Andreas Hepp*, Susan Alpen and Piet Simon

Beyond empowerment, experimentation and reasoning: The public discourse around the Quantified Self movement

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Abstract: This article presents the results of a discourse analysis of press coverage on the Quantified Self (QS) movement in the German and British (online) press between 2007 and 2018. The analysis is driven by two questions: What discursive patterns can be discerned within this coverage? And, what characterizes the translation of the experimental practices and imaginaries of this pioneer community into an overall societal reflection of deep mediatization? In essence, the article shows that the QS movement becomes a ‘general signifier’ for a dystopian view of deep mediatization. So, while the QS movement itself understands its practices and community as self-empowering, self-reasoning, and experimental, the constructions of the QS movement in public discourse suggest the opposite. Paradoxically, however, another basic imaginary of the pioneer community is adopted and confirmed, namely that of the (simple) mutability of society as a consequence of digital media technologies.

Keywords: Quantified Self movement, pioneer communities, deep mediatization, media discourse, self-measurement

1 Introduction

Deep mediatization – a stage of mediatization in which digital media and infrastructures have become constitutive for society (Hepp 2020) – does not simply emerge because “disruptive technologies” are invented, refined, and sold by corporations and eventually appropriated into everyday practices. This kind of perspective assumes a level of efficacy that is far too one-dimensional to fully

***Corresponding author: Andreas Hepp**, ZeMKI, Centre for Media, Communication & Information Research, University of Bremen, Germany, E-Mail: andreas.hepp@uni-bremen.de, <https://orcid.org/0000-0001-7292-4147>.

Susan Alpen, ZeMKI, Centre for Media, Communication & Information Research, University of Bremen, Germany, E-Mail: alpen@uni-bremen.de, <https://orcid.org/0000-0002-1359-8772>.

Piet Simon, ZeMKI, Centre for Media, Communication & Information Research, University of Bremen, Germany, E-Mail: pisimon@gmx.de.

capture the complexities of media-related change. In fact, we are dealing with a multi-layered transformation which involves different individual and supra-individual actors (Berker, Hartmann, Punie, and Ward, 2006; Bijker and Law, 1992; Dolata and Schrape, 2018). One characteristic of deep mediatization is that these actors' practices are "entangled" (Scott and Orlikowski, 2014, p. 873) with media technologies and digital infrastructures. Transformation then emerges as "deeply recursive" (Couldry and Hepp 2017, p. 216), which means that on various, partly contradictory levels the imagination and production of new technologies refers back to the everyday practices of these actors which, within closed loops, become materialized in technology.

One distinct group of actors within this transformation consists of "pioneer communities" (Hepp 2016, p. 918) that act as "intermediaries" (Bourdieu, 2010, p. 360) between technological development, research, journalism, business, politics, civil society, and everyday use. Examples of these pioneer communities include the Hacks/Hackers movement, whose interests lie in innovative journalistic practices, the Maker movement, a community pushing the boundaries of practice in manufacturing, and the Quantified Self (QS) movement, which engages in practices of tracking and self-improvement (Hepp 2020b). Media-related pioneer communities adopt a 'forerunner' role in their respective fields, which is then solidified in experimental media practices; they have an "organizational elite" (Hitzler and Niederbacher, 2010, p. 22) that curates the community's networking; and they share "socio-technical imaginaries" (Jasanoff and Kim, 2015) of possible (media-)futures. In terms of the recursive transformation of society, pioneer communities are the groups that explore spaces of possibility.

The QS movement adopts a forerunner role in the visions and the manifestations of self-change through new practices of media-technology-based self-measurement. The reason we focus in this article on this particular pioneer community is because of the ambivalent position it maintains when it comes to questions of deep mediatization: On the one hand, its intimate coupling of media technologies with the body as well as the processes of data collection it engages in are an obvious expression of everyday deep mediatization. On the other hand, this movement is continuously criticized in public discourse.

Most of the research that exists on the QS movement deals with individual practices of self-measurement, assumptions about the transformation of society through the spread of these practices and their increasing entanglement with so-called 'big data' processing. Often, no distinction is made between the pioneer community as outlined above and everyday practices of self-measurement. In light of the absence of this distinction, this article provides a threefold contribution to the discussion on pioneer communities, the QS movement, and deep mediatization:

1. It shows that only with a clear analytical distinction between the QS movement and more common self-measurement practices is it possible to make statements about the role which pioneer communities play in processes of deep mediatization.
2. The article demonstrates that the influence the QS movement has on processes of transformation results, to a significant extent, from public reporting on it through which its experimental practices and imaginaries gain public attention.
3. Finally, we show that the construction of the QS movement in public discourse differs from its self-perception. We are dealing with complex processes of “translation” (Callon, 1986, p. 196) that culminate in the paradox of having its assumptions confirmed while at the same time being rejected: While self-quantification is problematized, the community makes bold assumptions about society’s malleability through technology.

For clarification, we will investigate the public discourse on the QS movement beyond specialist tech journals, websites, and blogs in Germany and the UK for the period 2007 to 2018. We selected material from these two countries because, on the one hand, an active QS community has developed in each territory and has received remarkable media attention. On the other hand, however, the German population tends to be much more skeptical of (surveillance) technologies than the British. It can be assumed, therefore, that the comparison of the discourse in both countries will allow us to make statements about the spectrum of the communicative construction of this particular pioneer community.

Our research is guided by the following two key questions: What discursive patterns can be discerned within the coverage of the QS movement in the UK and Germany (RQ1)? And, what characterizes the translation of the experimental practices and imaginaries of this pioneer community into an overall societal reflection on a deeply mediatized society (RQ2)? To answer these questions, we conducted a discourse analysis of data gathered from both countries’ most popular national newspapers and weeklies (including their online editions). This choice is based on the assumptions that reporting in these newspapers serves as a good indicator of the wider public discourse.

2 The Quantified Self movement as a pioneer community

In recent years, there has been relative growth in research into the QS movement,¹ particularly with regard to individual practices of self-measurement.² What is currently included in the concept of ‘self-tracking’ was initially called ‘life-logging’.³ The practice of self-tracking originated primarily in artistic and self-experimental reflections on the interdependence of humans and technology and in the productive shaping of one’s own practical life. As mentioned above, the term ‘quantified self’ refers to a more specific and clearly delineated community (Neff and Nafus, 2016, p. 18): In response to a meeting of around fifty people with a shared interest in this area in 2007, the two *Wired* journalists Gary Wolf and Kevin Kelly launched quantifiedself.com. The aim of the website was to both connect producers and users of self-measurement technologies and to organize meetups and conferences to discuss the potential of self-measurement and users’ various practical experiences with the technology. Local groups are organized, in particular, as meetups (meetup.com). These groups connect with one another through the QS movement’s (online) publications, which curate the discourse on the community’s identity. Since 2011, the QS movement has been spreading throughout Europe and moving steadily in the direction of the health industry (Fiore-Gartland and Neff, 2015; Nafus, 2016; Selke, 2016). At the same time, a range of companies emerged which seek to develop, produce, and market the tools for health-related self-tracking, and larger corporations, such as Apple, have entered the wearables market.

As already emphasized, the QS movement can be understood as a pioneer community whose members share an interest in (media) technologies related to practices of the self. Their visions of social transformation center on changing society through means of a self that is empowered by data. This understanding of the self is committed to a “new individualism” (Lupton, 2016, p. 183), rendering apparent one particular contradiction: On the one hand, the QS movement is oriented towards the individual. Unlike almost any other formulation, the theorem of “n of 1” (Greenfield, 2016, p. 123) is representative of this nascent individualism: that is, the idea of collecting large amounts of data on one person whose goal is to change or improve his or her life. On the other hand, we must remain

¹ For an overview, see Lupton, 2016; Neff and Nafus, 2016.

² See Abend and Fuchs, 2016; Ajana, 2017; Choe, Lee, Lee, and Pratt, 2014; Didžiokaitė, Saukko, and Greiffenhagen, 2018; Fotopoulou, 2018; Gerhard and Hepp, 2018; Humphreys, 2018; Sharon and Zandbergen, 2016; Strübing, Passoth, Gugutzer, and Duttweiler, 2016.

³ See Crawford, Lingel, and Karppi, 2015; O’Hara, Tuffield, and Shadbolt, 2008.

aware of the fact that at the core of this pioneer community remains the idea that individual, technology-based self-measurement can influence or change the formation of collectivities (Kelly, 2016, pp. 237–267). To this end, the QS movement concerns not just the individual but also society as a whole. Yet, this movement is no longer confined to the San Francisco Bay Area, or even to the USA (Boesel, 2013; Neff and Nafus, 2016, pp. 1–36). Indeed since 2006, it has also established itself, comparatively quickly, in Europe and other regions of the world in complex processes of co-construction (Ajana, 2017; Fawcett, 2015).

Most research on QS and self-tracking fails to draw a clear distinction between the pioneer community – a group of people experiencing a shared ‘we’ and its permanent structures – and the general spread of self-measurement technology and culture. These divergent poles can be illustrated by two examples: Btihad Ajana (2017), in her overview of digital health and the biopolitics of QS, emphasizes the independent character of the community but then frequently jumps back and forth between general statements on self-measurement and the pioneer community so that the role of the latter remains unclear. In their analysis of self-tracking and the mind-body-environment, Sarah Pink and Vaike Fors (2017) make no analytical distinction between the community and self-measurement in general.

Yet the need for a clear analytical distinction has been demonstrated by research that was concerned with the QS community’s experimental practices. Tamar Sharon and Dorien Zandbergen (2016), for example, show that its members are “atypical in terms of the degree of reflexivity, intensity and discipline” they exhibit (p. 1697). Aristeia Fotopoulou (2018, pp. 152–154) highlights that members of the QS movement differ from the wider public in their understanding of data sharing. There is clear empirical evidence of differences between this particular pioneer community and self-tracking among the general population. It is only against these data that it is possible to ask what role the QS movement plays in processes of deep mediatization. One line of thought highlights the QS community’s engagement as an intermediary between technological development, research, journalism, business, politics, civil society and everyday use, as mentioned at the beginning of this article. A second line of thought suggests that this community is the subject of public reporting, which offers a particular representation of its experimental practices and imaginaries.

That said, the public discourse on the QS movement has been investigated much less rigorously. One of the few examples is a study by Ruckenstein and Pantzar, who did not focus on the general public but the technology magazine *Wired*. One principal finding in their analysis was that the ‘quantified self’ was used as an ‘ontological metaphor’ to ‘market’ the idea of what we call a tracked society. But again, the boundaries between the QS movement and a broader discourse about a deeply mediatized society remain somewhat unclear. While men-

tioning previous research in their literature review of the QS movement as a particular community (Ruckenstein and Pantzar, 2017, pp. 405–406), their subsequent analysis does not reflect further on *Wired's* status in its construction. Through an organizational elite built up by a (former) *Wired* editor Kevin Kelly and a (former) *Wired* writer Gary Wolf, the QS movement has maintained a close connection with the magazine from the beginning. Kelly and Wolf made use of a strategy established by the Whole Earth Network, a San Francisco Bay Area based network of people involved in various pioneer communities (Turner, 2006, pp. 207–236), not simply to report on existing communities but to construct and curate them through journalistic activities, accompanying conferences, and by organizing meetups (for the Maker Movement, see Hepp 2018). So, what Ruckenstein and Pantzar analyze is less a form of marketing than an *existing* community; they provide an insight into the processes of constructing and curating an *emerging* pioneer community.

Furthermore, this kind of tech journalism affects only a very small part of the public discourse about the pioneer community. Far broader discussions are led in more mainstream media outlets, where “practices and experiences of the QS community are often evoked when self-tracking is discussed” (Didžiokaitė et al., 2018, p. 1471). If a scientific engagement with this public discourse about the QS movement was to take place, this could come across as a critique lacking the basis of a systematic content or discourse analysis (e. g., Lupton, 2016, pp. 14–16). There is a gap in research that appropriately investigates general public discourse on the QS movement, especially in regard to the question of how its experimental practices are translated by this discourse and what significance this can have for discussions of mediatization.

3 Methodological approach

To examine the public discourse on the QS movement in Germany and the UK we have used a discourse analysis based on the sociology of knowledge (see Keller, 2013). This approach examines the social practices and processes of the communicative construction, stabilization and transformation of symbolic orders. In our case these are the symbolic orders of a deeply mediatized society as they are constructed on the basis of public reporting on the QS movement. The unique feature of this type of discourse analysis is that it not only focuses on media content, it is also able to integrate other forms of data such as those collected by media ethnographic research, for example. To these ends, this type of analysis adopts open, axial, and selective coding techniques as carried out in a Grounded Theory approach (Glaser and Strauss, 1999). The aim is to typify discursive patterns that

are characteristic of the respective discourses across various individual statements. To this end, this method essentially recommends following a step-by-step approach: First, the formation of the corpus based on the research questions, second, a detailed analysis of the data, and third, the typifying of overarching discourse patterns through a continuous comparison of the results.

For the definition of the corpus of data our two research questions provided orientation in so far as we searched for data which allowed us to reconstruct a discourse that is accessible to the general public (RQ1). The data had to be analyzed over a certain period if dynamics of translation were to be investigated (RQ2). Due to questions of accessibility, we decided to analyze printed and online newspapers. When selecting these publications, we made sure to cover a broad range of political orientations (see Table 1).⁴ The period set for our study was 2007 to 2018 for articles with explicit reference to the QS movement; this means that we were able to analyze material starting from the year in which the QS movement became an object of public interest. Based on our finding that there was an intense phase of reporting between 2012 and 2018, we decided to further analyze articles referring to practices and technologies of self-tracking and self-measurement to contextualize the reporting on the pioneer community.

Table 1: Data corpus.

Germany	Number of articles on QS/practices/ technologies	UK	Number of articles on QS/practices/ technologies
die tageszeitung	11/11/30	The Guardian (including The Observer)	37/22/600
Süddeutsche Zeitung/Süd-deutsche Zeitung Online	28/51/358	The Daily Telegraph	7/4/224
Die ZEIT/ZEIT Online	31/27/123	New Statesman	3/2/1
Die Frankfurter Allgemeine Zeitung	31/65/668	Financial Times	11/4/150
BILD Zeitung	0/1/220	The Sun	0/2/152
Der Spiegel/Spiegel Online	11/21/289	The Economist	3/3/32

⁴ The juxtaposition of the newspapers in the columns is not intended to suggest that they would correspond in political and social orientation in Germany and the UK. However, the tabular overview should make it clear that we tried to cover the spectrum as broadly as possible.

The articles were collected using the Factiva database.⁵ Based on the results of our own field research on the QS movement (e. g., Hepp 2020b) and existing research on the topic (see previous section), we proceeded in two methodological steps.

Our *first analytical step* addressed the definition of the data corpus and its quantitative analysis. Using the keyword ‘Quantified Self’ and its assorted variants (‘Quantified-Self’, ‘QS movement’, etc.), we searched for all articles in which the pioneer community is *explicitly* mentioned (2007–2018). In addition, we looked for all articles in which the surrounding practices and key technologies of the QS movement were addressed (2012–2018). To do this, we used the keywords ‘life-logging’ and ‘self-tracking’ (German: ‘*Selbstvermesser*’ and ‘*Selbstoptimierer*’) for the actual practices that members of the community engage in; and ‘wearables’, ‘fitness tracker’, and ‘smartwatch’ for the technologies they use. This twofold approach enabled us to capture both the explicit construction of the pioneer community in public discourse and the wider discursive context in which this takes place. In our subsequent analysis, we focused on temporal and thematic dynamics (RQ1). We were interested in the frequency in chronological sequence of how often the German and British (online) press reported on the QS movement during our chosen time period (Section 4).

Our *second analytical step* was a detailed discourse analysis based on the sociology of knowledge. The aim of this second step was to address our second research question (RQ2): What are the dynamics in the translation of the QS community’s experimental practices and imaginaries into an overall communicative construction of a deeply mediatized society?

⁵ Our research with the Factiva database was limited by restricted access to online articles from *die tageszeitung*, *The Daily Telegraph*, *New Statesman*, and *The Sun*. Online articles in the Factiva database that were accessible included: *Spiegel Online*, *Süddeutsche Zeitung Online*, *ZEIT Online*, and online articles of *BILD*, *The Guardian*, *The Observer*, *The Financial Times*, and *The Economist*. Articles by *Frankfurter Allgemeine Zeitung* and *faz.net* were retrieved from the newspapers’ archive service for libraries (Bibliotheksportal Frankfurter Allgemeine Zeitung).

Table 2: System of categories.

Pattern of discourse	Categories of description
I. Translating empowering self-measurement into defective self-tracking	<ul style="list-style-type: none">– evaluating practices– questioning expertise– ridiculing practices
II. Translating experimental technologies into everyday wearables	<ul style="list-style-type: none">– links to mass market– related to consumer apps and platforms– represented as a harbinger of the mass market
III. Translating a community of reasoning into an erosion of social solidarity	<ul style="list-style-type: none">– links to monetization– related to disunity

Informed by Grounded Theory, this was a continuous process of comparing all *explicit* mentions of the Quantified Self movement in our data with a focus on discursive patterns of its coverage. We condensed the first open concepts for describing these patterns into a total of three that best describe the presentation of the QS movement in public discourse (see Table 2). This is, first, the pattern of *translating empowering self-measurement into defective self-tracking*, which we typified on the basis of the categories of “negative evaluation”, “questioning of expertise”, and “ridiculing practices”. The second pattern classifies the *translation of experimental technologies into everyday wearables*, which we typified on the basis of the categories “links to mass market”, “related to consumer apps and platforms”, and “represented as a harbinger of the mass market”. The pattern *translating a community of reasoning into an erosion of social solidarity* we typified with the categories “links to monetization” and “related to disunity”. Across all articles in which the Quantified Self movement was mentioned explicitly, in both Germany and the UK, these three patterns were characteristic of the media coverage in the newspapers we investigated.

The results of this discourse analysis were then contrasted with the findings from our media ethnographic research on the QS movement (see Hepp 2016, 2018, 2020b). This is based on a total of forty-two interviews with various actors (in particular, of the American, British, and German organizational elite) and eight observations of events (such as the QS Conference in Amsterdam). Contrasting the results of our discourse analysis and our media ethnography revealed how mainstream discourse on the QS community was characterized by dystopic tropes in their portrayals of a deeply mediatized society (Section 5).

4 The QS movement as a ‘general signifier’: Temporal and thematic dynamics of the public discourse

In both countries, we detect a dynamic of concentrated press coverage, that is, we can identify a particular period in which coverage on the QS movement was most recurrent; this was between 2012 and 2016. During this phase, a variety of topics related to the movement are discussed. As we will show in the following, the QS movement – across all temporal and thematic dynamics – becomes a ‘general signifier’ for the spread of self-measurement through digital technologies as an expression of deep mediatization, both in Germany and the UK.

The term ‘general signifier’ is deliberately chosen to distinguish it from the terms ‘floating’ or ‘empty’ signifier. The latter stands for an expression that has no agreed meaning and shifts from one context to another (cf. Bennett, 1982). The role of the QS movement in public discourse is not an ‘empty signifier’ but a ‘general’ one: Across the articles we analyzed, the movement represents the risks inherent in and the potentially negative outcomes of self-measurement in a deeply mediatized society. References to the QS movement serve less to reconstruct the specificity of the community than to problematize an imagined form of society. This, however, remains a rather intellectual discourse detached from the concerns of most people: The tabloid press in both countries does not discuss the QS movement at all, even though it does report on the technologies associated with it.

Becoming a ‘general signifier’ of deep mediatization

During our period of investigation and across our sample, in Germany a total of 112 articles were published that focused explicitly on the QS movement. As shown in Figure 1, in 2012, the sum of articles on the QS movement rises abruptly in almost all newspapers when compared to 2011. During the intensive phase between 2012 and 2016, 97 articles alone were published on the community.

Figure 1: The QS movement in German coverage.

If we move away from a purely quantitative consideration and focus more directly on what the QS movement stands for as a ‘general signifier’, a spectrum of topics becomes clear: It is striking that most German articles on the QS movement discuss wearables such as fitness bracelets, which can measure body-related data. The QS movement becomes a ‘signifier’ for the ways in which these technologies spread through society and what values and standards are associated with them. This spread also relates back to the engagement of the QS movement: The event most frequently discussed in these articles is the QS movement’s largest conference in Europe, which is held in Amsterdam. Local meetups, which are organized in major German cities by QS pioneers, are also occasionally addressed. The former *Wired* journalist and now main representative of the QS organizational elite, Gary Wolf, is by far the most prominently featured pioneer. It also becomes evident that the discourse on a tracked society is more likely to take place in upper-middle class and leftist media outlets: With 31 contributions, *Frankfurter Allgemeine Zeitung* and *ZEIT/ZEIT Online* published the greatest number of articles that explicitly addressed the QS movement. Furthermore, the pioneer community is also prominent in *Süddeutsche Zeitung*. By contrast, the tabloid *BILD* stands out given that the QS movement is not mentioned in a single article.

Comparable patterns can also be found in the British coverage. During our period of analysis, a total of sixty-one articles refer explicitly to the QS movement. While the total coverage in British media comprises fewer articles than that in the German media, one can also detect a period of intensive reporting between 2012 and 2016 (see Figure 2).

Again, it is worth discussing what the QS movement as a ‘general signifier’ stands for in the UK. Here, the press coverage of the QS movement focuses primarily on different technologies. Many articles portray the QS movement as an obsessive circle of users of these technologies and, taking them as a starting point, the articles deal with concrete practices of life-logging and self-tracking. These pieces either consist of field reports by the authors or reports on (or interviews with) well-known pioneers. Just as in the German coverage, Gary Wolf is often mentioned as the founder of the QS movement, together with Kevin Kelly. And once again, it is noticeable that the reporting on the QS movement was most often a topic of rather left-wing oriented or broadsheet media outlets. While the tabloid *Sun* published no articles on the QS movement, most of the reporting appeared in the *Guardian* and its sister Sunday paper, the *Observer*.

Figure 2: The QS movement in British coverage.

Practices and technologies as a discursive context

In order to better understand how the QS movement works as a ‘general signifier’, it is necessary to deepen our analysis. To this end, we have taken a closer look at the practices and technologies associated with the QS community. Our entry begins again with certain keywords to represent current practices and technologies of the QS movement: ‘life-logging’ and ‘self-tracking’, ‘wearables’, ‘fitness tracker’ and ‘smartwatches’. Using these keywords, we conducted a contextualizing analysis of the selected articles which deal with the different aspects of the pioneer community for the period 2012–2018. To facilitate this analysis, we analyzed all articles that discussed practices and technologies relevant to the QS movement *without* explicitly referring to it.

Figure 3: Articles with exclusive references to practices and technologies compared to articles with references to the German QS movement.

If one compares the frequency distribution of articles on the QS movement to those on practices and technologies, only two observations are particularly striking: First, the temporal dynamic of the coverage of practices and technologies in both countries shows an increase in coverage from 2012 and a decrease by 2015, which resembles the temporal dynamic of coverage on the pioneer community (see Figures 3 and 4). Second, with a total of 2,847, the number of contributions that refer to technology is significantly higher than those about the QS movement, with a total of 173 reports. The first observation underlines the assumption that

the QS movement is closely connected to its respective practices and technologies and, therefore, that the coverage of them is positively related to the coverage of the community. The second observation shows that reports on technologies are more present than those on the movement itself within public discourse. This is because the practices and especially the technologies associated with them are discussed in other, more general terms, which go beyond the specific case of the movement as a whole. For instance, many articles discuss the noted technologies in the context of medicine, work, travel and transportation, fashion, data protection, and education. A greater number of articles, however, focus on new releases and announcements as well as on tests and comparisons of gadgets without addressing the QS movement at all. Although the number of reports on practices, a total of 213, are not much higher than those that specifically address the community, there is also more variety in topics that do not connect to the QS movement in the first place.

Figure 4: Articles with exclusive references to practices and technologies compared to articles with references to the UK QS movement.

Upon closer examination, further temporal and thematic dynamics are revealed: Coverage of technology reaches a peak in both Germany and the UK in 2015, coinciding with the release of the Apple Watch. This, in turn, parallels the intensification of the coverage on the pioneer community in the UK, which falls off in 2015. In Germany, the number of articles explicitly related to the QS movement

was already in decline by 2015. This confirms the aforementioned pattern that is present in the coverage on pioneer communities, given that the general coverage of technological innovations gives rise to an intensification of the coverage of a pioneer community.

In summary, articles on the practices of ‘life-logging’ and ‘self-tracking’ as well as on technologies such as ‘wearables’, ‘fitness trackers’, and ‘smartwatches’ tend to be rather neutral or at least less critical. In contrast, the QS movement as a ‘general signifier’ comes into play especially when the potentially problematic aspects of self-tracking are discussed, such as the dominance of ego-centric self-orientation and low social cohesion.

5 Translating the QS movement as a dystopia of a deeply mediatized society

Having observed the temporal and thematic dynamics within the public discourse on the QS movement, in this section we turn to our second research question: What characterizes the translation of the QS movement’s experimental practices and imaginaries into an overall societal reflection of a deeply mediatized society? We identify three basic discursive patterns in both the German and British press coverage (see Section 3): i) “defective self-tracking” for the description of QS self-tracking practices as flawed and inadequate; ii) “everyday use of wearables” for a description of Quantified Self members as extreme but a vanguard for everyday trackers; iii) “erosion of social solidarity” for the description of the consequences of QS-inspired self-tracking. These three patterns in the representation of the pioneer community contrast fundamentally with its self-perception as we were able to identify it in our media ethnography. According to the community’s self-perception, i) self-measurement is empowering, ii) the community uses pioneering technologies, and iii) it defines itself as what Gary Wolf called a “community of reasoning”, that is, a community that fosters its own reflective discourse on self-tracking and personal development. This translation cumulates into a representation of the quantified self as a negative aspect of a deeply mediatized society – in short: as a dystopia.

i) Translating empowering self-measurement into defective self-tracking

The QS movement understands self-measurement practices as empowering. As the formula of “n of 1” (Greenfield, 2016) quoted in the literature review makes clear, self-measurement is not a question of simply accumulating large amounts of data, it is more concerned with the collection of highly individualized data in order to maintain a better way of life. The QS movement has been oriented towards self-experimentation for improving one’s own life from square one, perhaps best exemplified by the participation of Seth Roberts – a former psychology professor at the University of Berkeley well known for his work on self-experimentation – in the first QS Meetup in Kevin Kelly’s home in 2008 in Pacifica (CA).

The QS movement’s self-perception of empowerment through self-measurement finds a space in the public discourse to some degree. Pioneers of the movement are said to use multiple technologies at the same time, or to alternate between them, while measuring themselves. They thus combine digital applications and measurement methods in an experimental manner so as to implement individual practices of datafied self-measurement that reflect their particular needs and personal interests. Florian Schumacher, self-professed activist for QS Germany, is quoted as saying that he not only measures his heartbeat and sleep patterns, but that he also uses a mobile device to measure his brain waves, records the keystrokes on his computer keyboard and has even commissioned a genetic analysis to discover more about himself and his body (*Süddeutsche Zeitung*, 26/08/2017). The QS movement is thus represented as not being limited to collecting and analyzing data on physical fitness. Rather, the self-measurers collect and correlate data which meticulously monitor not only the body’s movements but also social behavior from different parts of their lives.

While such articles offer some space for presenting the empowering self-perception of the QS movement, the scope of this position is typically limited by its framing as “defective self-tracking”. This happens mostly through negative evaluations, the questioning of expertise, and the ridicule of the movement’s practices.

An example for a *negative evaluation* can be noted in the description of Fabio Santos, the organizer of the QS Meetup in Rio de Janeiro, in the German daily *die tageszeitung*. Santos is presented as someone who measures his productivity, records his own positive and negative emotions, and quantifies friendships. While such practices are initially described neutrally, this is immediately followed by a negative assessment: documenting all his relationships, “he appears like a McKinsey consultant who decided to restructure himself” (*die tageszeitung*, 13/05/2013). This is discussed as an increase in efficiency by means of a targeted cutback in friendships. Some media outlets are even skeptical of the movement’s

motto, “knowledge through numbers”, while others associate the pioneer community with religious and narcissistic behavior. In contrast to the average wearables’ user, the ‘community’ made up of ‘disciples of data’ is susceptible to a technology fetish which assumes that self-optimization will lead to bliss (*Süddeutsche Zeitung*, 13/10/2012). The following quote is a perfect example of this view:

And what about adherents of the ‘quantified self’ movement, who use gadgets and apps to track not only their sleep but their every footstep, and so forth? It is easy to dismiss this as technologically enabled narcissism, but the authors offer a more sympathetic and troubling diagnosis: Perhaps such people have just ‘given up on their personal project, and have willingly handed over their bodies to the larger cause of productivity’. (*The Guardian*, 24/01/2015)

The second typical way of translating empowering self-measurement into defective self-tracking is by *questioning the expertise* of individual members of the pioneer community. In such cases, the QS movement is criticized on the basis that many of its proponents interpret their recorded data themselves without any specialist knowledge and, in this way, seek to free themselves from medical diagnoses and scientific knowledge. Typically, the potential risk of false self-diagnoses is discussed, specifically when measured data are correlated and misinterpreted without specialist knowledge (*The Daily Telegraph*, 24/08/2015). In extreme cases, the position is articulated that this might lead to a loss of one’s individual relationship to the self and to the body, particularly since one is constantly encouraged to improve one’s performance in quantitative terms (*die tag-eszeitung*, 21/01/2012). Ultimately, more intensive self-measurement could contribute to the extrinsic standardization of the self and less to its individual and qualitative development.

A third method that is typically used to undermine the movement is to *ridicule* its practices. An example can be found in the following quote from the *Guardian*:

This rampant (and often costly) data-monitoring has now spawned the ‘quantified self’ movement, where hackers obsessively inspect every detail of their lives. The trouble is that a lot of what’s on offer is deeply idiotic, with sites like Lifehacker awash with cod-scientific info like Why White Cups Give Your Coffee a More Intense Flavour; and health monitors like Nike’s Fuelband generating huge amounts of data with little guidance on how to use it. (*The Guardian*, 05/01/2015)

In all, through such negative evaluations, questioning of expertise and ridicule, the QS movement has been translated as defective and as a kind of quantitative fetishism. Public discourse on the QS movement’s self-perception, which is oriented towards empowerment, has shifted towards a representation of defective self-tracking: The practices of self-measurement are either evaluated as prob-

lematic excesses of a neoliberal, individualized society, questioned in relation to their scientific validity or ridiculed because of their extreme character. This opens up the space to generally present self-tracking as defective and to discuss problematic consequences such as false diagnoses.

ii) Translating experimental technologies into everyday wearables

As our field studies and previous research have shown, the technologies of the QS movement go beyond the simple use of the trackers available in the retail sector. If regular trackers are used, the pioneer community aims to use the data in a much more inclusive way, for example, by making it freely accessible through apps such as *QS Access*. At QS conferences, trackers, sensors, and software applications that are still in development are discussed and new products such as the Oura tracking ring are developed in the context of the pioneer community. Furthermore, various members of the QS movement experiment with new methods of data collection and analysis, and the transition to biohacking is made clear. However, in mainstream reporting of the QS movement this is translated into the everyday use of wearables.

This is achieved first of all by *establishing a link between the pioneer community and the mass market*: Contributions that mention the QS movement typically report on the steadily increasing mass market for wearables which are used for the digital recording and quantitative analysis of bodily data. The experimental becomes something mundane. Take the following quote from the *Daily Telegraph*:

Sensors are getting ever smaller and more accurate and just about everyone carries a powerful analytical computer in the form of a smartphone with them at all times. It's possible to become a better version of yourself just by assessing and acting on the data you collect. (*Daily Telegraph*, 27/09/2014)

Mass-produced trackers offer “real-time information on pace, heart rate, calories burnt, and distance travelled” (*The Daily Telegraph*, 27/09/2014). “Blood pressure measurement via smartphone” (*Frankfurter Allgemeine Zeitung*, 08/04/2016) is also possible.

Within the media discourse, this everyday use of quantifying wearables goes hand in hand with *relating the QS movement to consumer apps and platforms* through which the measured data can be shared with others for the sake of comparison and motivation. Some emphasize the extent to which this “incites the ambitions of these high performers” (*Spiegel Online*, 17/04/2014):

Sharing our data with others is a good way to put pressure on ourselves and commit to improvements, much like when we tell our friends and relatives we are going to stop smoking or drinking – people are generally more reluctant to disappoint others than themselves. (*The Guardian*, 17/07/2015)

In order to verify the trend toward self-measurement in everyday life, German coverage in particular draws on empirical studies conducted by pollsters and market research institutes as well as by the digital economy's inter-trade organizations which provide evidence for the dissemination of wearables.

Third, the QS movement is typically *represented as the harbinger of the mass market*. This kind of reporting covers additional scenarios for application in which users of wearables from the QS movement are stylized as enthusiastic pioneers in the mass marketing of innovative technologies and pursue considerably more comprehensive practices of self-measurement in everyday life (cf., for example, the article “Dear digital diary ...: From sleeping and eating to exercise and travel, technology now allows us to track and analyse every detail of our lives. But, asks Leo Hickman, how can it help us actually improve them?” in *The Guardian*, 13/08/2012). Journalistic coverage corroborates these stories with features, or passages that resemble features, which form part of more analytic articles as well as interviews with pioneers from the movement.

In sum, by linking the QS movement to technologies aimed at regular consumers, by relating it to consumer apps and platforms, and by representing it as a harbinger of the mass market, the experimental technologies of the QS movement are associated with the spread of wearables across society. In this construction, the pioneer community is represented as less ‘special’ and becomes more a part of the general dissemination of self-measurement technologies in a deeply mediated society.

iii) Translating a community of reasoning into an erosion of social solidarity

The QS movement sees itself as a community of ‘reasoning’, as Gary Wolf puts it in an interview we conducted with him in February 2017. From his point of view, the QS movement appropriates practices and technologies that are also widespread in scientific practice but conceptualizes them anew by placing both data and analysis in individually adjusted contexts. In this sense, the QS movement is a community of people who deal with such data and its analysis argumentatively in order to support each other in processes of self-empowerment and self-development. The QS movement also sees itself as critical of the mass evaluation of

such data especially when losing sight of the individual. However, in public discourse this understanding is translated into an erosion of social solidarity mainly in German media and less so in British reports.

This pattern of translation is first realized by *linking practices to monetization*. This construction tends to foreground the financial exploitation of sensitive personal data by IT-companies, employers, and health insurance providers while relegating individual emancipation and self-development to the background. Health insurance, in particular, serves as a key example in these portrayals. It is noted that there are already incentives offered by health insurance companies for financial bonuses and reduced rates for people who measure their physical data with the help of wearables and pass these data on to them (*Der Spiegel*, 05/12/2015). The journalistic discourse on this topic typically focuses on the notion that only physically fit and healthy people will benefit from these discounts and incentive-based programs. It is argued that this will lead to the unfair treatment of contributors who represent a higher financial risk to health insurers (*Süddeutsche Zeitung*, 24/11/2014).

Second, typical of this pattern of discourse is its *relation to disunity*. According to the dominant portrayal in the (online) newspapers we analyzed, any self-tracking that is directed toward commercial monetization will lead to an erosion of welfare principles which are primarily based on solidarity. The personalization of insurance protection, for example, will generate a scenario in which the causes of illness and insufficient physical activity will be regarded as the responsibility of the individual, while social factors will not be taken into consideration. Furthermore, datafied self-measurement practices could be utilized to discipline ‘lazy’ or unfit insurees and to sanction them if they fail to engage in a certain amount of physical activity:

Arguably, this authoritarian strand of behaviourist thinking is what morphed into the subtly reinforcing “choice architecture” of nudge politics, which seeks gently to compel citizens to do the right thing (eat healthy foods, sign up for pension plans) by altering the ways in which such alternatives are presented. (*New Statesman*, 18/08/2016)

Framed in this way, datafied self-optimization – as revealed by the dominant construction of media coverage – does not contribute to an individual’s emancipatory self-knowledge. Rather, if it were to become established within society, the reasoning of the QS movement could lead to precisely the opposite outcome:

This development is disastrous for our self-understanding as human beings. If you think the logic of self-optimization through to the end, to live increasingly means a relentlessly machine-like adjustment to the changing conditions of a competitive market. [...] if the algorithmic idea of human beings prevails, measurable differences will be emphasized, and this

will lead to forms of discrimination with an allegedly rational basis. (*Süddeutsche Zeitung*, 01/07/2017)

Comparable arguments are made in the British Guardian:

People often refer to the “quantified self” movement, where individuals track their own personal data. This could lead to the creation of “quantified” customers who are willing to share that data in return for some value exchange. Just consider car insurers lowering premiums for drivers who feed back data from their phones that proves they are safe drivers, or healthcare companies lowering costs to people who live a healthier lifestyle. (*The Guardian*, 19/03/2015)

In the course of this interpretation, QS pioneers are typically translated as vanguards for a deeply mediatized society in which the transparent measuring of the self could become a heteronomous norm to which individuals would have to abide in order to avoid discrimination. Within German media coverage, in particular, the QS movement’s practices of self-measurement are often associated with sci-fi dystopias of totalitarian societies. Juli Zeh, a German writer who is frequently cited in German contributions (for example, in the *Süddeutsche Zeitung* from 13/10/2012), is an important point of reference for this kind of critical reading. She is well-known for her book *Corpus Delicti*, which tells the tale of a dystopian future society in which human beings are severely punished for not complying with legal health-and-hygiene standards and for not painstakingly documenting these processes. The British coverage, in contrast, tends to refer to analytical critics, such as the author Steven Poole, when connecting concerns about data ownership and the growth of smart surveillance practices to the QS movement and datafied self-measurement (*New Statesman* from 13/05/2013). Nevertheless, the criticism of the QS movement through notions of solidarity or data protection issues in the British press is not as polemical as it is in German articles.

6 Conclusion: The paradox of self-confirmation and rejection

To summarize, our discourse analysis shows that the representation of the QS movement in public discourse differs significantly from its self-perception. In both Germany and the UK, there was continuous reporting on the movement during its hype phase. The discourse, in general, however, is a rather upmarket discourse in (online) newspapers that address the educated middle class. As part of this coverage the QS movement becomes a ‘general signifier’ for the negative social consequences of the spread of wearables and self-tracking, and many of the critical

statements we have established from existing research – such as how the QS movement maintains notions of neoliberal self-optimization and governance of the self (Lupton, 2014, p. 3), how it represents a problematic desire for control (Ajana, 2017, p. 5), or how it has a narrow understanding of solidarity (Sharon, 2017, p. 112) – are discussed in relation to the pioneer community. The QS movement's self-perception of empowering self-measurement, an experimental appropriation of technologies and a common, critical reasoning is translated into a dystopia of defective self-tracking, the mass distribution of wearables, and the erosion of social solidarity. German reporting is more negative than British reporting.

So, are we dealing here with a critical public discourse about the problematic tendencies of deep mediatization that runs parallel with critical media and communications research? At first glance, one is inclined to say that, at least in part, this is taking place. A second look, however, reveals that such an interpretation would be too short-sighted. Hence, independent of its construction of the pioneer community, the press coverage adopts an assumption that technologies can directly shape societies: The pioneer community is reported on when new technologies such as Fitbit wristbands or the Apple Watch are presented by their respective manufacturers as innovations – implicitly as the assumption is shared that such media technologies are to be discussed precisely *because* their dissemination has an 'impact' on society. The underlying assumption of the QS movement's self-perception implies that technology is credited with having the potential for affecting social change.

This is the paradox of constructing media-related transformation in public discourse: While, on the one hand, this *form of social change* is criticized, on the other, the fundamental assumption of society's malleability through technology goes unchallenged. Or, to put it another way, while the QS movement's particular visions of societal change are by and large rejected, the basic assumption that society can be transformed by technology is affirmed. In this way, this kind of public criticism reproduces the general promise espoused by pioneer communities: Society *can* be transformed by technology.

The paradox of the community's self-confirmation of its benign motivations against the wider discourse's rejection of them reveals the remarkable potential pioneer communities possess to influence public discourse. Or, to put it differently, the influence pioneer communities have on processes of recursive transformation does not just lie in the fact that they promote their specific experimental practices or that they engage in political consultancy through networking.⁶ A far

⁶ This is not to say that these two aspects are not contributory factors; on the contrary, they, indeed, are (Hepp 2020a, pp. 30-40; Turner, 2006).

more significant point of influence derives from the community's own visions of the potential of digital technologies to effect social change within public discourse. This belief in technology, which finds its roots in the 'Californian Ideology' (Barbrook and Cameron, 1996), might be much more problematic.

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