research clause was introduced into Facebook's terms of use only four months after the study actually took place (Góralczyk, 2014). For

these two reasons, it is highly doubtful, therefore, whether the data processing was covered by the data subjects' consent.

Data Processing Permitted by the Law?

In the absence of informed consent, data processing may be permitted even without the knowledge of the person concerned. However, the laws set strict conditions. For example, German data protection acts require that personal data may only be processed if this is necessary for scientific research, especially if the aim of the research could not be reached otherwise, or only through disproportionate efforts, and if secondly, the research interest weighing in favour of the data processing prevails over the privacy interests of the persons concerned (Hatt, 2012, pp. 90ff). From the perspective of German data protection law, it is very unclear whether these legal requirements have been met in this case.

5 Research Ethics and Data Protection Laws

Finally, the discussion of these legal issues raises the question how data protection law and research ethics relate to each other.

Principles of research ethics have been defined as including, among others, the endeavour for objectivity and integrity and an adequate assessment of risks and benefits associated with the research project. Furthermore, the test persons' participation has to be voluntary on the basis of an informed consent. This also gives test persons the right to opt-out at any time. Additionally, data privacy has to be respected, e.g. by means of data anonymisation (cf. e.g. Unger, 2014, pp. 17ff with regard to the Code on Research Ethics of the German Society of Sociology).

There is clearly a broad congruency between research ethics standards and data protection laws discussed above. However, as far as I can assess, there has not yet been a discussion on the question whether there are any differences between data protection laws and ethical standards. One may expect that the limitations to research set by ethical norms are either the same or even more restrictive than those set by legal norms. As both sets of rules try to achieve an adequate balance between research and privacy interests and thus need to be interpreted in each individual case, it may be assumed prima facie that ethical and legal norms are very close to each other.

The ground becomes safer again when trying to tell the differences between data protection laws and research ethics. Laws are legally binding rules that can be enforced, e.g. by data protection authorities and before the courts. In contrast, ethical norms are non-binding rules. At second glance, however, the

differences are not as substantial as they seem to be. Experiences show that legal actions to enforce data protection laws in the area of research are only taken as a last resort. Generally, legal conflicts in this area are settled out of court. Therefore, there is very little case law on the conflict between data protection laws and freedom of research.

On the other hand, ethical norms in practice may have quite a significant authority. So researchers may commit themselves to ethical norms to the effect that also ethical norms, to some extent, become enforceable within the scientific community. For example, according to the statutes of the German Society of Sociology, an infringement of the society‘s Codex of Research Ethics (Deutsche Gesellschaft für Soziologie (DGS), 2014a) may be examined by the society’s ethics-committee, which may impose sanctions such as a public reprimand in a scientific journal or a temporary or permanent exclusion from the society (DGS, 2014b). Furthermore, ethical norms may also become indirectly binding when legal norms require a research project to be examined and approved of by an ethics-committee. Until now, however, this is only obligatory in the case of biomedical and psychological research. Furthermore, the violation of ethical norms may lead to a loss of scientific reputation. So despite their non-binding character, ethical norms arguably may have a substantial bindingness in practice.

Another difference between ethical and legal norms relates to the respective norm setter. Whereas legal norms are set by national parliaments or the European legislator and may be clarified by the courts, norms for research ethics are set by the scientific community itself, giving researchers the chance to formulate appropriate rules for scientific research.

6 Résumé

Digital technologies amplify the instruments and research methods available in the social sciences. These possibilities come along with legal insecurities, since innovative research methods lead to new conflicts between the protection of privacy and freedom of research. Although data protection may be an obstacle, it is also a key factor to empirical research, since test persons need to be sure that their data will be protected and their privacy will be respected. Otherwise, it could lead to a loss of trust and less acceptance for scientific research, resulting in a decreasing willingness to participate in scientific studies (Kämper, 2016, p. 6; Schaar, 2016, p. 2.). To find an adequate balance between the interests involved, is not only a task for legislators and courts, but also for researchers and research organisations.

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Crowd-Based Documentation of Plagiarism: The VroniPlag Wiki Experience

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Keywords: plagiarism, documentation, vroniplag, wiki

Abstract[2]

Using examples from real cases, this article explains how a crowd-based documentation of presently 173 cases of academic plagiarism has been effectuated in VroniPlag Wiki. It explores patterns of plagiarism, links to other types of academic misconduct and explains incentives for and dangers of plagiarism.

Table of Contents

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2 This is an updated (as of 22 September 2016) written version of the author's oral presentation at the conference and not meant to be a fully researched and referenced scholarly paper.

F.M. Dobrick et al. (Hrsg.), *Research Ethics in the Digital Age*,
https://doi.org/10.1007/978-3-658-12909-5_5

1 A short history

The story of VroniPlag Wiki beings with a normal academic review, of a printed doctoral thesis, for a print journal, a traditional way of detecting and reporting plagiarism, which indeed had been found in abundance in this case (Fischer-Lescano, 2011). What made this review so special was that the author of the thesis had meanwhile become the German defence minister. When the media picked up on this story, a young academic, who was working on his own doctoral thesis, adopted the nickname PlagDoc and invited publicly for a crowd-based documentation of plagiarism in the thesis of Karl-Theodor zu Guttenberg. Initially launched under Google docs, this platform soon collapsed under the numerous simultaneous edits undertaken by many willing crowd members. So the documentation was soon shifted to a wiki called "GuttenPlag", which was hosted by wikia.com.[3]

While documentation was still ongoing, several GuttenPlag activists started a separate wiki for collective documentation of plagiarism beyond the Guttenberg case.[4]

This was somewhat inappropriately named VroniPlag Wiki, Vroni being the nickname of Veronica Saß, daughter of Edmund Stoiber, former Prime Minister of Bavaria. Her dissertation was the object of the first VroniPlag Wiki documentation.[5]

The doctoral theses of several politicians followed. One of these early cases crossed over into academia.[6] Margarita Mathiopoulos, once secretary-general of the Social Democratic Party, had also an academic career. Allegations of plagiarism in her doctoral thesis had already been voiced in 1991. A commission set up by the University of Bonn then found violation of citation rules on some 5% of the pages. While criticising lax citation rules, the committee confirmed the doctoral degree. [7] With the unpaid work of numerous wiki contributors, much improved plagiarism-finding and documentation techniques, and twenty years later, VroniPlag Wiki could show that the commission had only found around 10% of the plagiarism contained in this thesis. In fact, nearly half of the pages could be shown to be affected by plagiarism (Fig. 1: Graphic representation of plagiarism distributed over the pages of Mathiopoulos (1987),

3 http://de.guttenplag.wikia.com [September 23, 2016].

4 http://de.vroniplag.wikia.com [September 23, 2016].

5 http://de.vroniplag.wikia.com/wiki/Vs [September 23, 2016].

6 http://de.vroniplag.wikia.com/wiki/Mm [September 23, 2016].

7 For a full chronology of these events, see http://de.mmdoku.wikia.com/wiki/MMDoku/Chronologie [September 23, 2016].

different shades representing different categories of plagiarism as explained below).

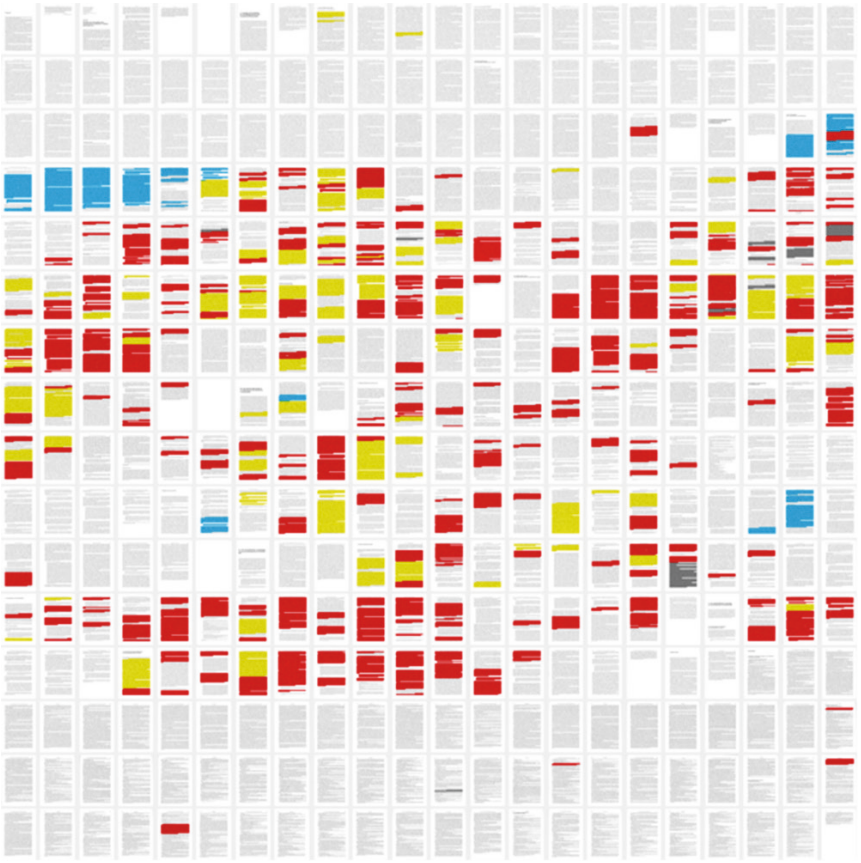

Fig. 1: Graphic representation of plagiarism distributed over the pages of Mathiopoulos (1987), different shades representing different categories of plagiarism as explained below.

As a consequence of the VroniPlag Wiki documentation, the University of Bonn, on the second attempt, revoked the doctoral degree. Two instances of court proceedings upheld the university's decision (OVG Nordrhein-Westfalen, 2015; VG Köln, 2013).

The tenth VroniPlag Wiki case was the first to concern an author who had no connections to any political party, and who at the same time was a full-time academic.[8] The subsequent cases have reverted the initial focus on cases involving politicians. As of September 2016, 173 cases of plagiarism have been documented publicly in VroniPlag Wiki, of which 41 concern authors who have stayed in academia beyond their doctoral degree.[9] 16 concern politicians, including some who are little known beyond the local level, but also the present German ministers for defence and for foreign affairs.[10]

2 The crowd

Let us now look at what makes VroniPlag Wiki crowd based, and how it documents plagiarism.

Most of you will know how a wiki functions, and VroniPlag Wiki is no exception. It is also hosted by wikia.com. Anybody can contribute – anonymously, appearing as IP address, or pseudonymously under a nickname. Since its start in 2011, VroniPlag Wiki has been edited by several thousand different users, but just under 200 of these have made five or more edits.[11] At most times over the last five years, between one dozen and some 20 people have been very active, with individual contributors drifting in and out over the years. It is certainly not a closed club – anybody who is interested can join. There are 33 administrators, of which some 15 are active.[12]

All active contributors operate under a nickname. Four VroniPlag Wiki contributors have outed themselves with their real names.[13] Unsurprisingly, three of them are full-time tenured professors at German universities, and I am one of them. The fourth is a younger academic colleague. I have also met several of the pseudonymously operating contributors in person, and know a few things some about others, but practically nothing else about others. My impression is that the vast majority have an academic background, and that the majority work in academia. They come from different academic fields – arts and humanities, social sciences and natural sciences are all represented.

8 http://de.vroniplag.wikia.com/wiki/Cs [September 23, 2016].

9 http://de.vroniplag.wikia.com/wiki/Benutzer:WiseWoman/Wissenschaftler [September 23, 2016].

10 http://de.vroniplag.wikia.com/wiki/Benutzer:WiseWoman/Politiker [September 23, 2016].

11 http://de.vroniplag.wikia.com/wiki/Spezial:Benutzer [September 23, 2016].

12 http://de.vroniplag.wikia.com/wiki/Spezial:Benutzer [September 23, 2016].

13 Users PlagProf:-), SleepyHollow02, Strafjurist and WiseWoman.

VroniPlag Wiki has often been criticised for operating anonymously. That is actually not the case. Documented cases of plagiarism are now always reported to the universities by a contributor who uses his or her real name. But there is also one pseudonymously operating long-time contributor who lost his research job when his boss found out that he had been contributing to VroniPlag Wiki. I have no doubt that many of the colleagues who do not have the security of a tenured position have very good reasons for not operating under their real name.

3 Documentation in VroniPlag Wiki

Let us now turn towards how VroniPlag Wiki documents plagiarism. It builds on a time-honoured technique, the juxtaposition of two texts, namely the instance of plagiarism and its source.[14] In VroniPlag Wiki terminology, this is a fragment of the examined text, which may be anything between a few lines and a full page. If the same source is plagiarised over more than one page, separate fragments are created for each page.

We will use as example the only VroniPlag Wiki documentation to date which concerns our host university, Dresden, and which is written in the English language.[15]

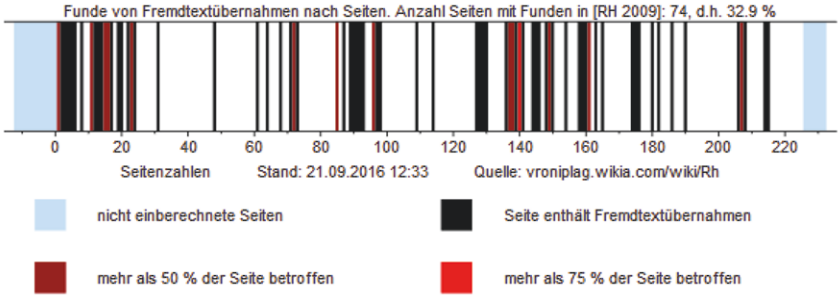

Fig. 2: “Barcode” of affected pages

You can see in this “barcode” (Fig. 2) that roughly one third of the pages are affected. Most stripes are in black, which means that less than half the page

14 As evidenced e.g. in the annex to Fischer-Lescano (2011).

15 http://de.vroniplag.wikia.com/wiki/Rh [September 23, 2016].

is affected. Some, dark red in the original, indicate pages with between half and under 75%, bright red indicates 75-100% of a particular page.

Let us look at one fragment (Fig. 3):[16]

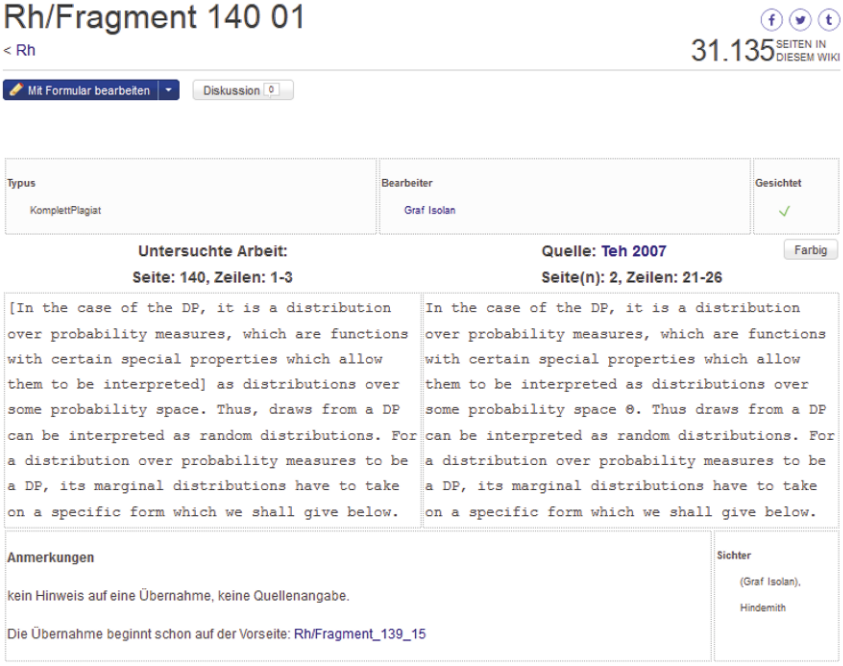

Fig. 3: Fragment of the text which is categorized as “Komplettplagiat” or completely plagiarized

A few lines have been copied verbatim without indicating the source – in this case, the source is not mentioned anywhere in the book. No indication, no alteration makes this a case of the first category of plagiarism which in VroniPlag Wiki is called “Komplettplagiat” or completely plagiarised – as marked in the left hand corner. You can see on the top that user Graf Isolan is indicated as the person who has created this page. You can see on the right hand bottom under “Sichter” the user name Hindemith. Hindemith thus confirms that he has looked up both the original and the documented work, certifies that Graf

16 http://de.vroniplag.wikia.com/wiki/Rh/Fragment_140_01 [September 23, 2016].

Isolan has extracted the text correctly, that page and line numbers are indicated correctly, and agrees that this is a case of a Komplettplagiat.

VroniPlag Wiki also documents the sources. If you click on the source indicated in this fragment (The, 2007), this will lead you to a description of author, title, year of publication etc, and in this case also to a direct link to this online source. [17] All parts which have been taken from this source can be found when scrolling down this page. In this case, five fragments have been lifted from this one source, which is not mentioned anywhere in the thesis.

Fragments are also collated to pages. The very first page consists of five such fragments.[18] This shows the author as an adopter of patchwork technique, the combination of smallish fragments lifted from various sources. As a result, there is very little on the first page which the author has written himself. We will come back to this – this technique is frequently adopted by authors who are not native speakers of the language in which they write.

Two of the five fragments have been lifted verbatim. Three have been slightly modified. If this is done without indicating the source, this falls into a second category, namely "Verschleierung" or concealment, as for example in this fragment (Fig. 4):[19]

17 http://de.vroniplag.wikia.com/wiki/Quelle:Rh/Teh_2007 [September 23, 2016].

18 http://de.vroniplag.wikia.com/wiki/Rh/001 [September 23, 2016].

19 http://de.vroniplag.wikia.com/wiki/Rh/Fragment_001_18 [September 23, 2016].

Fig. 4: Fragment of the text which is categorized as “Verschleierung” or concealment

Here, “ergo” has been replaced by “i.e.”, and “but” by “nevertheless”, without any change of the meaning. There is very little changed in this example. In other cases, the technique of small adaptations is frequently used to make the plagiarised text blend in better with the rest of the thesis – hence the name “concealment”.

The third category of plagiarism is the so-called “Bauernopfer” or pawn sacrifice, a metaphor borrowed from the game of chess. You are probably aware that there are distinct rules of citation, including that (1) all sources which have been used are referred to in the context where they have been used, and (2) that text, tables, graphics etc. which has been copied verbatim must be indicated as such.[20] In the case of the pawn sacrifice, the first rule has been observed, but the second has not. Figure 5 provides an example:[21]

20 See below for another rule, the prohibition of second- and third hand referencing without proper indication (blind copying).

21 http://de.vroniplag.wikia.com/wiki/Rh/Fragment_085_27 [September 23, 2016].

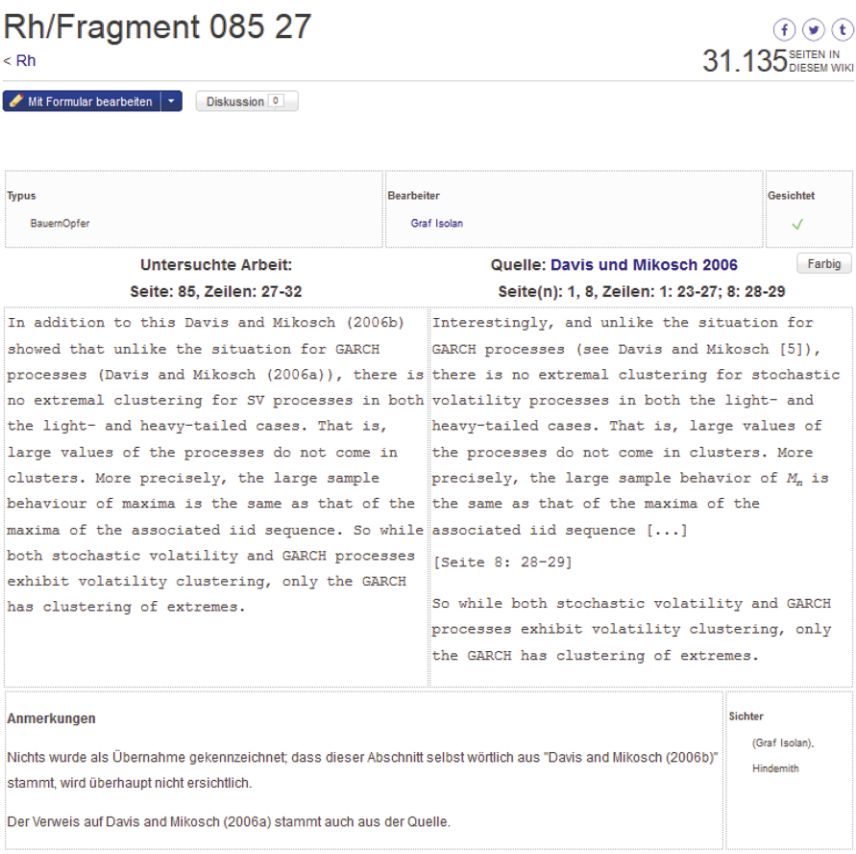

Fig. 5: Fragment of the text which is categorized as “Bauernopfer” or pawn sacrifice

The source is mentioned once within the first sentence, but the author has failed to mark in an appropriate way the text which he has lifted verbatim, by using either quotation marks or indentation.

Borderline cases are marked in a fourth category, namely “Keine Wertung” – although there is some violation of citation rules, this is a minor case, or a case where it perhaps remains doubtful who has copied from whom. 22 such fragments have been created in the present case, five of which have been certified by two users. Fig. 6 presents one example of a short unacknowledged quote:[22]

Fig. 6: Fragment of the text which is a borderline case and marked in a fourth category, namely “Keine Wertung”

VroniPlag wiki notes, but does not document as plagiarism where authors recycle their own work without proper indication, which some people call self-plagiarism. Figure 7 provides one example:[23]

22 http://de.vroniplag.wikia.com/wiki/Rh/Fragment_137_02 [September 23, 2016].

23 http://de.vroniplag.wikia.com/wiki/Rh/Fragment_090_08 [September 23, 2016].

Fig. 7: Fragment of the text which is an example for so-called self-plagiarism

Finally, some fragments are classified as “Kein Plagiat” or “no plagiarism”, usually as contrast, to show that the author knows how to cite properly, or after some discussion. Figure 8 presents an example for “no plagiarism” – very short and not particularly original:[24]

24 http://de.vroniplag.wikia.com/wiki/Rh/Fragment_011_11 [September 23, 2016].


[1.] Rh/Fragment 011 11 - Diskussion
Boldi 2004, Fragment, Gesichtet, KeinPlagiat, Rh, SMWFragment, Schutzlevel
Bearbeitet: 31. July 2012, 15:39 (KnallErbse)
Erstellt: 24. July 2012, 20:44 Plagiatsfischer
Typus
KeinPlagiat
Bearbeiter
Plagiatsfischer
Gesichtet
Untersuchte Arbeit:
Seite: 11, Zeilen: 27
Quelle: Boldi 2004
Seite(n): 16, Zeilen: 9
Farbig
The multivariate theory is naturally more recent.
The multivariate theory is naturally more recent.
Anmerkungen
Sehr kurz, daher keine Bewertung. Inhaltlich einschlägige Dissertation.
Sichter
KnallErbse

Fig. 8: Fragment of the text which is categorized as “no plagiarism”

3.1 Tools for plagiarism detection

There is a fairly common misconception that VroniPlag Wiki uses a special plagiarism detection software, and that VroniPlag reports are produced by this software. You already know that the last rumour is entirely wrong. But the first is also not correct. VroniPlag Wiki contributors make very little, if any, use of commercial or free plagiarism detection software, where you upload a text and a programme checks for identical bits of text on the internet or in databases. First, all known plagiarism software produces many false positives, where correct citation shows up as potential plagiarism. Second, this software produces even more false negatives, where plagiarism e.g. from a printed source is not detected.

So most of the search for plagiarised texts is done manually, using search engines or by finding potential printed sources and checking them against the text which is under examination. For this, VroniPlag Wiki contributors use other tools, mostly based on an old public domain program called similarity tester, which compares not one text with the rest of the online-world, but which directly compares two texts at a time.[25]

25 Developed by Dick Grune and retrievable at http://www.dickgrune.com/Programs/similarity_tester/ [September 23, 2016].

This program has been integrated into a publicly accessible VroniPlag Wiki tool which facilitates the detection of overlaps between two texts (Fig. 9):[26]

Fig. 9: Tool to highlight identical sequences of words

Just copy one text into the left window, the other into the right, select the minimum number of consecutive words for which overlaps are shown, and click on "Texte vergleichen!" The tool will then highlight in different colours identical sequences of words.

3.2 Non-public documentation

I should now mention that, while 173 cases have been documented publicly, open for everybody to access via the homepage, this is not how a case starts in VroniPlag Wiki. In fact, most VroniPlag Wiki cases are never reported publicly.

New cases start their life in a separate namespace area, which is not linked to the main page and which is somewhat shielded against search engines. At this stage, the name of the suspected author is not mentioned, but shortened to two or three letters. The title and other details of the publication are also not

26 http://de.vroniplag.wikia.com/wiki/Quelle:Textvergleich [September 23, 2016].

mentioned, although a link may be provided to a library catalogue or download area.

Looking arbitrarily at what is alphabetically the first undocumented case, abbreviated Aa, one can note some serious plagiarism.[27] Nevertheless, this case was never published. I was not involved in this case and have no knowledge of any particularities. It should be noted, though, that documented instances of plagiarism have to pass a certain threshold both qualitatively and quantitatively. While universities have revoked doctoral degrees for the unattributed copying of some four pages of text,[28] VroniPlag Wiki cases will usually not go public unless well over 10% of the pages are affected, typically at least 20%. On average, VroniPlag Wiki documentations concern cases where 40-50% of the pages are affected, with typically 15-20% of pages where half or more of the text has been plagiarised. This, and cases where it is doubtful who has copied from whom, account for the fact that a clear majority of VroniPlag cases have not gone public, namely some 250 unreported cases.

3.3 Overview and breakdown of documented cases

Reported cases are collated on the VroniPlag Wiki overview page, which allows sorting of cases e.g. according to the 56 universities concerned to date.[29] You will then notice that there are some particularly "good customers", namely the University of Münster and the Charité in Berlin. These are mass instances of plagiarism at German medical faculties, as evidenced by the breakdown of cases according to subjects, where Dr. med (63, plus 7 medical habiliations) and Dr. med dent (26) are leading the way, followed by Dr. jur. (law; 22 doctoral thesis, plus 1 habilitation), Dr. phil. (19, plus one habilitation), Dr. rer.nat. (natural sciences other than medicine, 9 doctoral theses), Dr. rer. pol. (mostly economics, 7 plus one habilitaton). There is even one thesis in theology.[30]

27 http://de.vroniplag.wikia.com/wiki/Analyse:Aa [September 23, 2016].

28 E.g., VG Berlin (2015). As a subsequent documentation on VroniPlag Wiki revealed, this thesis contained 107 pages which were affected by plagiarism: http://de.vroniplag.wikia.com/wiki/Sse [September 23, 2016].

29 http://de.vroniplag.wikia.com/wiki/%C3%9Cbersicht [September 23, 2016].

30 http://de.vroniplag.wikia.com/wiki/Jpm [September 23, 2016].

3.4 How cases are found

There are several ways in which VroniPlag Wiki will find cases of plagiarism.

First, anyone can report a case of plagiarism, even anonymously, using a form provided on the website (from the "Community" menu, select "Briefkasten"). However, VroniPlag Wiki contributors will look at these only if they concern academic monographs as opposed to articles or non-academic works. And there has to be evidence of plagiarism, not just an allegation.

Second, anybody can start documenting a case on VroniPlag Wiki. There are indeed a number of users who joined VroniPlag Wiki because they had such a case at hand. Some of them have stayed on.

Third, some cases had been known publicly (as for Margarita Mathiopoulos, mentioned above), or personally to one of the contributors.

Fourth, some contributors have become very good at discovering new cases. The mass cases of plagiarism in medical faculties were discovered in an automated comparison between on-line published doctoral theses from these faculties. Each dissertation was thus compared to all other dissertations from this faculty. This was later extended to a wider comparison of dissertations from other faculties. In these millions of individual comparisons, those with a high percentage of textual overlap were flagged. This automated comparison includes many false negatives (where plagiarism does not show), and also some false positives (large overlaps of correctly used material). So each and every case which looks somehow suspicious must be scrutinised by a real person, and documented in the fragment and certification mode I have outlined above.

4 Mass plagiarism in medicine and other misconduct

This has revealed some astonishing patterns of circulation of texts within groups of one or two supervisors and their doctoral students. This is shown by Figure 10:[31]

In this case, Hertel (2012) copied 43 fragments from Otto (2011), who copied 56 fragments from Kupfer (2011), who copied 41 fragments from Kraul (2010), who copied 40 fragments from Peschke (2007), who copied 18 fragments from the second qualifying thesis (Habilitation) of the person who supervised all of these theses, Olze (2005). Parts of that Habilitation were recycled without proper attribution in all of these dissertations. It is difficult to explain

31 http://de.vroniplag.wikia.com/wiki/Analyse:Berlin_Medizin_Overview [September 23, 2016].

this in any other way than by systematic collusion between the supervisor and the supervisees.

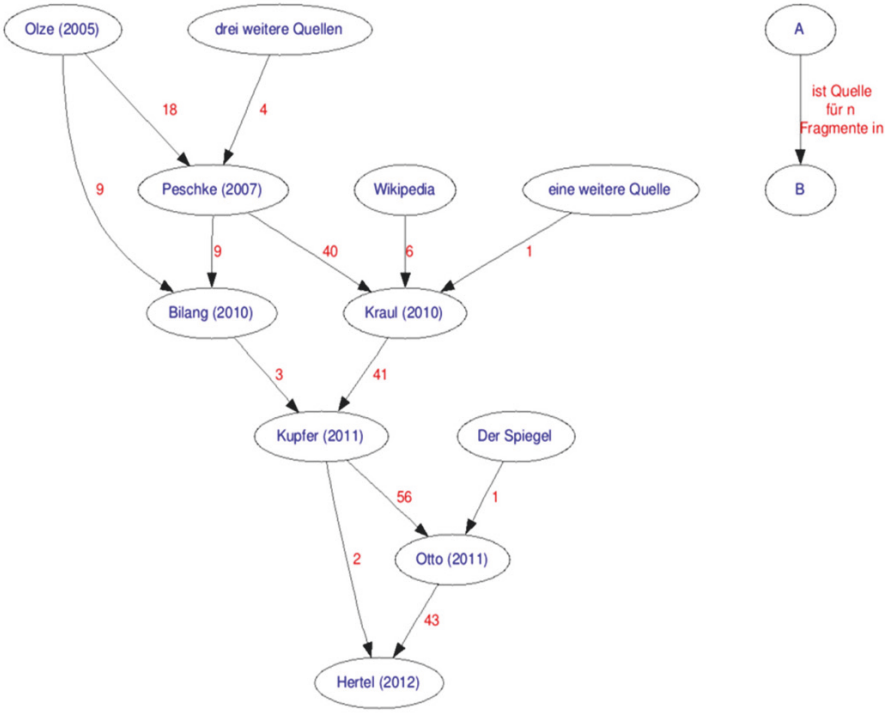

Fig. 10: Example of a pattern of circulation of texts within a group of one supervisor and several of his doctoral students

This is not the only such case. Similar patterns were found in the Faculty of Medicine at the University of Münster. In one case, the end in this chain of plagiarism shows 100% of the pages affected by plagiarism, with almost the entire thesis copied verbatim from another doctoral student with the same supervisor. Figure 11 shows the "barcode" for this thesis:[32]

32 http://de.vroniplag.wikia.com/wiki/Gt [September 23, 2016].

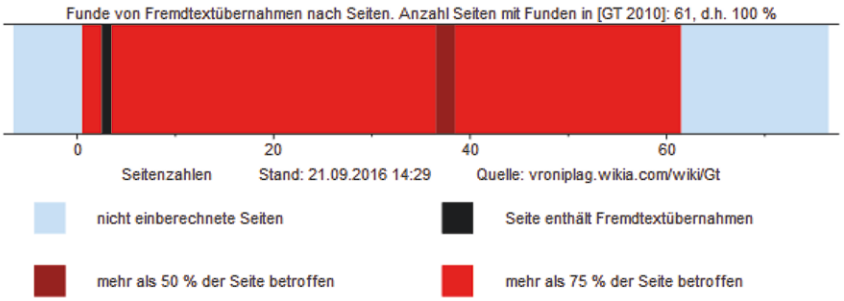

Fig. 11: "Barcode" for a thesis where 100% of the pages are affected by plagiarism

In this case, some test results of the former study are also copied into the latter, although they concerned two different species of apes.[33] This creates the strong suspicions that the alleged experiments were not carried out at all, or not with the indicated results.

This also demonstrates that plagiarism will often go hand in hand with other forms of academic misconduct. There are some VroniPlag Wiki cases in which images were manipulated, including one in which some images were recycled to show different experiments. Other images were pasted over with different images.[34]

Another form of common academic misconduct which shows up in VroniPlag Wiki cases is the random use of sources, which are quoted for facts, statements or opinions which are actually not found in the source.[35]

5 Multiple publications of articles

Some VroniPlag Wiki contributors have ventured beyond the examination of doctoral theses into articles published in journals, which are frequently considered more important in the natural sciences. They have downloaded and initiated an automated comparison between large numbers of articles. Beyond the expected result – namely frequent cases of plagiarism – these have revealed an unexpected other phenomenon: identical or almost identical articles are pub-

33 http://de.vroniplag.wikia.com/wiki/Gt/Befunde [September 23, 2016].

34 http://de.vroniplag.wikia.com/wiki/Mag/Befunde/Image_irregularities [September 23, 2016].

35 As evidenced in http://de.vroniplag.wikia.com/wiki/Ugv/Befunde#Fehlerhafte_Referenzen [September 23, 2016].

lished by the same authors several times, within a short space of time. Sometimes this is done covertly: the same article is submitted simultaneously with different titles, a different sequence of co-authors and some cosmetic changes to different journals (Tang et al., 2013; Liu et al., 2013).[36]

However, the most surprising result is that repeated publication of identical articles also occurs with identical author, title and even journal. An extreme case is the International Journal of Clinical & Experimental Pathology, which between May 2014 and October 2015 managed to publish five articles twice.[37] The Austin Journal of Clinical Neurology even published the same article twice within the same issue.[38] And no one appears to have noticed – not the authors, not the editors of the journal, not the peer reviewers, not the readers. None of these double publications had been retracted at the time when the editors of these two journals were contacted by a VroniPlag Wiki contributor.

This may be good business for a journal which charges the authors US$1,580 for the publication of a five page article,[39] and which also requests authors to suggest their own reviewers.[40] But it looks like a raw deal for science. This raises serious doubts not only about the editors, but also about the entire process of peer review. And this appears to be a widespread phenomenon, not a few isolated cases.

6 Incentives for plagiarism

We now return to regular plagiarism, to have a look at what motivates plagiarisers. The 173 cases show different patterns of plagiarism, which partially reflect different motivations. Broadly, I have observed three incentives for plagiarism:

36 Many more examples have been found; many involve reputable journals and publishers.

37 http://www.ncbi.nlm.nih.gov/pmc/articles/PMC4097265/ = PMC4097265; PMC4230110 = PMC4270566; PMC4348884 = PMC4396208; PMC4503060 = PMC4525876; PMC4555766 = PMC4583969 [September 23, 2016].

38 Austin J Clin Neurol - Volume 2 Issue 6 – 2015 contains two slightly different versions of Al-Hashel, JY., Nagarajan, V. & Ahmed, SF. (2015), Efficacy of Botulinum Toxin-A Treatment in Chronic Migraine – Kuwait Experience: http://austinpublishinggroup.com/clinical-neurology/download.php?file=fulltext/ajcn-v2-id1056.pdf and http://austinpublishinggroup.com/clinical-neurology/download.php?file=fulltext/ajcn-v2-id1056.pdf [September 23, 2016].

39 http://www.ijcep.com/instructions.html [September 23, 2016].

40 http://www.ijcep.com/Submission.html [September 23, 2016].

1. Authors are intellectually or linguistically overwhelmed by the task of writing a thesis.

2. Authors want to save time, either because of imminent deadlines, or just for their convenience. My impression is that plagiarising can easily save 80-90% of the time needed for writing a thesis which follows good academic practice.

3. Authors want to shine by pretending a particularly high level of rigour, learning and originality. This is what I call "premium plagiarism". Some particularly successful and dangerous plagiarisers combine incentives 2 and 3 for a quantitatively impressive output which only pretends to be of high quality. I will come back to this.

The present case of author "Rh" may be a mixture of 1 and 3. As mentioned, non-native writers sometimes see copying of text as a linguistically safe alternative. Rather than formulating themselves, they patch together sentences and sometimes paragraphs from other sources. They do not indicate them as literal quotes because of embarrassment, or out of fear that the thesis might be rejected as a patchwork.

"Rh" is also one of the many cases where a plagiarised thesis attracted the top mark of *summa cum laude*, as did the thesis of Karl-Theodor zu Guttenberg. But "Rh", unlike zu Guttenberg, is also one of the four publicly documented cases in which a plagiarised thesis received a prize for its outstanding quality. The author of what is perhaps the best example of premium plagiarism amongst the VroniPlag Wiki cases was very successful indeed. His thesis won him immediately a lecturership and eventually professorship at a well-known university in London, where he continues to teach.[41]

7 Dangers of plagiarism

Most, although not all instances of plagiarism are also violations of copyright. In severe cases, they can amount to a criminal offence under German law. Criminal proceedings were indeed launched against zu Guttenberg for having lifted numerous pages from a diploma thesis of an author who then launched a complaint. These criminal proceedings were eventually terminated against the payment of a fine (Staatsanwaltschaft Hof, 2011).

There is also a moral issue, which I find self-evident.

Most importantly, though, plagiarism corrupts academia and seriously impedes the enlargement of knowledge and understanding. In particular, unre-

41 http://de.vroniplag.wikia.com/wiki/Lm/Befunde [September 23, 2016].

flected copying misses on opportunities for re-evaluation, and counteracts falsification, perhaps the most important tool for academic advancement. I will use just one example from VroniPlag Wiki.

This is the case of "Rm". In the year 2000, he submitted a law thesis at Humboldt University, which was rejected on account of plagiarism.[42] He then submitted the same thesis with small modifications at the University of Innsbruck, where the thesis was accepted during the winter term 2001/2002.[43] With the help of his doctoral degree, he then became a full-time professor in Germany. After publication of this documentation in the VroniPlag Wiki, I reported the case to the University of Innsbruck who apparently have decided to uphold the degree, but who refuse to communicate this to me or to the public. So this author continues to teach his German students the standards of good academic practice.

This is, unfortunately, not an isolated case: while some universities take decisive action when presented with a documentation of plagiarism, others try to brush this under the carpet, remain secretive, and even ignore legal rules (Dannemann & Weber-Wulff, 2015).

But let us return to the perpetuation of error which is so facilitated by plagiarism. "Rm" follows over more than hundred pages closely a dissertation published more than 30 years earlier, in 1969.

As shown in Figure 12,[44] his source reports that there are no so-called dissenting opinions (individual opinions of judges in a panel which disagree with the majority) in the Judicial Committee of the Privy Council. In 1968, this information was outdated by a mere three years, because a statutory instrument of 1965 had introduced such dissenting opinions.[45] In 2002, when Rm copied this blindly from the source, even enhancing the statement with the words "never - without any exception", the information was outdated by 36 years. He just did not check. He even failed to put two and two together: elsewhere he cites a judgment of the Privy Council which contains a dissenting opinion (Madzimbamuto v. Ladner-Burke, 1968, p. 283). I find it safe to assume that he did not read this either.

Moreover, his source was also not good at checking his sources. When reproducing a quote from the 17th century judge Sir Edward Coke, his source

42 http://de.vroniplag.wikia.com/wiki/Rm/HU [September 23, 2016].

43 http://de.vroniplag.wikia.com/wiki/Rm [September 23, 2016].

44 http://de.vroniplag.wikia.com/wiki/Rm/Fragment_058_05 [September 23, 2016].

45 Judicial Decisions (Dissenting Order) SI 1966 No 1100.

makes five copying mistakes.[46] "Rm" serially copies these and other mistakes and misspellings which his sources make, some of which were already reported incorrectly in the sources' source. "Rm" is also bad at copying. He adds himself many more mistakes.[47] So this is an example of how blind copying accumulates mistakes. This turns science into a children's game named Chinese whispers, where everybody whispers a word into the ear of his neighbour, who passes this on whispering to the next neighbour, etc.

Fig. 12: Example for a perpetuation of error facilitated by plagiarism

46 http://de.vroniplag.wikia.com/wiki/Rm/Fragment_087_03 [September 23, 2016] (listed under "Anmerkungen").

47 http://de.vroniplag.wikia.com/wiki/Rm/Fragment_087_03 [September 23, 2016] (listed under "Anmerkungen").

Blind copying is particularly dangerous in the natural sciences, because many decades may pass before anybody realises that the findings by Bloggs (1980), as reported by Doe (1985), then summarized by Smith (1990), copied by Miller (1995), taken over by Jones (2000), reproduced by Baker (2005) and again mentioned by Summer (2010) are not reliable – because everybody has copied from the predecessor, and no one has bothered to check Bloggs (1980). If someone had, they would have noticed that Myers proved in 1986 that Bloggs made assumptions which had since been disproven, or that used equipment which had since proven to be unreliable, or that another study had appeared with different results. Or that Doe (1985) misread and exaggerated the findings of Bloggs (1980). Or that Smith (1990) cited to Doe (1985) randomly, that is for something which Doe in fact does not mention. As mentioned, this is also a pattern of academic misconduct which can be found time and again in the VroniPlag Wiki cases.

This is the fundamental problem with blind citations: if one person is allowed to copy blindly without indication, then so is this person's source, with the effect that everybody is allowed to quote blindly, and in the end everybody will. This is a certain way of perpetuating errors.

Another danger of plagiarism is that it disadvantages the careers of academics who follow good academic practice. Plagiarisers can produce quantitatively huge outputs within a short time and apply for jobs with impressive publication lists, whereas somebody who has invested years of archival work will have to explain a comparative lack of output. If plagiarisers get better jobs, this creates strong incentives for a race to the bottom, and also silences the work of academics who produce high quality research in accordance with the rules.

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The Empowerment of Users: Rethinking Educational Practice Online

Pascal Marquet, Thomas Köhler[1]

Keywords: Online Learning, Digitization, Openness, Instrumental Conflict

Abstract

The conditions of school learning change globally. Teachers are faced with the challenge of either using digital media extensively in teacher training and school or allowing its usage. In order to develop an understanding of the meaning of such considerable change, authors first discuss the need for instructional design methods based on the way the users learn. While introducing the concept of instrumental conflict, a theoretical approach is applied, which helps to clarify the core structure of such processes. Finally, the successful example of adoption in the context of pharmaceutical education will be presented.

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1 Introduction

It is rather difficult to obtain precise figures of trends in the current training and eLearning market- eLearning being understood as any activity by which learning content is partially or totally delivered by digital means, including Open and Distance Learning (ODL) platforms, Massive Open Online Courses (MOOCs) and Serious Games (SG) and which goes seriously beyond classic definitions as discussed by Köhler & Ihbe (2006). More recent research suggest a continuous upcoming of innovations in technology enhance learning (Fischer et al., 2015; Bremer et al., 2016). Available forecast documents, which are mainly reports delivered by consultancy agencies or produced by international bodies, suggest that Western Europe is the second-largest market in the world after North America, and that global Western European 2016 revenues will be around €7.3 billion (Docebo, 2016) of the €96.3 billion for the entire world. By comparison, the video game industry should generate (only) approximately €87 billion in revenues in 2016 (Newzoo, 2016). Educational statistics, however, show that the adoption of digitization in the educational sector is rather heterogeneous and lacks behind in other branches (Pscheida et al., 2015). This rather late adoption will be addressed to some extent in the subsequent sections of this paper.

Although the amounts are likely unverifiable, these figures show that the *e*Learning sector has surprisingly become more important than the gaming sector and that an increasing amount of people including students, workers and individuals, are now placed in the situation of being tempted or obliged to learn remotely. Learning remotely gives an overview of not only the existing industrial and business competition, but also the remaining scientific challenge. This situation can be seen as the consequence of the progressive invasion of Information and Communication Technology (ICT) in all activity sectors since the beginning of the 1970s. In fact, ICT has considerably reduced the duration of innovation cycles (from several years to several months, even weeks sometimes) due to the need for the industrialisation of a new product. This is particularly true in automotive sectors, which employ directly or indirectly approximately 9% of the working population in France (Le Monde, 2015) and 14% in Germany (statement of German government, 2015[2]). By analogy, ICT is now considered to be able to reduce the timeframe of adaptation of the working population to the requirements of the globalised economy and competition by increasing the level of competence without leaving the office or the factory

2 Retrievable at: https://www.bundesregierung.de/Content/DE/Magazine/emags/economy/051/sp-2-die-automobilindustrie-eine-schluesselindustrie-unseres-landes.html [March 11, 2017].

(Edwards & Usher, 2001). After having changed our production processes, digital means are now expected to serve our need for knowledge acquisition and competence development required by permanent innovation.

ICT is also considered to be a part of the solution for developing countries to reach the 2015 objectives for education, as defined in 1990 during the Jomtien World Conference on Education for All (UNESCO, 2014), and that still requires a good deal of effort from the countries concerned. In particular, the objective *developing adult and continuing vocational education* can benefit from the delivery of training content by digital means.; in other words through *e*Learning products of good quality, especially for teachers and teacher trainers. In this regard, the role of ICT in lifelong learning has been recently reaffirmed in the *Education 2030 – Incheon Declaration* (UNESCO, 2016).

In short, educational issues, as well as economic issues, are placing ICT in education and training as one of the main levers for the enhancement of the situation of people and countries. This subsequent enhancement is so that the design of Virtual Learning Environments (VLEs) becomes one of the key aspects of the success, but also the failure, of vocational education and lifelong learning. Of course, we do not claim to offer a solution to this complex problem. We are convinced, however, that if we want to have a chance to increase the quality and the observable effects on the knowledge acquisition and competence development of *e*Learning products, and therefore on the adequacy of human resources to the social demand, this goes through the operationalisation of generic methods for designing these VLEs.

2 Promises of user/learner involvement in online education

The conditions of school learning change globally, not only in France or in Germany. Teachers are faced with the challenge of using digital media extensively in teacher training and school, or allowing and supporting their usage. Novel media concepts such as BYOD (Bring Your Own Device) or Open Educational Resources (OER) represent only the head of comparatively extensive development dynamics.

The following section does not examine the question of the pedagogical core of this development, but rather it investigates how working with free teaching and learning materials can be translated into everyday school life, as well as what this has to do with openness. We address five trends in a thesis-like manner that deals with: the difference between this new form of media in the school and conventional teaching and learning media, considers the usability in the school to finally discuss the basic conditions in teacher training, both in France and Germany.

2.1 Openness: OER, MOOC, etc.

Learning objects are usually produced by specialized publishers and released for use by the responsible school authorities. The production of learning objects by the pedagogical specialists (i.e. teachers) in the preparation is limited to a few subordinate formats (panel, copies, test arrangements, etc.). Often, these are also copies of objects produced on the publisher's side rather than actually produced freely.

What is happening in the context of the new Openness? Educational materials (learning or knowledge objects) and educational institutions open up to any person who is interested in them, without having to prove access requirements or to obtain an authorization. This is a fundamental departure from previous education practice, institutional affiliation and limitation is questionable. The focus is on the interest in a topic or object, which is similar to a freely accessible library, but without the need for an organizational commitment (membership, enrolment).

> UNESCO has devoted itself to the possibility of using OER as a new core element of a wide range of educational efforts, as the definition shows (2015):
>
> "Open Educational Resources (OERs) are any type of educational materials that are in the public domain or introduced with an open license. The nature of these open materials means that anyone can legally and freely copy, use, adapt and reshare them. OERs range from textbooks to curricula, syllabi, lecture notes, assignments, tests, projects, audio, video and animation."

2.2 User generation of content

As mentioned in the previous section, the question of authorship is a central aspect for the creation of learning objects. Especially novel online platforms, such as Wikipedia, YouTube or blogs, lead to a change of the possibilities of use from the front desk to production. While traditional mass-media technologies, such as press, radio, television, production, is in the hands of a few specially qualified specialists, the picture is already changing with the introduction of the Internet. Online content can, in fact, be produced by almost everyone.

So what happens? Educational materials, learning and knowledge objects, as well as various other content, can be produced and published by anyone who is interested in it. Any potential interested person can also access these objects, insofar as the insights and interests of each individual can be shared with any other person. Learning is possible without teaching materials (e.g., schoolbooks) being provided by a teacher or produced by a small group of selected subjects (e.g., specialist).

The OECD-study on *Participative Web: User-Created Content* (2007) shows a collection of well-known tools of the so-called "Participation Web" that help the user of the Internet in creating contents of several formats easily. Moreover, the study defines the concept of the participative web as "based on an Internet increasingly influenced by intelligent web services that empower the user to contribute to developing, rating, collaborating on and distributing Internet content and customising Internet applications. As the Internet is more embedded in people's lives, 'users' draw on new Internet applications to express themselves through 'user-created content' (UCC)."

2.3 Independence of learning behaviour

How do learners use the new technological and organizational advancements? In looking at the learning behaviour, a new independence can be observed in a few key places. What is taken into account is how the lesson has to be looked at less clearly or not first hand by teachers. With a comparatively specific reference to the design of classroom situations in classical formats, this is referred to as Open Class, Virtual School, or Mobile Learning.

The question remains: what is happening? The community of learners is separated from the approach of a teacher-led activity to a learning-driven community. In this respect, the social moment is preserved, but the learner is more likely to take over control. This is because activities such as these can only be implemented according to their interests. Here, every learner can and must decide where, when, and whose learner experiences are most appropriate - but not necessarily follow the path set by the educational institution and its representative. Whether this is equally suitable for every learner is not assured (see for example Drummer, 2008). That such individual behaviour may be embedded into social contexts again is as well investigated in research (cp. Kahnwald & Köhler, 2007) and discussed under the label of Microlearning, which may occur as changing information behaviour in virtual communities of practice.

2.4 Socialization in new community forms – virtual loneliness versus virtual massiveness

The basis of established teaching forms is a particular social organization. The school class, which is an especially designed large social group (as well as a spatial configuration), is typical for the school, or even constituting it, in addition to the division of roles between pupils and teachers. In line with the so-called small or working group, the school class is a social entity that operates on a face-to-face basis and is stable in regulation over a period of many years.

This small group also differs from a project group. In some instances, even in higher school years, project groups are often found in class form alongside the regular groups.

What happens when, as described above, this strict localization is dissolved and online communities are formed? It can be observed that these are superimposed with classical learning communities, both temporally and spatially. This is surprising in that it can be assumed that online communication is less useful when individuals correspond face-to-face. However, this is obviously not applicable, as is shown by the widespread use of WhatsApp or Facebook-supported small groups. Also typical for an online community is the lack of limitation on the number of members as spatial barriers are eliminated. This increased number of members is also necessary because the invisibility of the other members (or learners) creates an uncertainty as to whether other persons are actually to be found and only a significantly larger number of mostly several hundred members of the members lead to a sufficient intensity of the exchange –as a result of the online research (Cheshire & Antin, 2008).

Typical examples of these online forms of community in education are virtual learning communities when the learners encounter each other in an inverted or flipped classroom, or the communities of practice ("CoP", cf. Lave & Wenger, 1991, Kahnwald & Köhler, 2013).

2.5 Data-based education: online, massive and even physiologically data based analytics

The use of digital devices by learners leaves large data records (Big Data), even if this is not intended by the learner or lecturer. In fact, any interaction between the learners and the learning object leads to an information technology reaction, other than learning with a paper-based learning material. In most cases this data is not used. If learners or apprentices are aware of these data streams, the discussion also often turns around questions of data protection or fears of possible misuse. Up to this point, systematic use of these naturally occurring data for the regulation of the teaching-learning process has hardly been considered.

If, however, the pedagogical activity is continuously monitored and the data can be used for an immediate and long-term feedback process (e.g. online assessments), the possibilities for an individually tailored learning support are given. Conceptual examples of this are the 'Learning Analytics', the 'tailored training' or, in a certain way, the 'online assessment'. While the tailor-made training courses and also the online-based assessment only follow the idea of Big Data, this has clearly placed the focus on educational research with the concept of learning analytics. However, on the basis of the idea of Educational Data Mining (i.e. the fact that one can extract some useful connections from the

multitude of randomly occurring data), these transformations are still in the children's shoes and can hardly be used in an everyday form - compare, for example, the study by Stützer and colleagues (2015) on social science analysis in higher education.

3 The need for instructional design methods based on the way the user learns

For several decades, and with the introduction of ICT, the concept of ID has been widely used to highlight the need to think carefully about every learning situation mediated by digital devices (Baron, 2011; Henry, 2007). Paquette (2014) describes ID as a method or a process which helps to produce plans and models describing the organization of learning, teaching activities, resources and actors' involvement that comprise an instructional system or a learning environment. Merrill et al. (1996) defines it as an "instructional experience, which makes the acquisition of knowledge and skill more efficient, effective and appealing". In other words, ID is the process of conceiving a learning situation which actually helps the learner to acquire new knowledge or develop new competences. This is different from learning design and, in particular, the approach proposed and developed by the IMS Global Learning Consortium, known as IMS-LD (Instructional Management Systems – Learning Design) which focuses on specifications of learning objects and activities in order to combine, generate and reuse digital resources that are described by a dedicated Educational Modelling Language (EML) (Koper & Tattersall, 2005; Tattersall et al., 2005).

A multitude of ID methods have been developed in order to improve the practice of instructional designers. Among them, Esseff and Esseff (1998) focus on the design of simulations and performance activities (role play, demonstration case study). The regularly updated Systems Approach Model (Dick et al., 2013) focuses on the interrelationship between context, content, learning and instruction and the components of the learning system. The well-disseminated ADDIE model (Analysis, Design, Development, and Implementation) suggests that through an iterative process, the verification of the design documents saves time and money by identifying problems while they are still easy to solve. Most of the current models describing the ID process result from a variation of this last model.

If we look carefully at these models and/or methods, we can see that even if they can guide an instructional designer to design a learning situation, unfortunately, they cannot give information about the way the user experiences this

learning situation. In other words, the learner's cognitive activity in the learning situation cannot be anticipated.

4 The concept of instrumental conflict

An extension of the instrumental genesis theory, adopted to learning situations supported by ICT

Historically, humans construct artefacts to meet a specific need. These artefacts become instruments only if they actually assume an effective application in the world in order to solve a precise problem or achieve an aim (Latour, 1987). In his instrumental genesis theory, Rabardel (1995) makes the same distinction between an artefact and an instrument but adds another distinction between manufactured material objects (tools) and symbolic objects (knowledge). The artefact is thus considered as an anthropological reality, while the instrument is the result of its use as a tool (Contamines, Georges & Hotte, 2003). One can say, therefore, that the tool is an artefact itself, and that the term instrument can be used to establish the artefact as a means of realising the activity of the subject. Thus, it is the subject which confers upon the artefact the status of instrument. By extension, all cultural objects, such as human knowledge and tools, have common properties and are considered as artefacts and potential instruments when used by individuals.

The instrument is considered as a combination of attributes in one entity, with two facets relating to subject and artefact: On one hand, there is a process of transformation of the artefact in a situation – this is instrumentalisation, which is the attribution of a function to the artefact by the subject. On the other hand, there is the transformation of the subject at the cognitive level – this is instrumentation, which consists of the adaptation of the subject's knowledge to the artefact or the creation of new knowledge. These two processes are jointly involved in a reciprocal two-way relationship. They represent two inseparable dimensions of instrumental genesis. To synthesise, it is held that constructed cultural objects, be they material or symbolic, possess identical characteristics of which artefacts are made. Whenever a subject interacts with an artefact, an instrument emerges following a phenomenon of instrumental genesis, composed of a process running from the artefact towards the subject (which is instrumentation) and a process running from the subject towards the artefact (which is instrumentalisation) (cf. Fig. 1).

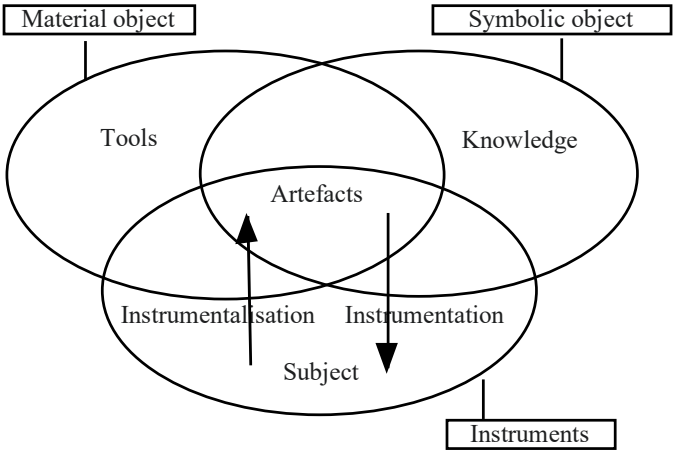

Fig. 1: The concepts of artefact, instrument and instrumental genesis.

Rabardel's (1995) theory provides the opportunity to consider knowledge in the process of being acquired in learning and teaching situations as much as the artefacts themselves. These artefacts, however, need to be sub-divided into *didactical artefact* and *pedagogical artefact*. Didactical artefact is the term used here for all the disciplinary content which needs to be learned in order to become an instrument. Pedagogical artefact is defined here as the formalism for representation and/or the disciplinary content presentation scenario appropriate to its teaching. Formalism for representation is taken here to mean the semiotic processes of the designation of the didactical artefact, and presentation scenario is taken to mean the presentation of the didactical artefact, and it is also called the pedagogical scenario.

In distinguishing a didactical and a pedagogical artefactual dimension within knowledge taught, we make the same sort of distinction as Peraya (2002), who each time something is taught, sees it as being taught within a semio-pragmatic context, which understands the signifiers essential to its formulation which are situated in a discourse oriented towards the appropriation by the learner of the particular object being taught.

Duval (1995) also makes a distinction between two aspects of the same element of knowledge. He calls it *noesis*, a term which he borrowed from Plato and Aristotle, taken to mean the cognitive acts such as the conceptual understanding of an object, the discrimination of a difference or the understanding of

an inference, and he indicates by *semiosis* the production of a semiotic representation. In the field of linguistics, this conception corresponds respectively to the signified and the signifier.

Two families of artefacts are thus present, one being the knowledge ordained by the situation, and the other being the discursive setting for learning. In order for one element of knowledge to be acquired effectively by the learner so that together they interact as an instrument, it is essential that the learner takes on board both the didactical understanding (content) and the pedagogical one (the formalism for representation and/or the presentation scenario). To use an analogy here, where some may see water, others see one atom of oxygen and two atoms of hydrogen, which together constitute a molecule of water.

A fundamental principle is, therefore, proposed here that every didactical object is associated with a pedagogical object in a teaching situation. Each of these objects, considered as an artefact, must be instrumentalised and instrumented suitably by the subject, i.e. the two concomitant phenomena of instrumental genesis have to be in operation. To put this in another way, the learner has to attribute the right functions at times to the content and to its formalism for representation, and he must also adapt his knowledge and apply it at times to the content and its formalism for representation. Acquiring knowledge becomes the double instrumental genesis of both didactical objects and pedagogical objects in a given situation.

The didactical and pedagogical traditions which have arisen, owing to the laws and regulations of teaching, and consequently since the industrialisation of teaching (Moeglin, 2005), have progressively determined how the majority of content should be presented in order for it to be assimilated by the greatest number of learners. It is a fact that these traditions are not always a great help when one wishes to introduce ICT into a learning and teaching situation.

In fact, things get even more complicated when didactical and pedagogical artefacts are associated with technical artefacts. For example, a software solution, a platform, or a website by which one gains access to academic or professional content is a technical artefact, which, to become a technical instrument has to be instrumentalised and instrumented by the user. As much as it may be a technical artefact, however, this VLE also brings into play the aforementioned didactical and pedagogical artefacts, which, in their turn, have to be suitably intrumentalised and instrumented in order to become real instruments, what can be considered as an overlay of three artefactual layers: didactical, pedagogical and technical (*cf*. Fig. 2).

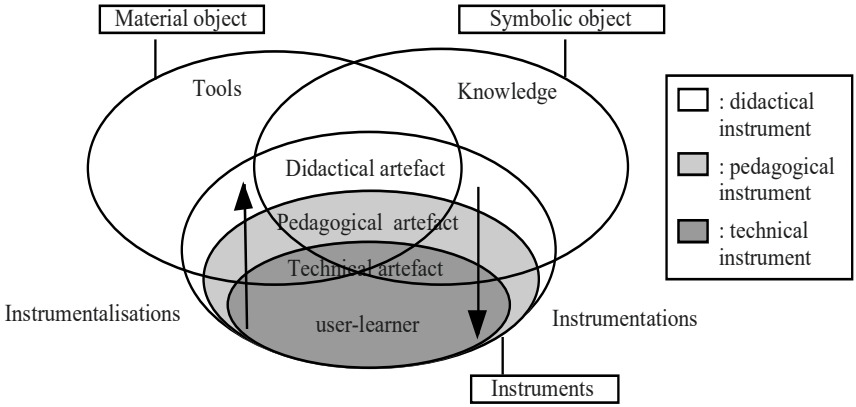

Fig. 2: Relationship of artefacts as sources of instrumental conflict.

Thus, the introduction of a technical system may provoke a disturbance of the balance between didactical and pedagogical artefacts, to the extent that the formalisms for representation and/or the representation scenarios which were pertinent beforehand are found no longer usable. These disturbances of the equilibrium may be termed instrumental conflicts, suggesting that the processes of instrumentalisation and instrumentation of the various artefacts in question can interfere with each other.

In an instrumented teaching and learning situation, each time one introduces a technical system, one takes the risk that the different levels of instrumental genesis may interfere with each another and deprive the learner at times of the possibility to respond to the situation and of constructing the didactical instrument as envisaged in the particular situation.

5 The issue of avoiding instrumental conflicts

Instrumental conflicts are thus interferences between the simultaneous processes of the instrumental genesis of didactical artefacts (disciplinary content), pedagogical artefacts (formalisms for representation and presentation scenarios) and technical artefacts (VLEs).

The first manifestation of instrumental conflicts, and without doubt the most usual, is what has been termed a rupture in the equilibrium between a

classical situation and an instrumented one. This happens when combinations of didactical and pedagogical artefacts, tried and tested by academic tradition, find themselves to be no longer properly instrumentalised and instrumented once embodied in a technical system. This can occur each time that the disciplinary content is delivered within a VLE without modification being made to its presentation format or its role in learning. How many supposed *e*Learning solutions turn out to be barely disguised slides or photocopies reformatted for the menu systems? No matter how much care has gone into the taught content, the computerisation of such matters requires that the learning and teaching scenario should be adapted in order that it can work with the constraints imposed by the system. In the absence of such precautions, the addition of a technical artefactual layer to a former relevant combination of didactical and pedagogical artefacts is bound to lead to instrumental conflict.

The second type of manifestation of instrumental conflicts corresponds with what can be observed when disciplinary content has not been suitably adapted to the generic application which diffuses it. This is the case, and unfortunately it is not altogether rare when a distance education platform not only imposes its own functionalities, but also forces a particular pedagogical scenario. A certain number of Learning Management Systems are built around modes of organisation of pedagogy which are not all suitable for all academic disciplines or all professional training contexts. These modes of organisation of pedagogy cover a broad range, which extends from the downloading of files to print and be read in complete seclusion to systems of collaborative learning with tutor support and computer sessions. Neither these extremes nor the possibilities between are, a priori, good or bad. They can become one or the other depending upon the functioning of the content presented when they fail to accommodate the nature of the teaching concept and the learning vehicle provided by the platform.

The third and final manifestation of instrumental conflicts occurs when a technical system dedicated to a family of didactical objects is used inappropriately by the learner or the trainer. In this instance, neither the contents involved nor the VLE functionalities are to blame, but rather the pedagogical expertise of the teacher. This happens, for example, when teachers are delivering sessions on dynamic geometry by relying upon scenarios developed for paper-pencil geometry. In doing this, pupils cannot access the properties of the geometric objects that the software emphasises, since it is precisely these properties that are not updated in the same way in relation to how the software is used or how one produces figures by hand.

From the moment when one of the didactical, pedagogical or technical artefacts is not in place, or, to put it another way, is not in harmony with the two others, the processes of instrumentalisation and instrumentation necessary for

the construction of knowledge risk becoming the object of instrumental conflict.

6 A successful application of the instrumental conflict theory

According to the instrumental conflict theory, effective learning is the result of an ID process that takes each artefact into consideration – technical, pedagogical and didactical – in order to adapt them to each other. As mentioned earlier, this same issue has been confirmed in the TPACK theory (Koehler & Mishra, 2009). The three artefacts should be intersected with each other so that they achieve the best adaptation and then more potential effective learning.

LabQuest Pharma® is a serious game (SG) that aims to teach professional skills to workers wishing to acquire specific know-how in the field of pharmaceutical production (Denami, 2016a; 2016b). This SG reproduces a standard production unit in a plant and simulates the behaviour of the operator, who is in charge of monitoring the automated production of any pharmaceutical product that needs an environment conditioned by air filtration in order to prevent the intrusion of particles. Access to this environment demands rigorous training that consists of numerous sessions to acquire basic knowledge in biology, operating knowledge about the automated production unit and procedures of control, and report of the production process. In the LabQuest Pharma® environment, the user-learner is the operator and can virtually experiment all sorts of situations regarding the scrupulous observation of standards of hygiene, dress and behaviour.

The ID method used for developing the SG has been based in the identification of the most relevant artefacts belonging to the three associated families of didactical, pedagogical and technical objects. In the first phase, we have identified and compiled an inventory of the procedures, gestures and standards of the aseptic zone activity. According to Cizeron (2010), information has been collected from: (1) interviews with the leading personnel of three sites of different sizes and manufacturing different products, the goal being to collect their expectations regarding the work of their employees; (2) the textbook analysis of reference in order to derive standards and fundamental rules (European Commission, 2011); and (3) interviews with employees of the same production sites in order to have real workers' testimonies. A set of actions, procedures, and standards have been chosen to be integrated into the simulator in accordance with the available techniques. The simulator offers 10 professional gestures (dressing, surface cleaning, etc.) and 60 items.

In the second phase, we have designed the scenario based on the following requirements: (1) to reproduce a typical day's production by defining the basic steps common to all factories; (2) to integrate the rules, standards and gestures that are common to all target factories; (3) to reproduce a common type environment; and (4) to integrate professional practices that are also common to all target sites. A scoring algorithm was developed according to the prioritisation of tasks (in order of importance) characterising a procedure. Other factors were also considered: the elapsed time, the number of hesitations, and the progress in performance.

The third and final phase has been the realisation of the human-machine interface. It includes options to interact with objects, the environment and the avatar that represents the user-learner in the VLE. The interface was designed in line with intuitiveness and simplicity criteria to reduce the difficulties related to the use of the simulator. For example, when an object is selected, it appears at the bottom of the screen in the virtual user's hands; the displacement of an object is done by drag and drop to the place of destination. In this phase, numerous usability tests have been implemented in order to improve the ergonomics of the simulator.

In order to verify or disprove the better efficiency of using LabQuest Pharma® for training professional skills, a one-factor (learning professional gestures with the SG versus classical training) pre-post-test protocol with a sample of 45 people who have never worked in an aseptic zone has been designed. The results showed that 87.6% of the subjects who completed the LabQuest Pharma® protocol correctly succeeded in accomplishing gestures and procedures in the post-test phase, while 57.5% of the subjects trained with the traditional method succeeded in doing so (see Denami, 2016a, for more details).

In addition to the validation of the SG for training sessions and its commercial interest based on its training validity, the design of LabQuest Pharma® has shown that designing a VLE that combines relevant didactical, pedagogical and technical artefacts, so that they become instruments without generating instrumental conflicts, enables the implementation of didactical objects that were not treated in classical training sessions, mainly professional gestures (procedural knowledge) rather than reasons why things should be done to respect such a procedure (declarative knowledge). In particular, the analysis of work activity enabled the identification, collection, analysis and selection of the fundamental contents to design the training tool (Samurçay & Pastré, 2010). The instrumental conflict concept then shaped the method of selection and adaptation of contents to digital technologies in a bi-directional way: the contents were selected according to available digital technologies and, in the same way, the choice of technologies was influenced by the new content possibilities.

7 Conclusion: toward a better understanding of educational practice online

The development of LabQuest Pharma® has confirmed the interest in the concept of instrumental conflict in ID; however, above all, the main interest in VLEs is to implement new learning objects that were not reachable with traditional 2D technologies, such as paper-pencil/blackboard-chalk/handbook-teacher. In retrospect, it can be considered that most of the contents taught today are those that are compatible with the printing industry and writing by hand. Although many innovative ways of delivering content can benefit from the use of ICT (Sharples et al., 2015), by exploiting connectivity between learners' event/content-based learning opportunities and learning by doing experiences, they all aim to optimise existing teaching techniques supported by ICT. This, for instance, is the case for peer-assessment in MOOCs and flipped classrooms in blended learning programmes.

Recent changes in teaching practice and learning conditions listed above also suggest that openness, as provided by OERs and further approaches need to be usable as well as to be available. Their use by learners and, occasionally, difficulties encountered by learners while using them, can be explained by instrumental conflicts. But, more interesting, their design can benefit from the distinction between didactical objects and pedagogical (re)presentation of these objects to be used online. Altogether this calls for the application of suitable theoretical paradigms that reach beyond classic learning theories on the one hand and is not completely limited to the educational domain.

On the other hand, such new understanding of socio-technological conditions needs extension by additional consideration of framing institutional circumstances which has rarely been discussed in educational literature and was rather a topic of some sociological, organizational and business studies. Obviously such analysis does not necessarily demand a modelling by neither computational or information science neither media technology.

However, when investigating the educational practice (cf. for example Misoch & Köhler, 2006) one remaining challenge is to educate and train teachers in a way that allows them to apply such renewed analytical understanding in their daily practice when applying digital technologies in and outside the classroom. Authors intended to open up education-theoretical reflection by rethinking educational practice online toward an empowerment of its users.

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Developing Research Standards in a Digitalized World

Perception of Digital Methods' Ethics among Egyptian Researchers

Hesham Ahmed Faied[1]

Keywords: Digital Methods, Big Data, Research Ethics, Privacy, Algorithms

Abstract

The use of online and digital methods to collect and analyze research data triggers questions about its ethical considerations and what are the limits of using these methods. This study concentrates on how Egyptian researchers, especially in the field of social science, perceived and applied these ethics and limits.

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F.M. Dobrick et al. (Hrsg.), *Research Ethics in the Digital Age*,
https://doi.org/10.1007/978-3-658-12909-5_7

1 Recent Ethical situation

In the last few years, many developments affected the scientific working environment and sparked questions about digital methods ethics. For example, a recent paper published in the Proceedings of the National Academy of Sciences describes a mood manipulation experiment conducted by Facebook scientists without user's explicit consent during one week in 2012; this experiment suggests evidence of positive and negative affects between people. This raised a discussion of whether it was unethical or balanced between benefits and risks (Broaddus, 2014). And after the Snowden revelations about National Security Agency surveillance, starting in 2013 "the ethical turn becomes more urgent as a mode of critique" (Lyon, 2014).

Users of social networking services have a plausible interest in how their content is used in experimental research on grounds of risk and autonomy. However, at the present time, they have no control over this use and the manipulation of their content, including how formal protections are not afforded under existing frameworks for research ethics (Merriman, 2014).

2 Collecting data

In terms of Big Data stakeholders, data scientists have a lot of power. They determine which data is collected, which is stored and for how long (Zwitter, 2014). And the Common rule needs to reflect that even anonymous, public data sets can be harmful depending on how they are used (Metcalf &- Crawford, 2016).

Sometimes the nature of how the social network is analyzed plays a role in the ethical choices of the researcher. The privacy policies of Facebook, for example, make it hard to retrieve content from restricted user profiles. Accessing these data may be possible by asking and being accepted as a Friend by the subject we desire to observe (Giglietto & Rossi, 2012). Algorithms for social science research reside in their ability to search, process and relate millions and billions of documents and data markers. But they can only do that if we have the necessary data (Mutlu, 2015).

3 Privacy

Individuals have an interest in exercising control over how their creations are used. However, it has been shown that there are legal and technological obstacles to full management of one's creations online (Merriman,2014).

The concept of perceived privacy concerns the expectations that Internet users may hold concerning the privacy of their online activities, their control over personal information, and their protection from harm (Lomborg, 2012). The privacy concerns might not be an issue when we are researching documents that are in the public domain, but they become a serious issue when we focus our research on tweeting or other social media posts to gather information about public opinion. For example, by focusing on the individual tweeting, we can identify their relations within those social networks (Mutlu, 2015).

4 Anonymity

Anonymity identifies three functions in qualitative research: anonymity as 'ontology', anonymity as 'analysis' and anonymity as 'independence' (Vainio, 2012). The anonymity of cyberspace allows internet users to express themselves in ways different from their real world interactions. (Rodham & Gavin, 2006).

5 Legislations & Ethical Frames

We will need new legislation and new commitments so that mythical algorithms and formidable legal codes no longer pose such impossible hurdles to civic engagement (Linchuan Qiu, 2015). The ethical issues encountered when planning and implementing research online are not different when conducting research via traditional tools (Rodham & Gavin, 2006). The AOIR ethics 2.0 guidelines offer a framework for internet research ethics. Hence, the guidelines may be a chance for discussions to lean upon for future research (Lomborg, 2012).

6 Research questions

The aim of this study was to state the awareness and opinions among researchers regarding the aforementioned aspects and challenges of digital research

methods. Using the Egyptian scientific community in social science as a case study, the following questions arise:

How do Egyptian researchers realize ethics about collecting and using Internet data in digital research methods?

How do they evaluate their colleagues' behavior with digital methods?

What should be the main features of a law to protect Internet users' data - in their opinion?

7 Method & Tools

20 interviews with Egyptian professors & researchers from faculty of mass communication, Cairo University were conducted. Their distribution: one professor, 3 Associate professors, 5 Assistant professors, 4 PhD researchers and 7 Teaching assistants (in a master's degree program).

8 Results

8.1 Ethical Considerations

80% of the sample agreed that they would think first in how ethical the topic was before they start in applying research. 60% of sample also agreed with the argument "we can use any sort of data from online platforms if not against privacy policy". 30% refused the argument. Also, 65% of the sample agreed with the argument "we cannot use personal data or opinions without user permission".

Respondents added reasons why some of their colleagues choose to ignore privacy policies. A shortage in Arabic literature about privacy policies is one reason. Also, not studying the topic of research ethics deeply enough in their university degree is another reason. Not understanding some privacy policies and the desire to finish their studies in short time are also important reasons.

90% of the sample supported the argument "we should depend on scales and results showing techniques which protect user's personal data". 60% of the sample refused anonymity in collecting data from online forums and social networks like Facebook -for example, hiding researchers' identity from groups they join.

40% of the sample accepted using children online data in research, 25% refused.

The sample's opinion was split concerning the effect of informed consent. 35% of sample agreed that "informing users about using their data make them anxious and may not use these platforms". At the same time, 35% refused the argument.

These percentages don't express the specific reality of using digital methods in the Egyptian context, as part of the respondents never used these methods in their research till now. Also, when I used the third person effect technique and asked respondents about their colleagues' behavior, their answers proved to be completely different.

8.2 Why colleagues may not review privacy policies

The respondents expressed why some of their colleagues might not review privacy policies before conducting research using digital methods and delivered the following reasons:

- The nature of the Internet that makes big amounts of data freely available.
- Not caring about users' privacy.
- No law for privacy.
- Absence of knowledge about privacy policies in websites of concern.
- Concentrating only in finishing research as long as no one is harmed.
- No guidance from supervisors.
- Lack of awareness of research ethics.

8.3 Suggested Law features

The respondents suggested some rules to be included in any upcoming data law:

- Never use data without personal permission.
- Disclosing researcher's identity and his purpose of using data.
- Websites are obligated to inform users about their privacy rights and how to control it.
- Fees to be paid in exchange of using user's data.
- Mechanism of user's permission to use their data in research.
- Rules of storing data and using it more than one time by researchers.
- Defining categories and conditions of not using their data like children.
- Strict punishment for using data without permission.
- Facilitating procedures to report abuses.

9 Conclusion

A clear attitude appeared between researchers about the necessity of thinking about ethical matters before conducting research depending on online data. They supported reviewing privacy policy, having user's permission, and protecting personal data in a qualitative results section.

No clear perspective about secretly joining and collecting data, using data if not harming users, and using children data was shown. In addition, no clear response concerning the effect of informing users about their research can be given.

For future research, results of this paper need to be tested in a wider scale and compared with the factual status of Arabic literature in this research focus by using other research tools, such as second analysis.

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Rural India in the Digital Age

Manushi[1]

Keywords: Information and communication technologies, rural India, mobile service, economical, political and cultural barriers

Abstract

Information and communication technologies (ICTs) are widely acknowledged as an important resource in all the aspects of socio-economic development, and this is especially articulated in national policies. In developing countries, this perspective incorporates ICTs into the development agenda because of their relevance in transforming human activities and in presenting new opportunities for economic growth. ICTs have very resounding presence in present day and age but one can not ignore the digital divide and social exclusion in today's context. A considerable number of marginalized groups remain unreached by the benefits ICTs are supposed to offer. The vision of a so-called "information *society* for all" as stated in both developed and developing countries' ICT policy documents today does not apparently include "all". This article examines the patterns of ICT use and information flow perceived in India, especially in the rural areas where the impact of ICTs is still very limited, despite its penetration into every corner of modern life.

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1 Introduction

Information and communication technologies (ICTs) are widely acknowledged as important resource in all aspects of socioeconomic development, and this is especially articulated in national policies. In developing countries, this perspective incorporates ICTs into the development agenda because of their relevance in transforming human activities and in presenting new opportunities for economic growth. ICTs have very resounding presence in present day and age but one can not ignore the digital divide and social exclusion in todays context. It is also argued that inequalities have increased since the late 1970s between and within countries, as well as in both developed and developing nations (Thomas &Parayil, 2008). A considerable number of marginalized groups, such as rural population, women and low-income youth remain unreached by the benefits which ICTs are supposed to offer. The vision of a so-called "information *society* for all," as stated in both developed and developing countries' ICT policy documents today, does not apparently include "all" (Chiumbu, 2008). There are reasons to question both the local practices and the future vision for ICT, and how the industry sector can play a role for ICT inclusion; how and on whose premises. Global visions and myths on possible prosperous ICT futures are continuously repeated, but there are attempts to problematize the mindsets and visions associated with ICTs for "development" (Mosco, 2004).

The study examines the patterns of ICT use and information flow perceived in India, especially in rural areas. India is a country of multiple divides; social and economic divides already exist in the country and now with the emergence of new ICTs new divisions are taking shape on the basis of many factors involved in its use and access. Today, growing ICTs and the telecommunication in the country have given opportunities to the excluded sections to be part of this new information society. But the impact of ICTs in rural areas is still very limited, despite its penetration into every corner of modern life. There is need of relatively increased flow of information and special skills to make full use of ICT for socio-economic gains.

1.1 Objective of the Study

The study examines the patterns of people's ICT use and information flow perceived in India, especially in the rural areas of Haryana which is one amongst India's developing states.

1.2 Field of the Study

The study has been conducted in a comparative perspective with reference to two villages (Babupur and Dharampur) of different social and demographic composition, located at equal distance from the district headquarters at the Gurgaon city of Gurgaon Development Block in the Gurgaon district of the State of Haryana. The headquarters of the development block and the Gurgaon district are located in the Gurgaon town, which is emerging as a major hub for information and communication technology and automobile industry. Haryana itself is an aspiring e-Governance leader-state as per the India's e-Governance Readiness Index, giving particular stress on implementing Mission Mode e-Governance Projects identified under the National e-Governance Plan (NeGP).

1.3 Methodologyof the Study

The descriptive research design is used to analyze the ICT use patterns and flow of information among the people of Babupur and Dharampur villages. The chart given below shows the sampling and sample size of the study.

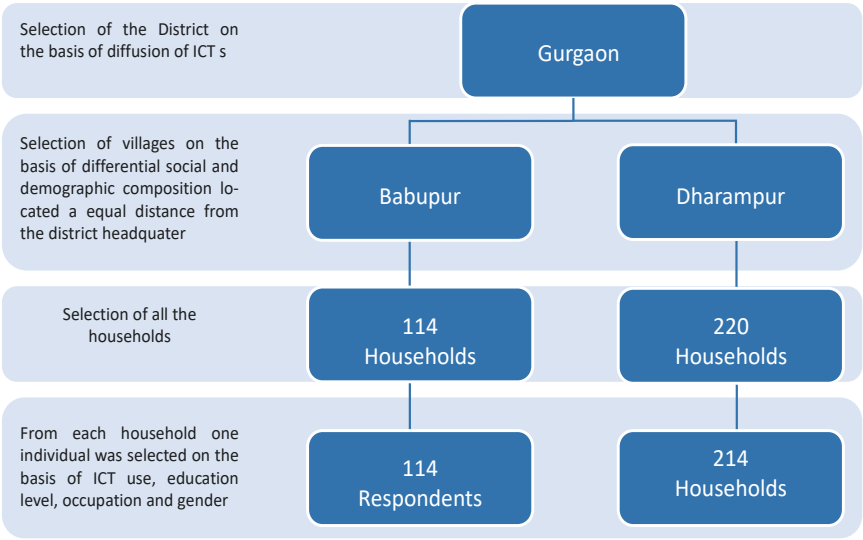

Fig. 1: Sampling of the study

2 Analysis &Conclusion of the Study

2.1 Patterns of Communication in Rural India

As such rural inhabitants do not have any specific informational needs. For maximum time, they are engaged in eking out their livelihoods. In rural areaspeople are very much involved in the families and communities. Because of this their inner circle for communication falls between these two, and consequently, whatever information they need is related to family and community only. In outer communication circles, they interact with unknown or lesser known people sometimes regarding the work or any other purpose which is quite limited. Thus, in rural areas people communicate at two levels; one is the inner level which is close to them and about which they always want to be informed and the other is the outer level which is not that much close to them but is somehow linked to them. Mobile service is the only ICT which fulfills their informational needs at both the levels. It has a great impact on their inner communication circle because it is fast, cheap and easy to access.

2.2 Patterns of Access to ICTs in Rural India

Mobile service is the most acceptable ICT in rural India and is equally popular among every age group and gender. Whereas internet has to go a long way yet to reach members in rural India, it is limited to the young and literate people. Its cost and complexity keep it away from that majority of people who are poor and illiterate. Also, it doesn't fulfill their inner communication circle informational needs in a simple way. Other than capacity barriers, infrastructure is another major barrier for the people to access the internet.

2.3 Patterns of Access to ICTs on the basis of Caste

Rural India remains a caste-based society and the traditional village economy revolved around a hereditary caste hierarchy that prescribed individuals' occupations. Upper castes were the landowners, middle-ranked (backward) castes- the farmers and artisans, and the lowest-ranked (scheduled) castes- the laborers who performed menial tasks. The social and cultural capital, as well as the educational capital, that the people from historically higher castes may possess gives them distinct advantage in securing better opportunities. Whereas lower castes lack social, cultural and educational capital and therefore they have limited or little opportunities. This is one of the important factors which hinder their potential access to finance due to which they lack access to ICTs.

2.4 Patterns of Access to ICTs on the basis of Gender

ICTs are not gender-neutral. ICTs exist within the societal realm, so they are influenced by society in terms of gender. Because of this they impact both men and women differently. There is found ample difference in the access of men and women to the ICTs. Education attainment of women is extremely low, and as a consequence they are unable to pursue and develop skills and opportunities. The most time consuming activities for women are cooking and taking care of household members. Another prominent challenge is the lack of relevant local content and the continued use of predominant English language.

2.5 Patterns of Access to ICTs among the Youth

For young people, access to information means better access to capital, market and training needed to pursue a career or studies. Entertainment is the main reason for most youths to use mobile phone and the internet as they play games, download music, and videos and talking with friends. The ICTs have wide-ranging effect on youth transitions. New opportunities for work and study are opening up for the youth in the country. These new technologies with their interactive and decentralized nature are providing youth many more opportunities to obtain information outside the traditional channels, enhancing their agency.

On the whole, ICTs are used by community members in the rural areas but these are at very nascent stage. ICTs, especially mobile services, have great impact on the life of people, whereas internet is still emerging among them. The use of mobile service breaks all social, economical, political and cultural barriers. Youths are becoming the leaders of ICT usage. ICTs are providing ways to become economically, socially, and politically transformative. The impact of village structure, size, location and distance from city does not matter in use of ICTs; it is the individual capacity and infrastructure characteristics which matter the most.

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Ethical Issues in Collecting Data from Informant of the Field

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Keywords: Ethics, research, Informed Consent Form, data collection.

Abstract

The current paper seeks to analyze ethical challenges that researchers face while conducting data collection activities on the field. Information provided in this paper derives from a 7-months field work in Cameroon (Central Africa) with the aim to collect data necessary to evaluate governmental strategies for public education and capacity building on climate change. One significant element that embodies ethical codes in data collection tool is the use of the Informed Consent Form. The experience described in this paper aims to show that despite its importance for ethical considerations, in some situations, implementing the Inform Concern Form may rather represent a hindrance to the process of data collection.

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F.M. Dobrick et al. (Hrsg.), *Research Ethics in the Digital Age*,
https://doi.org/10.1007/978-3-658-12909-5_9

1 Introduction

Located in Central Africa, Cameroon is considered as the driving force of the sub-region due to its strategic location in the center of the African continent. During the last five years, the country has been under the constant threat of large range of natural disasters. In such a context, the government is implementing a number of strategies for Disaster Risk Reduction (DRR) through a network of decentralized institutions and international partners (Ayanji, 2004). Despite a high level of deployment, these activities still prove to have a low level of efficiency on the field. The current paper is part of a PhD research that aims to understand DRR strategies' failures and propose an innovative solution using Technology Enhanced Learning. To understand these failures, we rely on results from a 7-months fieldwork spent in the country, interviewing various actors involved in Disaster Risk Management.

2 Problem Statement

The Informed Consent Form (ICF) represents an essential prerequisite to the respect of ethics while conducting a research. Its provides participants with information about: the aim of the research, what will be required of them, contact details of the investigator as well as supervisor (in case of complaints), assurance of confidentiality, information about potential risks and benefits to participation. Most importantly, the Informed Consent Form informs the respondent about the nature of the research he is participating to, and makes sure he understands that his participation is voluntary, which means he may withdraw from the research at any time. (Weppner, 1977). However, as essential as it may be, in some cases, the implementation of the Informed Consent Form may hinder the process of collecting data, thus slowing down the research process. In his article entitled "Politics and Ethics in Qualitative Research", Punch addresses that issue by asking the question "how 'honest' do you actually have to be about your research purpose?" (1994, p. 89).

In the context of our research, informants used during our field work belonged to 4 main groups: (a) Government, (b) Population, (c) Non-Governmental Organizations, and (d) Educational Institutions. Tools used to collect data were selected depending on the category each informant belongs to. We used interviews (McNamara, 1999) with informants (a), (c) and (d), whereas we used direct observation (Bernard, 2011) and household survey (Fowler, 2009) with informants (b). Using these tools, data were collected in 2 phases: the first phase consisted in testing data collection tools in order to make sure

they were efficient in collecting the type and quality of data needed, and making adjustments if necessary. The second phase consisted into the collection of data actually. During phase 1, data collection tools were administered alongside with the Informed Consent Form to all informants. Respondents' attitude raised our attention on the use of the Informed Consent Form. In fact, we realized that answers provided during HH surveys and interviews were highly dependent on the way we administer the ICF. As a result, during phase 2 which refers to data collection itself, the ICF has been administered (1) either completely (2) or partially altered. This was motivated by the need to preserve the continuity and effectiveness of the research.

2.1 Phase 1: the Informed Consent Form was administered to all informants

During this phase, the ICF was read to respondents, and the impact of its implementation has been observed differently, depending on the category respondents belong to:

a) With population

Here data were collected using household survey with a sample of rural and urban communities in selected areas. Respondents willingly answered questions depending on "what" has been announced in the ICF. For instance, respondents were highly sensitive to whether the ICF announced any kind of "benefits, compensation, etc.".

b) Government, NGOs and Educational Institutions

With this category of respondents, we used interviews and they willingly answered questions depending on "if" the IFC was accompanied by an official authorization from the respective administrative hierarchy. However, requesting that official authorization from the administrative authorities is time consuming for the researcher. Besides, some respondents were highly sensitive to words like "confidentiality". Specific questions like "how confidential is that confidentiality?", or "How can I trust you?" were addressed to the research team.

2.2 Phase 2: the Informed Consent Form was partially altered or not administered at all

As result from the pre-testing phase, we decided to administer the ICF partially altered, and sometimes we did not even used the ICF.

a) Partially altered

In this case, we deliberately omitted to read some parts of the ICF to the respondent. Eg: we avoided talking about "benefits", or "compensation" to respondents from rural areas. So that they will not request a remuneration for the answers they provided.

b) Totally altered

Here, we replaced the ICF by the official authorization letter from an administrative authority during the interview, whenever respondents belong to government or Educational Institutions. Whenever we used direct observation to collect data, respondents (mostly students from secondary schools) that were observed have not been aware that they were observed. Only the person in charge of the group (a tutor working at the multimedia center) had been duly informed by the research team and gave his/her consent on behalf of the group.

The above mentioned results show that the use of the Informed Consent Form during data collection could be influenced by the type of respondents one deals with. It could also be triggered by the nature and purpose of the research. In fact, respondents tend to answer questions differently, depending on whether they had been fully or partially informed about the nature and purpose of the research. It therefore makes it difficult for the researcher to tell when and how "honest" to be with informants on the field.

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Digital Publishing

‘Getting What They Deserve’: Digital Media Readers Comment on the Cause of Detroit’s Bankruptcy

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Keywords: Detroit, bankruptcy, digital media, online news, reader comments

Abstract

Detroit has become the preeminent example of an American city that has struggled with the nation’s transition into a post-industrial society. Although some scholars have addressed the multifaceted structural forces leading to inner-city decline, the public discourse often promotes more simplistic explanations. The NVivo was used to perform content analysis on the reader comment sections from online news reports about Detroit’s bankruptcy. Three commonly held beliefs about the reason for the city’s problems were found: blacks, liberals, and unions. This paper also addresses some of the ethical concerns of collecting data from semi-public spaces in the virtual realm.

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F.M. Dobrick et al. (Hrsg.), *Research Ethics in the Digital Age*,
https://doi.org/10.1007/978-3-658-12909-5_10

1 Introduction

Once glorified as a model of American ingenuity, the Motor City has become one of the world's preeminent examples of urban decay. Images of the city's blight have been splashed across the pages of newspapers around the globe. Foreign artists have captured the abandoned homes and factories, and their collections have been displayed in galleries across Europe (Marchand & Meffre, 2010). Detroit's massive population loss has led to so many neglected buildings that entire neighborhoods have reverted back to prairie land. The declining state of the city has, in turn, driven more residents out of town. This cycle of urban de-growth has repeated for some fifty years, making it a familiar topic for multiple generations in the metropolitan area and beyond (Schindler, 2016). Aware of the city's struggles, many were unsurprised when Detroit filed for bankruptcy. As online news portals across the nation reported on Detroit's bankruptcy, readers quickly began debating the source of the city's problems. The following paper discusses the ethical challenges I faced while investigating discourse about Detroit's bankruptcy in the online comment sections of various local and national news outlets.

3 Methods

When Detroit filed for bankruptcy, I quickly learned that news reports of the bankruptcy were a source of debate among readers. I gathered 12 online articles from the city's two major news outlets (i.e., The Detroit News, The Detroit Free Press) and four national news outlets (e.g., The New York Times). More importantly, I investigated the reader comment sections that were attached to each online article. I used NVivo to store and perform content analysis on approximately 6,000 comments posted in the reader comment sections. The word cloud produced by NVivo provided an initial idea of oft-repeated causes for the bankruptcy, which helped me identify key concepts within the data.

4 Results

I found three commonly held beliefs about the reason for the city's problems: blacks, liberals, and unions. The overwhelming majority of comments (> 80%) listed a single factor. More than being labelled the sources of trouble, these groups are also considered the reason Detroit will continue to struggle in the

future. While other cities have been successfully revitalised, commenters suggested that Detroit is getting what it deserves and should not be saved.

The virtual location of the debate taking place between commenters affected what was said and how it was said. Many digital media sites now attempt to weed out offensive comments in order to promote a public sphere characterised by civility (Zamith & Lewis, 2014). However, rather than employing people to read through all comment sections, media outlets utilise software programmes. Like any computer programme, such software can only find what programmers have told it to find. Aware of the computerised censorship, some commenters creatively spelled out offensive terms (e.g., ni66ers, nixxers) in order to fool the software into thinking they were posting acceptable materials.

5 Ethical Challenges and Concerns

At the time of Detroit's bankruptcy, I did not anticipate this project coming to fruition; I was working on an ethnographic study of the city. The bankruptcy was a major event, however, and I realised that this was an opportunity to collect data that would soon be lost. Though online news agents typically archive their articles, the comment sections of those articles disappear. Accordingly, I collected the data — which struck me as highly valuable — at the time of the bankruptcy in order to make certain that I would have the data, should I desire to work on a project about reactions to the bankruptcy. Unlike projects where the unit of analysis is the (online) news article, projects with online reader comments must be initiated at or very near to the time of posting. This challenges digital researchers to think fast and be willing to store data that is of potential use in the future.

Newspaper articles posted online are considered public information that can be utilised for research without a consent process. Digital comments on those articles, however, pose an ethical dilemma. Like offline public spaces, observations made in virtual spaces that are open to anybody with an internet connection do not require informed consent. Password protected sites, on the other hand, may be considered private spaces. Comment sections of digital media sites are typically a hybrid. While postings can be read by everybody, participation in those postings often requires logging into a third party site (e.g., Facebook). Since posters are aware that they are providing digital content for public sites, I argue that capturing data from online comment sections is no different than unobtrusively observing behaviour in a public plaza. Accordingly, informed consent is not required.

6 Conclusions

Online news readers parrot explanations of Detroit's bankruptcy found in the public sphere: race, liberal politics, and unions. The use of digital data was pivotal in allowing me to capture readers' initial responses to news of the largest municipal bankruptcy in American history. While the practice of virtual methodologies has become more acceptable to the academic community, it poses (ethical) challenges that must be addressed. Even when material is posted online from the anonymity of one's secured offline residence, expectations of privacy in virtual spaces may not exist. I suggest that researchers should consider only the public nature of the virtual space in question when determining whether or not data is public domain that can be used without consent of the poster. By not interacting with commenters who post in public spaces, scholars are exempt from the consent-related requirements of human subjects research.

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Journalists on Twitter: Reconfiguring Professional Identity, Reconsidering Research Ethics – The Case of Croatia

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Keywords: journalism, social media, professional identity, changing practice

Abstract

This paper aims to discuss the extent and potential consequences of the blurring line between professional and private activity of journalists on social media: if and how is this challenging traditional journalistic norms and routines, but also if and how this could stand as an ethical issue for researchers. The study first utilizes netnography as a method to notice potential trends and conflicts that were then used to define categories of the content analysis of tweets posted or shared by journalists in Croatia. Finally, in-depth interviews will be conducted with journalists that show to be most (pro)active in their use of Twitter. The preliminary observations suggest the shift towards more transparency and personalization. However, there is also a tendency of normalization, in particular with the gatekeeping role

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F.M. Dobrick et al. (Hrsg.), *Research Ethics in the Digital Age*,
https://doi.org/10.1007/978-3-658-12909-5_11

1 Introduction

In a digital age and within a participatory media culture, the very nature of journalism and the identity of journalists is being widely reexamined. There is a growing body of work to examine how journalists negotiate their traditional norms and routines in this participatory media setting. In the seminal study in this area, Singer (2005) examined 20 blogs of political journalists during the 2004 US elections. A blog, as a (then) new media platform, allows journalists to achieve greater accountability and transparency, to express more personality or opinion, and to act more in collaboration with their audience. This means that some of the main features of this new platform are opposing and challenging long-standing journalistic practice, in particular the nonpartisan gatekeeping role that is often seen as a backbone of journalistic identity. The working routines and norms of the journalistic profession had remained highly stable for almost a century (Schudson, 2003; Tuchman, 2002). Traditionally, journalism has been attached to the institution of the media and the process of gatekeeping was the main role of journalists to guarantee on both quality and neutrality (Reese and Ballinger, 2001; Shoemaker, 1991). Resistance to change is an inevitable consequence of changing organizational initiatives (Agócs, 1997), and in the context of the internet, politics, media and communications, this is often seen as "normalization" (Margolis & Resnick, 2000). When a change occurs, journalists try to normalize new media to fit their traditional norms and routines. Singer's (2005) study confirmed this narrative: even on this participatory platform, journalists-bloggers are maintaining control over the information, and reinforcing authority of traditional media outlets. Lasorsa, Lewis & Holton (2012) used the same approach to analyze mainstream journalists who microblog on the social media platform Twitter. Their study has confirmed a tendency of normalization but also revealed a shift towards adopting features of the new platform. Another step forward, or deviation from traditional principles, was noted in the study of Canter (2014). The data collected suggest a shift in traditional gatekeeping and verification conventions, and use of Twitter for personal branding.

The main aim of this paper is to contribute to this line of research from a non-Western and a new democracy perspective. As well as democracy itself, journalistic norms and routines, at least in the form in which they were nurtured in established democracies, in post-socialism countries do not have a long tradition. To a certain extent, they had to be revived and redefined during the social, political and economic transition. Currently we don't know much about social media-related journalistic practice in countries that have emerged at the end of 20th century with the collapse of communist rule in Central and Easter Europe. Hladik and Stetka (2015) have examined the impact of social media as a news

source in Czech news media, and found that the democratic potential of social networking sites is still not fully exploited since the Czech news media still favor "elite" sources. Klimes (2016) placed Czech Republic in a comparative perspective while aiming to show how journalists in different countries have different approaches to the use of Twitter. He argues that, unlike German and American journalists, their Czech colleagues still perceive Twitter more as a medium to support private conversations than to promote journalistic content. In Slovenia, Vobic, Maksuti & Dezelan (2016) explored the online interplay in Twitter conversations between journalists and politicians, which, in some cases, are shaped by offline relations. However, none of these studies looked at a social media impact over journalistic norms and routines. Therefore, this work aims to fill the gap in scholarship and foster the discussion on how social media affects journalistic practice in recent democracies whose journalism culture is characterized with strong political parallelism and lack of established professional autonomy (Lauk, 2008). Moreover, this study aims to observe, from several angles, how traditional journalistic norms and routines are being negotiated in participatory social media by employing three methods: netnography, content analysis, and in-depth interviews. The research is framed in the concept of professional identity of journalists, arguing that while negotiating their routines and values in the social media environment, journalists also negotiate their professional identity as an internal determination and as an external differentiation from other groups.

2 Reconsidering professional identity

The advent of new communication platforms and technologies is profoundly challenging and changing the global news environment, the process of journalism, and the identity of the journalist. The emergence of blogging, microblogging, and user-generated content interfere with traditional process of news-gathering, publishing and dissemination. Almost anyone can produce journalism and act as a journalist, and social media makes it easier for various actors to actively contribute to the public sphere. The internet-related disruption has amplified the discussion over the questions "what is journalism?" and "who is a journalist?", but a scholarly debate of journalism and professionalism lasts much longer (Soloski, 1990). Unlike established professions, such as law and medicine, journalism was always in professional limbo (Godkin, 2008). Many, not only scholars, but also practitioners, claim that it is not a profession for various reasons. Just to name two, following Davis (2010): it lacks a body of theoretical knowledge; and the entrance to the profession is not restricted, hence anyone can practice journalism. Considering the lack of theoretical

knowledge, Godkin (2008) argues that the "standard of journalistic competency must be centered on practice rather than theory" (p. 110) and that "instead of viewing journalism as a profession it might be better to see journalists as part of what Etienne Wenger (2006) calls a community of practice" (p. 120). Furthermore, he suggests that imposing any limits to the practice of journalism, like licensing journalists, would conflict with democratic constitutional theory that nurtures freedom of expression as a fundamental right.

Journalism is associated with certain norms, values, roles and routines, which shape journalists' identity but also others' understanding of it. These constructs, often taken for granted, "shape the frames of reference when journalists create and give meaning to their work as they are expected to incorporate these values and perform their duties in an appropriate manner to become a journalist" (Friedriksson & Johansson, 2014, p. 587). Mark Deuze (2005, p. 443) explored the concept of journalism as an occupational ideology to analyze how new media and multiculturalism "transform ways of thinking about and doing journalism". To conceptualize journalism as an ideology, claims Deuze (2005), means to understand it in terms of how journalists give meaning to their work. By establishing and nurturing these ideal-typical values, journalists legitimize their work. Deuze (2005) further motivates this approach by referring to Russo (1998), who suggests that journalists identify themselves more easily with what they do than with the medium they work for. Starting from the assumption that journalists worldwide share a common occupational ideology, Deuze (2005, p. 455) asserts that in this ever-changing and challenging time, it serves as the "social cement of the professional group of journalists". Deuze (2005) operationalizes the concept by extracting the core values - public service, objectivity, autonomy, immediacy, and ethics - from the work of Golding and Elliott (1979), Merritt (1995), and Kovach and Rosenstiel (2001). While placing them in the context of current cultural and technological developments, he shows how they are being negotiated, challenged and even change in different circumstances.

Professional identity emerges from the agreed value system, which is then being enforced in work through similar practices and used to hold members of the occupation together. As explained by Evetts (2014, p. 32): "This common identity is produced and reproduced through occupational and professional socialization by means of shared educational backgrounds, professional training and vocational experiences, and by membership of professional associations (local, regional, national and international) and institutes where practitioners develop and maintain shared work cultures and common values". Journalism education, therefore, plays an important role in professionalizing an occupation by transferring the knowledge and values. Nygren and Stigbrand (2014) observed how this process is carried on in different media systems, whether there

is process of homogenization among future journalists due to the globalization, or there are still clear differences as a result of different history, politics and culture. They surveyed 527 students in Sweden, Poland, Russia, Estonia and Finland, and found out that professional identities develop as a hybrid of some universal journalistic values mixed with cultural heritage and socio-political conditions of these different countries.

Another important aspect of professional identity formation is status (Windahl, 1975 in Wiik, 2009). Due to the doubts about its status as a profession, journalists draw their identity from their occupational ideology, or a common meaning of their work. However, journalism as a profession has changed significantly in the last few decades around the globe. In Croatia, it has transformed under the twofold influence: a change of social, political and economic system; and a worldwide media disruption caused by technological innovation. In the new participatory environment, it is an even bigger challenge for journalists to claim their status and legitimacy. Robinson's (2010) ethnographic examination of the local news organization in transition from the daily newspaper to an online medium demonstrated internal conflict between "traditionalists", as she called them, who want to maintain a hierarchal relationship between journalists and audiences, and "convergers" who advocate to give users more freedom within the news site. Robinson (2010, p. 126) called this an "identity complex" for the news profession. In the context of new democracies, namely Slovenia and Serbia, Vobic and Milojevic (2014) found a troubled negotiation among online journalists in traditional news media institutions (two leading newspapers: Delo and Novosti). Even though they all claim to commit to the same core values, interviewed online journalists said it was difficult to acknowledge themselves as part of the traditional journalistic community as they did not publish original news stories nor act as watchdogs because of constant immediacy demands of the online news platform. This suggests that the identity of journalists is strongly linked to journalistic practice. In order to assess reconsideration of the professional identity in the digital age, one first has to take a look at how journalists negotiate their norms and routines in the new environment, and what kind of meaning they give to the emerging practices. For this purpose, it seems reasonable to employ theoretical framework that conceptualizes journalism as an occupational ideology, as advised by Deuze (2005). In defining and sampling journalists, this paper follows the descriptive definition proposed by Peters and Tandoc (2013, p. 61): "A journalist is someone *employed* to *regularly* engage in gathering, processing, and disseminating (*activities*) news and information (*output)* to serve the public interest (*social role*)", with *employed* taken in the broader sense to include also freelancers.

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Human Rights and the Regulation of Anonymity. New Challenges to Law and Research

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Keywords: human person, human rights, anonymity, research

Abstract

This article aims to analyze how new regulations about anonymity and freedom of expression in the current age of informatics and technology can have effects on legal and constitutional theory. In addition, it intends to go a little further and proposes to explicitly make some advantages and disadvantages for which the legal regulations might bring up for researchers.

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https://doi.org/10.1007/978-3-658-12909-5_12

1 Introduction

Technological improvements are part of our life, every step we make is located by some element, doubts we have might find an answer thanks to internet, and our opinions can go around the world after just one click and so on. The starting point of this paper is the fact that the Big Data era has come to redefine Human and Social Sciences. The challenge that these disciplines are facing is to protect the human person as an ontological value.

On May 22, the Special Rapporteur of the Human Rights Council pointed out the need to establish new regulations about anonymity and freedom of expression in this technological era.

This presentation aims to analyze some aspects of this report. In addition, it proposes to explicitly amplify some advantages and disadvantages that legal regulations might bring up for researchers and emphasizes the need of not forgetting that behind data are human beings.

2 Some internet statistics

By July of 2016, the Internet had 1.846.212.654 users in the entire world. The world population by then was approximately of 7.340.159.492 people (Internet World Stats, 2016). This means that at least 50,1% of world population had access to internet and was part of the online world.

The amount of personal data that are registered on the Internet is monumental. From the key words we look up, the web sites we visit, the newsletters we receive, the people that are our friends, the games we play, the news and jokes we read, the music we like, the sports we practice, etc. but not only that. In addition, the amount of times that we visit webpages and the timetables of our visits, what we buy, if we do it on sales or not, in which moment of our lives we do so, etc. remain registered.

One of the main sources to quantify our entire life as individuals and members of a society are social media outlets.

By January of 2017, Facebook had approximately 1.871.000.000 active users (Statista, 2017a). Not every user is a real person and sometimes, some people have more than one account. Even though this number might not seem very shocking at first, when we compare it with other numbers, it can show us the relevance of this particular social network. For example, China is the most populated country in the world. It has around 1.374.000.000 habitants (National Bureau Statistics of China, 2017). The second most inhabited country is India with approximately 1.210.000.000 persons (Government of India, *s/d*). The

United States, the third country in population, has approximately 324.516.000.000 persons living in its territory. Germany, per example, the 16° country in population, has around 81.500.000 habitants (Statista, 2017a). This means that if Facebook would be a country, it would be the most populated one[2].

Not only are Facebook's numbers surprising, however. Other social networks have many active users: WhatsApp and FacebookMessenger have 1.000 million, QQ, 877 million, QZone, 632 million, Instagram, 600 million, Tumblr, 550 million and Twitter, 317 million —all numbers are approximations— (Statista, 2017b).

The comparison between countries and social media can be seen in Table 1.

Tab. 1: Comparison between the amount of active users of social networks and State's population (approximation to December, 2016)

Social Media	Users	Country	Inhabitants
Facebook	1.871 million		
		China	1.374 million
		India	1.210 million
WhatsApp	1.000 million		
Facebook Messenger	1.000 million		
QQ	877 million		
QZone	632 million		
Instagram	600 million		
Tumblr	550 million		
		USA	324.516 million
Twitter	317 million		
		(16) Germany	81.5 million

Sources of the amount of active users of social networks by 2017: Statista, 2017b. Sources of the amount of habitants per State: National Bureau Statistics of China, 2017 (China)[3]; Government of India, 2011[4] (India); D-Statis, 2017[5] (Germany), United States Census Bureau, 2017 (USA).

2 I owe the idea of this comparison to Professor Fernando Barrio, personal communication, 6/11/2014.

3 This number belongs to december, 2015.

4 The last census was held in 2011. The Government does not share an official projection of the population by 2016 but, according to the grouth rate, it is possible to calculate that by december, 2016, there would have been approximately, 1.331 million inhabitants.

3 The problem

The enormous amount of data that can be found and that are registered in social media and on the Internet tells a lot about people. Nowadays, the importance of these data is not grounded on the possibility of knowing the human being behind them, but to know the customers and political agents behind them. The data that these websites and social media have developed into commodities, something with a commercial value. The data tell a lot about people, but mainly for statistics and not about them as humans. People get to be a "quantified self" (Han, 2014).

If data are commodities, it means that someone is selling and earning money with people's privacy. Is there a right to be anonymous?

4 The right to anonymity

The special report of United Nations (22/5/2015) departs from the fact that in this digital era, the field of wrongdoing and committing crimes is not only the physical but also the online one. In fact, technology is a useful tool to operate legally and illegally. Because of this, governments have an interest to control information that can be found in different forms of media. Of course, the main concern of individuals is the invasion to privacy and the limits that may take precedent over their freedom.

Nevertheless, the interference into the private sphere is not only made by individual States but also, and mainly, by different corporations that use these data as commodities (UN, 2015). At least, clearly, we can point out that our privacy is not completely strict.

In the first instance, we can highlight anonymity as a way to intensify our privacy. It aims to avoid the identification of the person who performs a certain action. There are many ways to ensure anonymity and these go from complex mechanisms to hide an IP, per example, to simpler mechanisms such as creating a false account.

Guaranteeing anonymity as the possibility for protecting the identity in front of others can make a user feel more free to share ideas and opinions than he would if he would have to identify himself. People can try to hide under the use of pseudonyms or other mechanisms, such as hiding their image or voice. Nevertheless, all these mechanisms are not very good when it concerns shutting down governments spying or corporations selling data.

5 The number is an official projection published by the government of Germany.

The emerging problem about this is if it is convenient or necessary to regulate the right to anonymity as an element of freedom of speech and expression in order to make other goals such as national security and public order possible. About these regulations, according to the United Nations (2015), there are some requirements that any regulation to freedom of expression and the right to anonymity should accomplish:

1) Every restriction must be done by a law that has to be precise, public, transparent and must avoid giving authorities an unlimited discretion in order to interpret and apply the restriction;

2) The limitations are only justified in order to protect specific interests whether they are other people's rights or reputation, national security, public order, public health, etc.;

3) The State must show how a restriction is necessary to reach a legitimate goal.

These requirements come from different international treatises. The articles of the most relevant ones can be seen in Table 2.

Tab. 2: The protection of privacy in different human rights systems

Universal system (UN)	*Universal Declaration of Human Rights (1948)* Art. 19
	International Covenant on Civil and Political Rights (1966) Art. 18 and 19
European system	*Convention for the Protection of Human Rights and Fundamental Freedoms (1950)* Art. 9 and 10
	Charter of Fundamental Rights (2007) Art. 8, 10 and 11
American system	*American Declaration of the rights and duties of man (1948)* Art. IV
	American Convention on Human Rights (1969) Art. 11, 13
African system	*African charter on Human and peoples' rights (1981)* Art. 9

Sources: United Nations, 1948 and 1966; European Union, 1950 and 2007; Council of Europe, 1950, European Union, 2007; International Conference of American States, 1948; Organization of American States, 1959; African Commission on Human and Peoples' Rights, 1981

5 Social and Human Sciences and the ethical challenges on data availability

The second aim of this presentation is to comment on some advantages and disadvantages of the multiplicity and variety of data available in this digital and technological era and of the right to anonymity for the social and human sciences research.

When researchers do their jobs, they need data and information. Nowadays, data and information collection is hardly an obstacle. However, many problems and situations deserve special attention.

The first of these problems is the massive availability of data and the concentration of attention upon them. These two things provokingly suggest that quantitative methods prevail over qualitative ones. This is not a problem itself, but if the qualitative research is left aside, a relevant part of innovations and explanations that social and human sciences might be able to give run the risk of getting lost. The responsibility, in this case, is on the researchers and the scientific and technical institutions. Data do not show problems by themselves. To appreciate the whole picture, it is necessary to do qualitative research that may show the problems that a certain society has. In order to qualify a situation as a problem, a certain valuation is needed or a social consideration about the issue should be solved. Of course, this escapes the fact that technology can only be a tool to survey data and relies exclusively on human reasoning.

Second, the researchers, while doing their work, must quote their sources in order to demonstrate being ethically solid and to have firm basis for their thesis and conclusions. If certain relevant data are anonymous, this creates severe problems to make the correct quotations or explanations because the sources are decontextualized due to the fact that their anonymity is guaranteed.

This problem has many perspectives. One of them implies the impossibility of quoting the names of those who have given certain information which makes the contextualization of the information elusive. One example would be when some possible damage to a critic or another agent emerges from the information. In the case that the damaged person wants to use his right to defense, he cannot because the source is protected. This is the case for many public universities in Argentina that have established anonymous surveys for students to evaluate professors. If bad results imply firing the professor in an obligatory manner, then the surveys can cause a damage. If the professor wants to file a claim against the administrative act that fires him, he must argue against the content of the surveys. To say that what a student comments (per example, that an evaluation of his exam was arbitrary) it might be essential to know who the author of a survey is. If it is anonymous, this poses as a major problem.

Until now, most public universities have decided not to make the consequence of firing someone grounded on anonymous surveys obligatory, as it might be declared illegal.

In a third scope, if research has an aim to be applied in making public policies, it requires a balance of different criteria: who are the people and social sectors involved, how to quantify data and which decisions can be better when facing a problem, among others. Human reasoning, in this instance, is more important than obtaining and processing data.

6 Big data and the changes in the human person ontology

According to Han (2014), the era of Big Data implies that every human being is measurable. Furthermore, what is not measurable must be discarded. This has strong effects in philosophical, scientifically and humanistic terms. Ontology loses sense because it is speculative, there are no questions about the being nor the transcendental, it only matters to have data and analyze tendencies. The human being becomes, under this framework, a bunch of numbers and statistics. Scientific theories in the humanities and social disciplines are useless if they try to understand beyond the mere detection of regularities. Every theory of human behavior is useless unless they are grounded on data and this goes for the linguistics, sociology, law, etc.

Data and numbers are not narrative but additive, and that is why they completely lose their purpose (Han, 2014). It does not matter the history or the projection of the study objects; the context is just more data to explain tendencies. In these terms, the faith in measurability and quantification of life dominate this digital era.

The quantified self does not answer the question of who we are; it does not allow for understanding how we are or why we behave in certain ways. The self becomes devoid of meaning and ends up becoming mere data and graphics that show those data. Today, every click is registered; every word we look up, our online life is surveyed and registered. Our digital habits proportionate an exact representation of our person and our costumes. Big Data does not forget anything. Big Data might know personal wishes about which we are not even conscious. Nowadays, humans are treated as data packages that can be sold and have an economical value (Han, 2014).

Human society is a narrative, a story of which forgetting is also an integral part. Digital memory is just an addition and an accumulation without empty spaces. Data are to be registered but not narrated.

7 Final considerations

The technological advances in the present digital era has become a very advantageous phenomenon. However, it has its disadvantages too as it may 1) violate the privacy of individuals (this is the main concern of the UN rapport and of the international treatises mentioned in Table 2); 2) leave aside human ontology and the possibility of forgetfulness (as commented by Han, 2014) and 3) bring up some challenges to social and human sciences (as said above).

As we can see in the problems mentioned above, whether in relation with anonymity, research or quantification of persons, all the aforementioned issues have a link with protecting the human beings behind those data. The center of attention must be the person as itself with dignity and not just an object, data or a commodity.

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Online and Offline: The Ethical Considerations of Researching the Use of Social Media by Traditional Journalists in Northern Nigerian Newsroom

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Keywords: Ethnography, northern Nigeria, online journalism, offline journalism, daily trust, research ethics, social media

Abstract

My PhD Research Project interrogates the impact of the internet on the news production practices within Daily Trust Newspaper in northern Nigeria. As part of this project, a study was conducted by drawing upon the two theories of McNair's Chaos Theory of the sociology of journalism and the Social Construction of Technology approach in order to understand how the internet impacted on the news production practices during the coverage of the 2015 general elections in Nigeria. The poster presented some of the ethical challenges that were faced by the researcher during the course of the fieldwork; challenges such as negotiating access and also deciding when to ask for consent.

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F.M. Dobrick et al. (Hrsg.), *Research Ethics in the Digital Age*,
https://doi.org/10.1007/978-3-658-12909-5_13

1 Introduction

This contribution presents a brief description of the poster presented at the Summer School on Research Ethics in the Digital Age at TU Dresden under the title of Online and Offline: The Ethical Considerations of Researching the Use of Social Media by Traditional Journalists in the Northern Nigerian Newsroom.

The poster is a supplement of a study conducted as part of PhD research field work which was carried out at the Daily Trust Newspaper newsrooms in northern Nigeria during the 2015 general elections. The aim of the main research is to understand the influence of the internet and new media technologies on newsroom journalistic practice and content within the traditional newspaper. The aim of the poster is, however, to highlight the ethical challenges faced by the researcher and how those challenges were mitigated during the course of the field work.

The first section briefly introduces the main research and provides the context under which the ethical considerations where analyzed, while the second section presents the ethical challenges highlighted in the poster.

2 Blurring boundaries: online and offline

Unlike the seminal newsroom ethnographies that were conducted in the past, (Tuchman, 1978; Schlesinger, 1978; Gans, 1978) there is now a multiplication of news sourcing sites. Journalists today do not only rely on official sources for news but also have the option of sourcing and researching their news stories from the comfort of their desks via the internet and other new media technologies, such as email and social media sites like Facebook, Twitter, Snapchat, Instagram etc.

Furthermore, as the boundaries between online journalism and traditional journalism continue to blur with the increase in adoption of the technology by news organisations and journalists around the world, research on new media or new information communications technology (ICT) in Africa remains limited, fragmented, and typically undertaken as isolated and disconnected projects (Mabzaewara, 2010). There is very little research on new media and mainstream journalism, despite the fact that journalists happen to be the largest internet users in Africa (Mabweazara, 2014). This is as a result of the parochial nature of the empirical, as well as theoretical, understandings. As pointed in Mabweazara (2014), the trajectory of scholarly analysis which, among other things, seeks explanatory frameworks in the uneven distribution and utilization of technological resources between the economically developed north and the

poor south (p. 3). Researchers often take for granted the fact that there are important differences between African countries, which in turn influences the local context of appropriating ICT and new media technologies (Ibid).

Another major paradigm that has for many years dominated thinking and understanding of the sociology of journalism is the Control Theory. This is a paradigm which is based on the notion that the media is subjugated and controlled by authority either of the owner, the state, or other external force. It is underpinned in many critical theories such as Hall et al. (1978), Tuchman (1978), Herman & Chomsky (1988) and many of the studies of news work (Van Dam, 2011, p. 102). Chaos Theory, on the other hand, is a theory that challenges those dominant critical theories[2]. Following the line of reasoning which accepts that "human societies can be viewed as organisms, which evolve and adapt to changing environmental conditions, and which compete with each other in a struggle for survival" (McNair, 2003, p. xix).

Chaos Theory is a research perspective which suggests that the sociological study of journalism should move beyond the dominant paradigm, where news production and media in general is understood in terms of apparatus of social control by the dominant elite. It is a theory that suggests that the journalistic environment should be seen "more like the weather and the oceans in the age of global warming- turbulent, unpredictable, extreme. Like storm fronts, journalistic information flows around the world in globally connected streams of real-time data, forming stories which become news and then descend through the networked nodes of the World Wide Web to impact on national public spheres" (McNair, 2003, p. xix).

Therefore, by combining this paradigm with the social constructionist approach, which is a sociological theory that offers a non-techno-deterministic approach to understanding the sociology of news work, it was hoped that the result may provide unique insight into the social factors that shapes the appropriation of internet and new media technologies in northern Nigeria.

The study was thus designed with an ethnographic methodology which meant that the researcher had to go into the newsrooms to observe and gain a first-hand experience of how journalists were utilizing the internet and new media technology to source, process and disseminate their news stories during the period of the election.

2 It is a theory presented by McNair (2003, 2006) a media sociologist who believes that journalism is influenced by a variety of factors beyond the control paradigm.

3 New opportunities, New Ethical Challenges

The introduction of new media technologies in the newsroom has both simultaneously restricted and widened the amount of information accessible to the ethnographic researcher (Puijk, 2008, p. 40). Depending on the kind of access one can negotiate, information flow inside computers can be hidden or it can provide rich source of information (Ibid).

Unlike conducting a newsroom ethnography in the traditional way; where the ethnographer could follow a journalist or just sit in a newsroom and observe the practice of news work and the intricate moments of decision making. For instance, whereby a reporter gets his news idea, takes it to his editor, the editor looks at the ideas, then discusses them with the reporter, and then decides on the feasibility of following up or doing the story. An activity in which a researcher could actually physically follow and observe with less interference and intrusion.

Such a scenario is no longer the reality now due to the proliferation and evolution of new media technologies in newsrooms, with journalists now using email, Facebook, Twitter, WhatsApp and other social media sites - on the go and at the same time - to research background information, search for new ideas, conduct interviews and, to an extent, for their internal newsroom communications. Researchers are faced with more opportunities for a more focused data. For example, with regards to the use of social media, journalists working in the newsroom at the Daily Trust Newspaper were observed to have used Facebook to communicate among themselves and also monitor events and news from other news organizations on their timeline and, at the same time, on the same web browser during the election coverage.

Journalists were also observed to have used their personal social media accounts to post and promote news stories to their friends and followers; they also follow other journalists, politicians, and news organizations using their own personal social media accounts. This is a phenomenal opportunity for the researcher because research data from observing the private social media accounts can give useful insights into the factors that contribute to news production and its consequences, such agenda setting in the digital age. However, these opportunities also bring with them new ethical challenges for research.

As researchers, we are challenged into renegotiating access to these new avenues. We find ourselves asking for access to areas that, in the past, have been the domain of the private sphere. As with the above example, the most important ethical decision in researching social media accounts of journalists remains the question relating to whether the account is private or public. Although most journalists who use their accounts to publish their work would not mind for a researcher to observe their activities, since this is something they

consider as public and for public consumption, it is important that we minimize the level of intrusion and critically consider whether what we do is safe and that no harm will be done in the process. In the case of Daily Trust, most of the journalists were willing to give and gave written consent for their accounts to be researched. Some were even willing to take screen shot of some of the online activities that were observed and emailed it to the researcher.

Appreciation

I would like to extend my appreciation to the organizers of the Summer School REDA at the Department of Media and Communications of TU Dresden in persons of Prof. Lutz M. Hagen, who coordinated the program, and Jana and Farina for all the support during our stay in Dresden.

I would also like to express my gratitude to my research supervisor Prof. Ivor Gaber for the permanent support, and intellectual inspirations and guidance I continue to receive from him.

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Applying Research Ethics to Different Digital Environments

Media Ethics in Research on Video-Based Mental Health Care

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Keywords: e-health, psychology, video-based therapy, research ethics

Abstract

One element of research ethics in psychology addresses the cost-benefit ratio of an experiment or study (cf. Hussy, Schreier & Echterhoff, 2013). The cost-benefit analysis does not only refer to a monetary dimension, but also takes into account societal progress more broadly, i.e. how a study or experiment can improve mental health care. As I examine a topic that is relevant for foreign psychologists and to me as a researcher, but not for German practicing therapists or counselors due to national legal constraints, I face the following question: Does research in the area of video-based mental health care provide a useful contribution to scientific discourse, despite legal barriers?

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https://doi.org/10.1007/978-3-658-12909-5_14

1 Introduction

Individuals with mental health problems face obstacles in gaining access to effective psychotherapies. Videoconferencing technology, which allows contact across geographical boundaries, offers an alternative that may improve their access. It allows low-threshold access to psychological help for individuals:

- with time restrains,
- physical disabilities,
- who live in rural communities or areas with insufficient health care.

(Simpson, 2009, p. 171)

Counseling via e-mail or chat is fairly well-established within the German psychological profession; video-based counselling, however, is not yet a common format. My Ph.D.-project addresses the question of whether or not video-based communication in psychological settings is different from face-to-face scenarios – to search for answers about why video-based counseling is not (yet) utilized in Germany. The use of video-based technology in therapeutic consultations, which are covered by health insurance, is not (yet) permitted by German law. But various scenarios for video-mediated psychological help are permitted and useful in counseling, follow-up care, and in coaching settings.

2 Method

In the search for practitioners to test video-based psychological counseling, I contacted psychotherapist training programs to examine the original research question with therapists-to-be. I faced strong doubts about the relevance of video-mediated mental health care due to the legal situation in Germany. Considering these doubts I have to ask: how does this research topic contribute to the scientific discussion if partners in charge judge this field as non-relevant for their future work?

To spotlight the relevance and benefit of possible results of the initial research question the following methodology was chosen:

- interviews with a social education counselor from Halle (Saale, Germany) and a director of a psychotherapist training program in Dresden
- a literature review regarding proceedings of health insurances, scientists and the ethics committee of German Society for Psychology (DGPs)

3 Results

This section will point out the relevance and benefit of possible results of the research question of whether or not video-based communication in psychological settings is different from face-to-face scenarios and will be discussed from different interdisciplinary point of views: health insurances, German Medical Association, psychotherapists, counselors, scientists and ethics committee of German Society for Psychology (DGPs).

3.1 Health insurance

German health insurance companies are required to ensure appropriate, nationwide patient-centered care. Furthermore, they have to guarantee timely treatment within reasonable proximity to a patient's residence.

According to the German "Social Insurance Code" and health insurance coverage law (GKV-Versorgungsstrukturgesetz), health insurance companies must cover the costs of indispensable private services if that service is not provided by public mental health care facilities (cf. Social Insurance Code, compulsory health insurance § 13 paragraph 3).

Hence health insurance companies should be interested in finding new ways of providing mental health care services.

3.2 The German Medical Association

The German Medical Association (GMA) clarified their position about the so-called "ban on remote treatment" at the end of 2015. "The regulation in section 7 paragraph 4 of the GMA code of conduct is commonly referred to as a ban on remote treatment." (German Medical Association, 2015, p. 1) According to the GMA, this is an incorrect characterization because said regulation does not actually constitute a complete ban of remote treatment (cf. German Medical Association, 2015, p. 1). The Medical Association's professional code of conduct regulates the rights and responsibilities of doctors and other health care providers vis-à-vis their patients. Section 7 paragraph 4 of the GMA code of conduct states that medical consultations or treatment cannot be conducted using print or communication media. Using telemedicine is not banned entirely; using it exclusively, however, is.

3.3 Therapists

There appears to be insufficient interest in new types of therapy or counseling by therapists, mostly because video-based therapy is not currently covered by German health insurance. The director of a psychotherapist training program in Dresden sees no relevance to the work of therapists-to-be and therefore no need for an experimental trial of video-based therapy within the training program (as part of my research).

3.4 Counselors

In an interview with a certified social worker who works as a counseling psychologist from Halle (Germany) with 10 years of experience in online-counseling two main aspects were mentioned.

- Video-mediated counseling is conceivable to her as an additional service – considering that many clients have been asking for online help for several years.
- Besides the relevance and the demand, it is a question of human resources: Her team is already "overloaded with the services [they] offer so far".

3.5 Scientists

As communication habits change in our increasing digital age and individuals with mental health problems face obstacles in gaining access to effective psychotherapies, the findings on comparisons of face-to-face and media-based conditions may influence future practice of psychological and mental health care.

"Experimental comparisons of process and outcome in distant versus face-to-face conditions may influence the future practice of psychology. Conventional wisdom insists that, for most purposes, the therapist and client must be in the same room. (…) It will be interesting to discover whether this is true. Moreover, what conditions are required to establish psychological contact with another person and, in fact, what constitutes psychological contact at all, are salient questions in the age of Internet discourse. These research questions are significant for therapist training, choice of treatment, and application of previous research findings." (Day & Schneider, 2002, p. 499)

3.6 Ethics committee of German Society for Psychology (DGP)

The ethics committee of the German Society for Psychology (DGP) serves as the Institutional Review Board for research projects and evaluates if research goals and methodical approaches are in ethical compliance. The official research guidelines do not explicitly mention research on formats or specific settings of therapy, but the committee refers to the German Constitution (Article 5), the fundamental right to freedom of science. Guideline C "Psychology in science and teachings" states that "new questions, intellectual approaches and methods are to be examined without bias with no regard to their origin".

4 Discussion

Video-based healthcare is an increasingly important topic, both in German scientific discourse and in the medical field. Several pilot projects (cf. DAK Gesundheit, 2016; Pöggeler, 2016; Beeger, 2016) funded either by health insurance companies or public agencies prove the increasing willingness to use video-based medical services, including diagnosis and treatment. As demonstrated above, the governing body of German doctors, health insurance companies, and even the German legislature are shifting their positions. The German Parliament passed an E-Health law in December 2015 (cf. Bundesministerium für Gesundheit, 2015) through which video consultation will be included in the health plan of compulsory health insurance by 2017 (cf. Bundesministerium der Justiz und für Verbraucherschutz, 2015). These legal and structural developments will enhance mental health care and will lead German therapists to rethink their approaches – as scientists already detected this field as innovative and beneficial. Video-based counseling can help improve access to mental health care and provide a new quality of treatment for people with specific needs.

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Intersecting the Digital Maze. Considering Ethics in Cloud-Based Services' Research

Daniel Kerpen[1], Matthias Dorgeist, Sascha Zantis

Keywords: responsible research and innovation (RRI), privacy and data protection, cloud computing, smartphone applications

Abstract

Significant mobile device interactivity is realized by cloud computing – e.g., smartphone applications („apps") as well as industrial smart manufacturing systems. The contribution deals with how cloud-based services such as these lead to severe privacy concerns that require consideration as ethical issues in ICT research projects. Furthermore, it critically discusses interdisciplinary, stakeholder-oriented conceptualizations of context-aware and reflective system designs.

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F.M. Dobrick et al. (Hrsg.), *Research Ethics in the Digital Age*,
https://doi.org/10.1007/978-3-658-12909-5_15

1 Introduction

The Internet of Things (IoT) is expected to soon penetrate almost our entire everyday world. In order to handle this massive amount of data and to offer services on top, one promising solution (Henze et al., 2016) is the federation of IoT and cloud computing (CC). CC describes computing models in which users access, e.g., networks, servers or applications and services as ubiquitous, shared pools of scalable, rapidly provisioned IT resources (Mell & Grance, 2011).

Today, a significant share of everyday mobile device interactivity is realized via cloud technologies – especially considering the steady rise of global smartphone usage: Smartphones are extraordinarily dependent on CC infrastructures. Only those provide smartphones and respective applications (apps) with full functionality. Furthermore, cloud-based applications of mobile devices, like tablets and wearables, gain steady momentum in advanced/smart manufacturing settings (cf. chapter 2).

With that being said, it is of utmost importance to consider CC infrastructures, especially when considering that the (hidden) utilization of cloud services by mobile apps leads to severe privacy concerns, which is deeply rooted in information asymmetry (cf. chapter 3).

To overcome these concerns and allow users to properly assess the risks of cloud usage, ICT research strives to provide transparency over the cloud services utilized by apps on mobile devices (cf. chapter 4). By doing so, the research summarized in this contribution[2] aims to enable app users to make an informed decision on suitable means for a more sufficient, self-determined data protection for their use of apps and cloud services.

Against this background, light is shed on the difficulties between such ICT research and its ethical dimensions: in order to be considered as responsible and innovative research, it has to face the dichotomy of self-determination of the individual as opposed to ICTs "dual-use" characteristics through all-encompassing surveillance by its ubiquity/scalability and personalization/customization.

2 This significantly rewritten paper draws on the presentation *Intersecting the digital fabric. Implications of advanced manufacturing implementations in the German textile industry* by Daniel Kerpen presented at REDA summer school, TU Dresden, in September 2015.

2 Utilization of cloud services

Cloud computing is an important key infrastructure of digitalization (Krcmar, Reussner & Rumpe, 2014). Compared to in-house services, cloud services have a number of advantages: providers of cloud services and users both benefit from numerous advantages as CC services (i) can be used for free or at an affordable price, (ii) allow access to data from nearly everywhere, (iii) provide failure-safe and redundant storage of data, and (iv) obviate the need of operating own infrastructure. Most of these advantages are especially important when considering the limited resources in computing, storage, and power capacity of mobile devices (Henze, Kerpen et al., 2016). This leads to the emergence of novel services as well as to transferring traditional applications to the cloud – both in professional/organizational and private fields.

2.1 Professional industrial implementations of cloud services

Industrial production is characterized by different disruptive "revolutions" (cf. fig. 1). Currently, its fourth revolution is approaching under the label "Industry 4.0" (I4.0; Kagermann, Wahlster & Helbig, 2013).

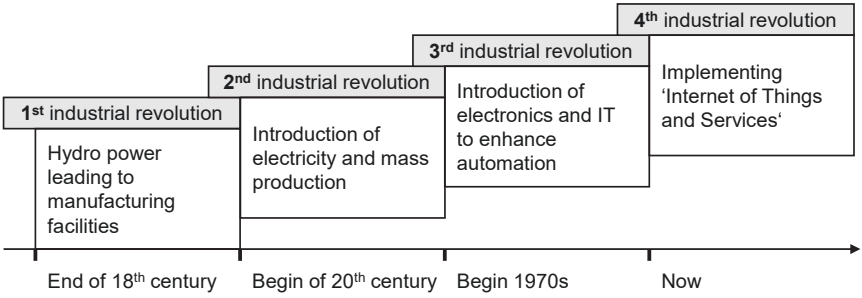

Fig. 1. Differentiation of industrial revolutions (Brecher, 2015)

I4.0 is a denominator for various concepts and technologies blending the physical with the virtual domain. Due to page restrictions, we subsequently focus on cyber-physical systems (CPS), smart mobile objects/devices, cloud services, and their implications for cyber security (cf. Fig. 2 for a high-level overview of the most common aspects).

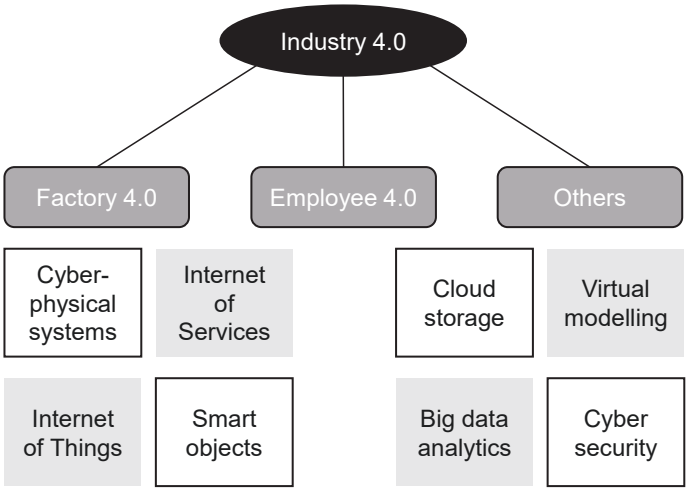

Fig. 2. Conceptual overview of I4.0 (Longé, 2015)

Technically speaking, I4.0 includes at least (i) the fusion of physical and virtual environments by CPS which integrate computational, physical, and social processes in human/nonhuman interaction networks (i.e., merging functionalities of software, sensors, and actuators) (Giese, Rumpe, Schätz & Sztipanovits, 2012; Lee, 2008), as well as (ii) the integration of such CPS in the Internet of Things (IoT) in which devices interact with each other through unique addressing schemes and increasingly refer to cloud-based computing/storage solutions (Atzori, Iera, & Morabit, 2010; Eggert et al. 2014).

As CPS influence the physical world, safety in sense of cyber security is highly jeopardized. For example, a (wireless) device-controlled robot in a smart factory could easily lead to serious material damage or physical harm to workers when compromised by an (external) attacker (cf. Fig. 3).

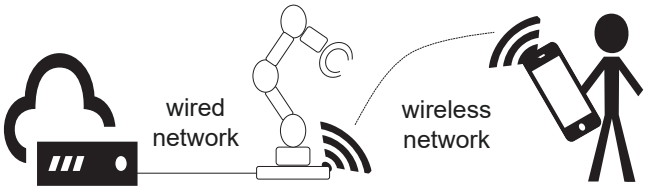

Fig. 3. Network scenario for trusted CPS (Henze, Hiller & Kerpen, 2016)

Thus, it is considered of utmost importance to center the design of CPS on safe cyber security, i.e., trustworthy cloud-based communication scenarios. Nonetheless, safety/security/privacy aspects also play an important role in private, personal implementations of cloud services.

2.2 Personal implementations of cloud services

Furthermore, cloud computing leads to the emergence of novel services in private fields, too. We briefly discuss exemplary application areas from the contexts of assisted living and interactive public mobility (Henze et al., 2016): In assisted living applications, people, such as the elderly, are considered to be supported by room/building automation and security systems along with monitoring vital signs through a number of unobtrusive sensors in the buildings. These sensors deliver information to the cloud, offering fast access to, for instance, family members and third parties like health care providers, medical personnel, and technical staff.

In interactive mobility assistance, services are envisioned which take a proactive role as personalized companions by providing seamless mobility chains, e.g., again for aged users. Such services enable people with limited mobility traveling independently by combining technical assistance systems (e.g., via smartphones and smart glasses) and public transportation: The entire route is covered from the starting point to the destination, including not only the public transport services (timetables of buses, trams, taxi services etc.) but adding additional service value by including information on the local and regional conditions of the route because existing barriers (stairs, etc.) might be recorded and cataloged with their position data.

To summarize, systems that utilize cloud-based services are already in deployment. Nevertheless, these advantages are dearly bought with giving up privacy to a large extent, often even unnoticeable.

3 Privacy concerns regarding cloud services

For limitation purposes, we discuss privacy concerns of cloud services by drawing on the example of cloud-based smartphone apps (Henze, Kerpen et al., 2016). Cloudsourcing data storage and processing raises severe privacy concerns, especially if it is unnoticeable for the user, as this is the case for cloud usage by mobile apps.

Although smartphone users decide which apps to use on their devices, they neither have knowledge, let alone control, over the use of cloud services by these apps. Even if (experienced) users are aware of the cloud usage of an app

in general, they still do not know who exactly can access their data. This is especially due to cloud providers' usage of own and third-party infrastructure that hides who (companies and foreign government agencies) has access to data in the cloud.

Since cloud providers are often located outside the users'own legislation, contracts and other legislative measures might only have a very limited reach of binding applicability (De Filippi & McCarthy, 2012). Such fundamental privacy issues have been demonstrated by the disclosures about the United States National Security Agency (NSA) and its international partners' global surveillance programs.

Research on mobile privacy refers to this as a problem of information asymmetry. Information asymmetry describes the increased power imbalance between smartphone users, service providers, and the application developers. Here, users have only few means of safeguarding their privacy realm and either are unaware of data collection performed by mobile apps or, in case of awareness, resign by caving in and simply accepting data collection (Shklovski, Mainwaring, Skúladóttir, & Borgthorsson, 2014; Martin & Shilton, 2016).

Furthermore, in enterprise settings, cloud usage raises further challenges, especially for corporate security. On one hand, employees appreciate the usage of a single device for both corporate and private use ("bring your own device", BYOD). On the other hand, uninformed cloud usage (even if in the context of personal use) can inadvertently leak corporate secrets to untrusted third parties outside of the company's control sphere.

4 The ethics of transparent cloud service information

Having discussed the widespread utilization of cloud services and their inherent problems, we consider privacy and informational self-determination in the aforementioned ICT-enabled services as an important issue on (trans-)national scales. For instance, the European Commission declares "secure societies" as a transnational "societal challenge" which aims to "protect freedom and security of Europe and its citizens" (European Commission, 2017). When regarding the national (German) scale, it is a fundamental statement since the 1983 population census decision of the German Federal Court of Justice, that protecting personal data is essential for individual informational self-determination: by stressing this point, research argues (e.g., by referring to Luhmannian-inspired systems theory) that the role of privacy is to protect the consistency of the individual. While consistent self-expressions rely heavily on the separation of societal sub-systems, privacy and informational self-determination would guard these lines of separation, as they would prevent the proliferation of sensitive

information from one context (e.g., the working world, family life, etc.) into other ones (Hornung & Schnabel, 2009).

4.1 Improving transparent information on individual cloud service usage

Hence, we have to shift attention to the assessment of individual risks by transparent information on cloud service usage patterns. One current approach allows users to assess their individual privacy risks and uncovers the need for sufficient self data protection (Henze, Kerpen et al., 2016).

Technically speaking, the designed system analyzes network traffic of a user's device to derive an individual statistic for each app over the utilized cloud services. Based on this information, it can inform the user if her private data is being sent to countries with weaker privacy legislation.

With access to such information, however, a (technically lay-)person might still wonder to what extent their own usage behavior is dangerous (or not). Hence, the system enables users to compare their own cloud usage profile anonymously with the profiles of other, "similar" users. To this end, it groups users based on lifestyle and socio-demographic background and derives a representative cloud usage pattern for each group. By doing so, it offers users to compare themselves to different comparison groups and hence allow them to better assess their individual cloud usage as a basis for taking a contextually informed decision (Martin & Shilton, 2016) on their future usage of cloud services ("comparison-based privacy").

4.2 Practicing Responsible Research & Innovation

REDA Summer School stimulated impulses to critically review one's own work. For instance, we have to be aware of the possibility that our (technical) system conceptualization incorporates some dual-use characteristics, i.e. the un-/intended utilization of a formerly "emancipatory" tool for surveillance. But we consider this not to be a solitary characteristic of our research, but an inherent problem of today's interconnected (social) media and mobile devices. Nonetheless, this calls for conducting research that goes beyond mere check-listing of ethical, legal, and social implications (ELSI).

In this text, discussion is limited to the concept of Responsible Research & Innovation (RRI): first, RRI implies an inclusive and participatory research and innovation process. Therefore, it brings stakeholders' interests as well as social values and norms in accordance with the research process, its methods, and its results.

Second and at the core of the concept, RRI further reformulates the idea of responsibility for innovation. It is argued that the responsibility of citizens for

shaping the future needs to be more closely examined. In this view, as von Schomberg (2013) states, RRI is "a transparent, interactive process by which societal actors and innovators become mutually responsive to each other with a view to the (ethical) acceptability, sustainability and societal desirability of the innovation process and its marketable products (in order to allow a proper embedding of scientific and technological advances in our society)." Accordingly, we conceptualize our work as a collaborative practice between computer scientists and social scientists, and as much as possible, based on contextual awareness and integrity (Martin & Shilton, 2016).

5 Conclusion

We consider the research presented here to be somewhat paradigmatic for a ICT-related potential threat to informational self-determination by processing data in incomprehensible manner. Tackling this informational asymmetry is a delicate endeavor that calls for conducting self-reflective research by adhering to RRI criteria. In our view, this might be the possibility not only to get developers to implement privacy-by-design concepts but to enable stakeholders to think about the consequences right at the beginning of the innovation process, and to empower users with applications that allow for adopting ICT and shaping them according to their own needs and privacy standards. We believe such applications can ensure both innovation process and data protection while curtailing the risks of civil resignation. Or, as the Rome Declaration (2014) states: "The benefits of Responsible Research and Innovation go beyond alignment with society: (...) it builds trust between citizens, and public and private institutions in supporting research and innovation; and it reassures society about embracing innovative products and services; it assesses the risks and the way these risks should be managed."

Acknowledgments

We received funding from the German Federal Ministry of Education and Research (BMBF) under reference numbers 16KIS0352 and 16SV7113. Additional funding was provided by the Excellence Initiative of the German federal and state governments within HumTec Project House at RWTH Aachen University. Feedback from colleagues and support by student research assistants from research groups TRINICS, SozioTex, and IPACS is gratefully acknowledged.

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Research Ethics in the Doctoral Project "Boundary Management in Social Media Communication"

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Keywords: Social media, boundary management, research ethics

Abstract

The authors doctoral project focus on the private and personal social media communication of employees and how it is affecting economic interests of their employers. The research on private and personal content is limited by ethical concerns, such as accessing private social media profiles for the observation of communication behavior or introducing instruments to control or manipulate private affairs of employees to achieve economic benefits. This paper explains the ethical doubts and presents possibilities to respect moral standards in conducting research on social media communication.

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https://doi.org/10.1007/978-3-658-12909-5_16

1 Motivation

In the modern era of social media, the contexts of communication often get mixed. On one hand, there is a spectrum ranging from private to public communication, and on the other hand, there exists a spectrum ranging from personal to professional affairs (cf. Jameson, 2014). Information that has been private before becomes public. In the same way information that is meant to be personal enters professional affairs and vice versa. Companies often benefit from private social media communication in cases where the employees show relevant competencies or spread their satisfaction with the company or its products and services (cf. f. e. Pleil & Zerfaß, 2007). On the other hand, the image of the company can be damaged when employees behave in a conflicting way (like an animal welfare advocate posting a picture of himself enjoying an elephant hunt) or the enterprise is made liable for private postings with professional content (like a car-seller whose employee posted a marketing campaign in his private Facebook account). Thus, personal social media use of employees is more often affecting business processes in both a positive and a prospectively damaging way. Consequently, that is why enterprises are interested in personal communication affairs of their employees.

Many enterprises use so-called "social media guidelines" to ensure that employees use social media in a way that will not damage the enterprises image. It is no easy task to find a balance between encouraging the employees to write about their work while simultaneously giving them advice about inappropriate social media behavior. It is not sure if employees can apply those guidelines in their daily communication and if they are conscious of the effects of their postings on the enterprise affairs.

2 Theoretical Background

The distinction between private and public, as well as personal and professional, information often is described in a metaphor of boundaries. Regarding the boundary of private and public information, the theory of communication privacy management describes a rule-based management system of personal and collective boundaries and privacy rules for self-disclosure (cf. Petronio, 2002). To explain the boundary between personal and professional communication, Papacharissi (2013) uses the theatre analogy of Goffman (1959) and adopts it to communicative acts in social media (cf. Jameson, 2014). Both descriptions of boundary management have to take into account that social media platforms are changing the concept of audiences and the public sphere. There is not just one

audience, but there are both networked publics and personal publics (cf. Boyd, 2010; Schmidt, 2011).

The research of this doctoral project focuses on the methods enterprises introduce to affect boundary management in social media communication of their employees. The following research questions guide the doctoral project:

- How do enterprises affect the boundary management of their employees?
- Which rules for boundary management do enterprises express?
- Which rules for boundary management do employees apply?
- How can those rules be effectively brought into practice?

3 Ethical Concerns

Analyzing personal and private social media contents, in the context of business affairs, alludes to the following ethical questions:

- How can the research project outweigh economic interests on behalf of the enterprises (establishing a positive reputation and preventing financial damage) and privacy rights on behalf of the employees (freedom of opinion and self-expression)?
- Can private communication behavior in social media be observed (in both an ethical and a practical sense)?
- If private communication behavior cannot be observed, does the intervention caused by the research project influence social media competencies of the employees?

Those aforementioned ethical doubts restricted the choice of the research question, the object of investigation, as well as the investigation methods.

This project focuses on social media guidelines as instruments of qualification instead of control. One goal of the instrument is to have employees reflect on the effects of their communication; this is part of promoting competencies. The research project will analyze the tenor of the social media guidelines and determine if they focus on advice or regulation. It will be a hypothesis that social media guidelines formulated as advice evoke more reflection on behalf of the employees than those guidelines that are forcing control or regulation.

To avoid the observation of private content, there are two possibilities: The first would be to focus on behavioral dispositions instead of social media contents. In a quasi-experimental setting, the participants are asked to write posts about a specific aspect of their work. According to the theory of planned behavior and the communication privacy management theory (Petronio, 2002; Yao,

2011), those behavioral dispositions can explain future behavior and are thus suitable to describe competencies.

Another possibility would be to analyze the content of social media profiles that have been published in the past - a way that enables participants to control the content they provide in a research context. This might be a strategy to deal with the third ethical question.

In the development of the doctoral project, it will be decided which strategy will be more appropriate to fit the research goal.

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Reflecting on Ethics in the Investigation of Online Communication during Emergencies

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Keywords: Ethics, Social Media Research, RESCUE project

Abstract

The use of social media to communicate in cases of emergencies has gained more and more importance in recent years. Studying such web and social media data is not only a methodological challenge, but ethical questions also arise. In this article we describe some of those ethical issues and our reflections with a focus on dissemination of results based on the RESCUE project.

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F.M. Dobrick et al. (Hrsg.), *Research Ethics in the Digital Age*,
https://doi.org/10.1007/978-3-658-12909-5_17

1 Ethical and methodological considerations

Communication before, during and after any kind of emergency is crucial in crisis management. However, it is continuously becoming both a challenge and a chance for traditional actors, such as journalists and first responders, to cope with the (communication) situation when it comes to social media usage.

A mismatch exists between dominant emergency communication strategies employed by authorities and news organizations during crises and the increasingly important role that citizens play in emergencies by using social media to inform themselves and communicate about the situation in different phases of the crises (Sutton, Palen & Shklovski, 2008).

In this article, we describe how we are dealing with different kinds of online communication traces when investigating communication during emergencies and what issues arise in ethical decision-making. It is based on the ongoing European research project RESCUE (= Researching Social Media and Collaborative Software Use in Emergency Situations). We are developing new knowledge-based models of emergency communication and information flows based on empirical investigations of the use and impact of social media in three different emergency cases: 1) The terrorist attacks in Norway 2011, 2) the flooding in Central Europe 2013 and 3) Ebola and pandemic flu preparedness.

The next sections describe ethical issues related to the whole project and exemplarily concentrates on parts related to the flood case.

As a transnational research project, we have to adhere to various rules and regulations on different levels when collecting and analyzing data. Because a Norwegian body funds it, we must stick to certain standards, such as those of the Norwegian National Committee for Research Ethics in the Social Sciences and the Humanities (NESH) and the National Committee for Research Ethics in Science and Technology (NENT). Furthermore, in the three case studies, we have to follow (contradictory) national guidelines of the different partners based in Norway, Austria, UK and Finland for the corresponding cases and the lab study. In addition, we have to consider diverging institutional guidelines of the partners and secure permission from necessary review boards (if existing).

Not only for these cases but also for each of the data types, we follow different ethical guidelines to guarantee protection of privacy and damage prevention of participants (Heise & Schmidt, 2014; Neuhaus & Webmoor, 2012; Strohm Kitchener & Kitchener, 2009).

When studying and assessing various types of (social) media use, we have been applying different methods like content analysis, discourse analysis, social network analysis and narrative analysis. In addition, we have been conducting laboratory studies for the tool development in another work package.

We have been, for example, investigating the flood case by employing a multi-method approach that involves the collection and analysis of data from in-depth interviews, social media, niche media (such as forums) and traditional online media.

In the first phase of this project, we have been interviewing key communicators across cases on how they understand and evaluate the opportunities and challenges of using social media in risk and crisis situations. Here, we could follow well-established research ethics guidelines for qualitative interviews (e.g. Diener & Crandall, 1978).

The recruitment of interviewees as well as the gathering and analysis of interview data have been done in a situation-sensitive manner, and we aim to protect the privacy of our subjects and try to prevent future damage by anonymizing them, if necessary. We integrated the principle of informed consent and we have present results in a general way as required, not containing any information that may harm those studied, also within the laboratory studies for the tool development (see project's research protocols describing procedures for the case studies, work packages 2-4, and the laboratory study, work package 5 (https://blogg.hioa.no/rescue/).

When starting in-depth analyses of the three different cases by investigating (big) social media data and other online sources, further ethical questions arose. For example, to understand the information flow during the Central European floods 2013 in Austria, we have been analyzing heterogeneous data in order to get an overview of who the key communicators were and how information flowed between different communicators. For the first data collections and the exploratory analysis, we were able to aggregate public accessible web and social media data sticking to Austrian guidelines, where an ethics board is only required for medical studies, and institutional guidelines, which allow processing such data.

An important step across the cases was to trace and qualitatively analyze the communication of the most relevant communicators found in the data. Therefore, our research generally required approaches and solutions that are scientifically and ethically sound. Especially when there is a dialogue following a posting difficulties do arise. However, for social media communication traces and other user-generated content, few ethical guidelines exist that can be applied directly for our investigations. Thus, we have set basic procedures for the different items following our national and institutional guidelines.

Besides the development of the methodological agenda of the project in general and for the three cases and the tool development in specific, the common reflection of challenges and solutions in integrating ethical dimensions across all work packages has been an integral part of the project's progression.

The next sections exemplarily illustrate some of our considerations ensuing from dissemination activities.

2 Reflection on challenges with reference to dissemination

When disseminating relevant results, it requires additional ethical decisions. Empirical work has shown that particular social media items such as an important tweet needs a discussion to ensure the protection of privacy and damage prevention of involved key communicators studied, if necessary - depending on type of communicator and emergency case.

Another especially crucial aspect, informed consent, has been a challenging task. With regard to the ongoing transformations in the public sphere "one key issue is whether these [social media] posts should be viewed as public statements on par with statements in newspapers and edited media or as personal information" (Steen-Johnsen & Enjolras, 2015, p. 136). Therefore, the importance of the concept related to openly shared content has to be discussed in detail to address the ongoing transformation of the public sphere. In some of our cases, social media research was decided as ethically responsible without consent, but alternatives were discussed in case informed consent was not possible.

For all cases we adhere that accessible social media statements, particularly by individuals, are not public by default. Even if a statement is, or has been, openly shared, we have to make sure that personal information will be dealt with adequacy and with care. We also have to understand that probably not everybody considers his/her message as designed for the public or republishing. In addition, issues in relation to technical competencies to organize their communication, such as their rights and access management, remain (Lüders, 2015).

The features of respective platforms support the organization and structure of communication. In regard to Twitter, the use of hashtags could, therefore, act as a criterion in ethical decision-making for recognizing a statement as indented public (Larsson, 2015). Nevertheless, even if a statement has a hashtag, other aspects, like third party rights or display-requirements of the provider, remain (Steen-Johnsen & Enjolras, 2015).

The use of hashtags as a criterion for ethical decisions is important to consider with regard to the specific context. For emergencies, our work has shown that there are often simply no hashtags in (first) crisis tweets.

"The fact that people publish personal information online, and leave publicly available traces of sociability and self-performance does not mean that this content is «up for grabs» by social scientists without carefully considering the

privacy of the people being studied" (Lüders, 2015, p. 81). Even if those studied give their informed consent beforehand, they remain vulnerable by privacy issues in case of publishing or disseminating results. Online communication traces can become easier to track back due to online searches in relation to quantity and originality of the source published.

The Code of Ethics of the Association of Internet Researchers (AoIR) acted as an important reference point. In this framework (Markham & Buchanan, 2012) researchers should...

- consider the level of vulnerability of those studied
- orient one's research towards the specific context
- understand that digital information involves individual persons
- place emphasis on the rights of subjects
- be aware that issues may arise during all steps
- realize ethical decision-making as a deliberative process

In addition, scientific contributions such as *Internet Research Ethics* (Fossheim & Ingierd, 2015), which also takes up the above-mentioned, are an important guiding principle for potential solutions.

3 Conclusion and closing remarks

We have continually developed our own decision procedures related to the approaches above, in order to establish transparency and give others the possibility to understand the various stages of our research.

Our project involves people with varying degrees of vulnerability and different reasons for protecting them. They certainly depend on our three cases and the role or key communicators (including also members of the public or youngsters). In the case study of flooding, we did not focus on individual citizens but the dialogical nature of social media remains problematic. However, it is further necessary to consider that additional professional communicators, such as press officers, might be affected on a personal level. Furthermore, the awareness concerning openly shared content depends on an exceptional situation: the crisis context.

Thus, our norms adhere to general decisions in the project. Firstly, it is important to follow an iterative process of ethical decision-making. Secondly, it is relevant to combine one's own ethical practices with recommendations from other disciplines. Moreover, it is beneficial to adduce current research results and literature to counter a lack of guidelines and procedures. Finally, it is cru-

cial to develop a self-reflexive research practice in one's project team, make it transparent and find alternatives in accordance with ethical questions.

The use of social media and online media in crisis communication whilst a transformation of the public sphere occurs is not only a challenge for communicators involved in the incident but also raises a lot of ethical issues in research. One solution about dissemination is to make use of visualizations if ethical concerns remain when publishing results, even if the social media source is, or has been, publicly accessible. Showing the role of a specific voice in the information flow of the crisis communication with the help of a network visualization, such as the first statement related to the event or the most popular one, is probably more responsible than an anonymous citation in certain cases.

In conclusion, we suggest always considering the special context of the situation and the actors involved when investigating online communication during emergencies to be ethically responsible.

Acknowledgements

RESCUE – "Researching Social Media and Collaborative Software Use in Emergency Situations" is funded by the Norwegian Research Council, Societal Security program (SAMRISK II). https://blogg.hioa.no/rescue/

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