

Vital signs: Innovations in self-tracking health insurance and social change

Steffen Krüger, Niamh Ní Bhroin

Insurance companies are increasingly harnessing self-tracking data to innovate and create new health and life insurance schemes. These schemes are often hailed as social innovations, and a major growth opportunity for the industry. Clients are invited to track and measure their health behaviour, fitness habits and vital functions. The data produced is submitted directly to the insurer and used for risk assessment. Good health and behaviour are rewarded; while poor health and behaviour relegate the insured to a lower 'health status'. We undertake a discourse analysis of published materials relating to these innovations to identify the cultural and social changes they introduce. We review four categories of publications identified through a focused literature review. These include (a) marketing and PR material (n=41) (b) journalistic articles (n=37), (c) industry publications (n=14), and (d) academic articles (n=25). Based on our analysis, we argue that these innovations introduce a significant imbalance of power between insurance corpora-

tions and consumers. Insurance corporations can select their clients, intervene in their behaviour and determine their value. Furthermore, these innovations threaten to change and erode conceptions of solidarity and fairness that underpin collective insurance schemes.

Keywords

behavioural change; health insurance; media innovation; self-tracking; social change; wearables

INTRODUCTION

Since 2015, a growing number of health insurance companies are collaborating with producers of wearable technology (i.e. smart watches and fitness trackers) to develop self-tracking health and life insurance schemes (STHLIS). Pioneered in 2015 by the South African company Discovery, these schemes incentivise their users to track data relating to their activities (such as the number of steps taken daily,

or hours spent training), and submit this to their insurer for analysis (Kuchler, 2019). This allows insurers to more accurately calculate premium costs and increase profits.

These schemes are part of a growing Insurtech industry¹ and are hailed as social innovations. The social need they are understood to address is conceived against a background of ageing populations, rising health care costs and exhausted communal care systems (Finn, Schaudel, Schneider and Singhal, 2017). Stakeholders claim that they foster healthier societies and save costs. At the same time, they allow private insurers to improve the precision of their risk analysis, individualise pricing and develop increasingly personalised health insurance products (cf. Singhal, Finn, Schneider, Schaudel, Bruce and Dash, 2016). Consultancy firms advise that STHLIS offer vast growth opportunities for private insurers (Singhal et al, 2016).

While nascent at the time of our analysis, these schemes are being diffused globally (cf. Henkel, Heck and Göertz, 2018). They are currently most prominent in the USA. They are notably less prevalent in Europe, Africa and South America. STHLIS provided by the South African company Discovery are an important exception. Discovery’s Vitality programme is particularly prominent in South Africa and has entered markets in Europe, North America and the Asia-Pacific region. Discovery claims that it is the ‘world’s largest platform for behaviour change’, impacting 25.7 million lives globally (Discovery, 2018).

Table 1 provides an overview of the top ten insurance providers in the USA, and indicates whether they provide STHLIS.

By contrast to the USA, only one of the top ten health insurance providers in Europe (according to Statista, 2020b), provides STHLIS. A growing number of these deals are however available in the United Kingdom, Ireland, France and Germany. The top two insurance providers in the United Kingdom (Aviva and Axa) both provide STHLIS. Discovery has also launched its Vitality programme in the United Kingdom (Vitality UK, 2020).

The development of STHLIS and their introduction to the sociocultural mainstream represent a phase of innovation where ‘existing knowledge (is) implemented in new contexts’ (Storsul and Krums-

Table 1: Largest Insurance Companies in US (by market share) and STHLIS.

Company	Market share³	Membership⁴	STHLIS^{5,6}
United Health Care	14.1%	48.9 million	Multiple wearables
Anthem	9.2%	40.9 million	Multiple wearables
Humana	7.8%	16.6 million	Fitbit ⁷
HCSC	5.3%	15 million	Multiple wearables
Centene	4.9%	22 million	Fitbit
CVS Health (Aetna)	3%	22.1 million	Apple
WellCare	2.8%	6.3 million	Fitbit
Kaiser Permanente	2.7%	12.2 million	No
Guidewell	2.5%	4.2 million	No
Molina	2.3%	3.5 million	No

vik, 2013, p. 14). These schemes could be considered social innovations that are based on datafication (cf. van Dijck 2015; van Dijck, Poell and de Waal, 2018). The data generated from wearable devices is harnessed by insurance companies to calculate and establish individual risk.

You start your Vitality journey at Blue Vitality status. Every time you do healthy activities, like going for a health check, buying healthy food and getting physically active, you can earn Vitality points and increase your Vitality status (Discovery, 2019).

Clients whose data indicates relatively low risk (i.e. healthy behaviour and overall fitness), are rewarded with vouchers for products and services from the insurance corporation or their commercial partners, and/or with discounts on their insurance fees. Clients whose data indicates poor health behaviour are relegated to a lower status. These innovations are therefore set to favour less risky or costly customers. As previous research has consistently indicated a correlation between health behaviour and socio-economic status (cf. Pampel, Krueger and Denney, 2010), these innovations could enhance existing health and social inequalities.

Furthermore, the individualisation of risk could influence and erode conceptions of fairness and solidarity that are considered fundamental to the insurance of health, in particular in European societies (cf. Fieschi and Grabbe, 2019). McFall (2019) argues that the concept of solidarity is associated with the infrastructures and techniques of welfare provision. In welfare states insurance functions to distribute the burden of social responsibility across a community of members rather than attributing it to individuals. As McFall (2019) points out, a more privatised attribution of responsibility prevails in the USA. At the same time, the calculation of risk, even in more personalised attribution models, has historically been based on group rather than individual levels. STHLIS therefore represent an innovation in the calculation of insurance premiums as they connect the insurance of health to individual assessment.

Given the potential tension between the commercial and social objectives of these schemes, we critically analyse the discourse according to which they are presented and question the kind of social change they might introduce. We focus on four kinds of publications, namely (a) marketing; (b) journalism; (c) industry and trade; and, (d) academic publications. Our research questions are:

- How are STHLIS presented in (a) marketing, (b) journalism, (c) industry and trade, and (d)

academic publications? and

- How are STHLIS presented in these publications as social innovations?

In the next section we provide an overview of the most important stages in the development of digital self-tracking (based on the work of Krüger, 2019). This is followed by an outline of our method. Subsequently, we present and analyse our data and discuss the findings of our research.

THE DEVELOPMENT OF SELF-TRACKING AND WEARABLE TECHNOLOGY

Self-tracking, i.e. the monitoring of human activities and vital functions (such as steps taken, duration of exercise etc.) by digital sensors and tracking applications has been increasing in popularity since 2007, under the label of ‘the Quantified Self’ (Wolf, 2015). Despite attempts at creating momentum, particularly in the technology magazine *Wired* (Wolf, 2009), the phenomenon initially remained on the fringes of digital culture. It was mostly engineers, developers and tech enthusiasts that created and used experimental solutions to monitor and contain chronic health conditions, such as diabetes or cardiac diseases (Kim, Jalil and Ngo, 2019). Other uses included self-surveillance and the optimisation of routine tasks and habits.

In 2017, the International Data Corporation, a

market intelligence agency, conceded that the ‘utility and necessity’ of wearable devices for the mainstream market ‘has been questionable at best’ (Business Wire, 2017). Eventually, however, the problem that wearables could be considered to solve was found. Supported by the launches of Fitbit (2007) and Apple Watch (2015) in particular, in addition to other wearable products launched by Samsung (2013), Xiaomi (2014) and Huawei (2015), self-tracking devices have increasingly been presented as a meaningful addition to sports activities, thus enhancing a particular perception of fitness that is tightly bound to meticulous measuring and statistics (Gilmore, 2015).

The idea of digitally enhanced fitness did not stop there. By virtue of the data-tracking potential of the wearables’ sensors, it became clear that they could not only augment traditional fitness activities, i.e. jogging, cycling or swimming, but could also include other activities, such as the walk to and from the office, in the realm of physical performance. ‘(F)itness is not just about gym time. It’s all the time’ is a slogan from Fitbit, one of the major producers of wearable technologies (Fitbit, 2019).

While this expanded notion of fitness first and foremost meant approaching daily life from a fitness-conscious perspective, the generation of fitness data has come to suggest that fitness can be found in increasingly obscure activities and bodily functions.

Now, sleeping, breathing, body temperature, perspiration and heartrate are being turned into fitness performances and framed as physical challenges. This is because they can be measured and optimised. Thus, human existence is subjected to the logic of quantitative measurement.

Once the definition of fitness is extended to ever-expanding spheres of digitally traceable life, our attention necessarily turns towards its lack, i.e. ‘unfitness’, and thus to sickness. It is at this juncture that private health and life insurers enter the field with the promise of enhancing fitness at individual, corporate and social levels. Fitness is for example defined by the consultancy firm McKinsey as ‘every track- and measurable activity that keeps you from becoming sick and elongates your life’ (Finn et al, 2017). Mc Kinsey further submit that because many governments experience pressure to cut spending on healthcare, private insurance companies are in a position to support the management of health spending and outcomes (Finn et al, 2017). It is therefore important to explore the discourses according to which STHLIS are presented. In the next section we describe our method.

METHOD

We conducted a focused literature review to identify publications referring to STHLIS. Table Two indicates our search terms. Each wearable search term

Table 2: Key search terms and combinations

Wearable terms	Insurance terms
Apple Watch	Insurance company
Fitbit	Insurtech industry
Health wearables	Corporate wellness
	Corporate health

was combined with each insurance search term, i.e ‘fitbit’ AND ‘insurtech industry’.

We used these terms in relevant databases, including: Google Search and Google Scholar, Web of Science, Retriever and ‘Oria’, the digital library system of the University of Oslo, in February and March 2019. We found a total of 119 publications and included all of these in our analysis. These were categorised as (a) marketing publications (n=41); (b) journalistic articles (n=37); (c) industry and trade publications (n=14), and (d) academic articles (n=25). Our search results were limited to English-language publications. As the key stakeholders in this emerging industry are based in the USA, the United Kingdom and South Africa this does not unduly constrain the results of our search.

The marketing publications included the websites of insurance companies and wearable vendors, press releases relating to deals between these companies

and other related promotional material. The journalistic articles were published in newspapers and magazines of interest to the general public. The industry and trade publications included annual reports from insurance providers and publications from consultancy firms. The academic articles included both applied and critical research.

We adopted a discourse analytical orientation (following Foucault 1969 (1972), and Fairclough, 2010). We analysed the use of language in these publications as forms of social practice that build upon, sustain and/or change existing social (power) relations. As Norman Fairclough (2010) explained with reference to the language of new capitalism:

It is not enough to characterise the ‘new planetary vulgate’ as a list of words, a vocabulary; rather, texts and interactions need to be analysed to show how some of the effects that they identify are brought off, e.g., making the socio-economic transformations of new capitalism and the policies of governments to facilitate them seem inevitable; representing desires as facts; and representing the imaginaries of interested policies – the interested possible realities they project – as the way the world actually is (Fairclough 2010, p. 282).

Representing socio-economic changes as inevitable, desires as facts and imaginaries as actualities

are exactly the discursive mechanisms and strategies that we have found in our material. We have however not explicitly used Fairclough's terms of genre, discourse and style (Fairclough 2010, p. 381), but have rather relied on a form of symptomatic reading developed by Krüger (cf. Krüger 2017). This type of reading leans on psychosocial methodology, and in-depth hermeneutics. Both authors read and initially developed research memos relating to all 119 items. These were discussed at a series of analytical meetings where the central discourse within each genre of publication was identified and compared. In the next sections, we will present our material and discuss the findings of our analysis.

FINDINGS AND ANALYSIS

In this section we present our material under each of the categories identified in our literature review, namely (a) marketing publications (n=41); (b) journalistic articles (n=37); (c) industry and trade publications (n=14), and (d) academic articles (n=25). On the whole, these publications present STHLIS as empowering their users, and providing them with benefits and savings on healthcare costs. STHLIS are also presented as improving societal health and saving related costs, and thus as social innovations. The way in which this discourse is manifest and operates in each category of publication is presented under the

relevant headings below.

(a) Marketing Publications

The marketing publications (n=41) include the websites of the providers of STHLIS (n=9) and of wearable technologies (n=4); promotional material relating to STHLIS schemes (n=15), and public relations material (n=13). Whether they form part of corporate 'wellness programmes' for employees, or are offers to the general public, these deals are presented as improving people's health and lives through self-tracking diet, bodily functions and fitness behaviours. The insurer Aetna, for example, advertises its self-tracking deal as enabling people to 'live their best lives' (CVS Health, 2019). Vitality in turn promotes its scheme as being a 'private health insurance that rewards you for being healthy' (Vitality, 2019).

The websites of the wearable vendors promote style and functionality with a focus on how the devices can be used to track health indicators such as heart rate, and in combination with a range of activities such as surfing, swimming, biking and running (Apple Watch and Garmin); and more mundane activities such as eating and sleeping (Fitbit). These websites all promote the logic of self-tracking, with slogans such as 'Every move counts. So count every move' and 'There's more to health than fitness' (Apple Watch); 'Find your fit' (Fitbit); 'Achieve your goals'

(Samsung); and 'Count every heartbeat' (Xiaomi).

The insurers' websites provide details of the schemes. These involve tracking daily activity such as 'walking, running, cycling, swimming or going to the gym' (Vitality 2017). This is facilitated by the incentivised purchase of a wearable device (such as a Fitbit, in the case of the Blue Cross Blue Shield Association) or the Apple Watch (in the case of Discovery's Vitality programme and Aetna's Attain program). Discovery and Aetna's programmes also implement a 'loss-framed incentive'. If customers do not behave as required, they are penalised and responsible for the full price for their Apple Watch (Vitality, 2018; Aetna, 2018). Under Aetna's Attain program, employees can also pay for their Apple Watch through payroll deduction. Aetna provided the Apple Watch for free to 50,000 employees as part of enrolling them in its corporate wellness programme 'to encourage them to live more productive, healthy lives' (Aetna, 2016). This material therefore promotes these schemes as contributing to individual health and wellbeing, while implementing incentives to ensure that the end-users comply with their terms.

The material also indicates how these schemes benefit insurers, although this is presented in somewhat veiled language. Vitality states for example that by encouraging customers to engage in healthy behaviour, they 'can benefit without having to claim', there-

by saving money for the corporation (Vitality, 2017). It also states that it believes in the idea of ‘shared value’, which it claims is a ‘unique approach to insurance, based on the scientifically proven principles of behavioural economics’. By encouraging its customers to behave in a way that is considered ‘healthy’ they hope to ‘develop healthy, long-term habits that are good for you, good for us and good for society’ (Vitality, 2017). The schemes also offer rewards for customers who sign up for multiple products, thereby increasing revenue. Vitality provides access to exclusive discounts and reward partners if users ‘take advantage of all our partners and reach platinum status’ (Vitality, 2017). Blue Cross Blue Shield’s ‘Blue 365’ programme allows members to bundle a discounted Fitbit purchase with gym membership.

The PR materials include press releases with details of deals between Insurance Companies and wearable providers, for example: ‘Aetna Announces Attain, a Personalized Well-being Experience Combining Health History with Apple Watch information to Empower Better Health’. They also emphasise that these schemes introduce ‘more personalized goals’ and ‘recommendations for healthy actions’. Under the Attain Scheme, users ‘will have the additional option to share their Attain program data and health history with Apple, enabling Apple and Aetna to collaborate and over time, continue to improve the At-

tain experience’.

This material also promotes the insurance companies’ size in terms of numbers of members and market position, i.e. ‘Blue Cross Blue Shield Association partners with Fitbit to Deliver Special Offer on Fitbit Devices to over 60 Million Members’.

In summary, the marketing publications promote the STHLIS and the logic of self-tracking on which they are based. They claim that these schemes introduce more personalised health care and enable their customers to save on health costs. They argue that participating in these schemes will improve customers’ lives and wellbeing, and point to a number of benefits that customers can avail of. At the same time, they indicate why these schemes are an interesting proposition for insurance corporations, i.e. a healthier client base will also reduce costs for the insurer.

(b) Journalistic Publications

The journalistic articles (n=37) correspond with the information that is presented in the advertisements and PR material. Roughly half of these (n=18) further the discourse of social innovation promoted by the industry, referencing disruptive innovations, investment, big tech and their consequences for healthcare. Around one-quarter of the articles (n=11) report directly on the deals that insurance companies have

entered into with wearable vendors and highlight the features of these deals as promoted in the companies’ marketing material. While we found occasional references to concerns that the diffusion of self-tracking gadgets might raise (n=6) (such as users being continuously monitored by their insurers, or sharing vast amounts of data, and potential privacy concerns), half of these concerns (n=3) are expressed in an ironic form, undermining their relevance. An article by Christina Farr (2017), published on the CNBC website is titled: ‘You can get an Apple Watch for only \$25 ...with one small catch’. The catch referred to is that, in exchange for the discounted watch, customers are monitored and required to follow the insurance company’s fitness guidelines.

Farr’s article also raises critical points, i.e. that self-tracking deals tend to discriminate against low-income groups who have less time to spend on fitness activities, or that employers might penalise workers on the basis of their data. However, these concerns are presented towards the end of the article. By contrast, over three quarters of the article provides details of the Apple Watch deal that the US insurer John Hancock offers. This includes information about how to sign up for the deal and a report on the success of the trial period. This report is supported by statements from the insurer’s senior representatives.

This pattern of advertising followed by a critical

afterthought is characteristic of most of the other critical articles we found on the topic (n=4) (cf. Chiglinsky (2018) for Bloomberg, and Chen (2018) in The Verge). The title of Chiglinsky's article states that 'Life Insurance Companies are *Luring* Fitbit and Apple Watch Users with Deals' (our emphasis). Subsequently, however, little is written that would indicate why this luring might not be in consumers' best interest. After all, while most consumers are given the opportunity to save money, Tal Gilbert, the Chief Executive Officer of Vitality USA states that 'there is no penalty for people with health issues' (Gilbert in Chiglinsky, 2018).

Chen's (2018) article also allows senior representatives of insurance companies to advertise these deals and their advantages at length. Brooks Tingle, CEO of John Hancock Insurance defends self-tracking schemes against the accusation of being coercive. Tingle states that 'the customer has total choice about whether they participate.' Towards the end of the article Chen introduces more critical voices. Historian Dan Bouk contradicts Tingle's claim of 'total customer choice' by stating that insurers '... impose and flatten the variety of ways in which it's acceptable to be healthy' (Bouk in Chen 2018).

On the whole, the effect that this genre of reporting may have on readers and their understanding of reality refers us back to Fairclough's observation that,

in the language of new capitalism, socio-economic changes are presented as inevitable (Fairclough, 2010, p.282). By devoting the prominent parts of their reporting to informing about self-tracking deals and how readers might be eligible for them, these articles do not, for the most part, critically engage with the socio-economic changes that may be introduced. A limited number of articles express concern or criticism (n=6), but half of these don't explore the implications of these concerns. Only one article mentions that STHLIS may promote inequality and that consumers might find themselves locked into coercive commercial digital ecosystems.

The majority of these articles reinforce the idea that STHLIS are innovations that will change the health and insurance industries. Blank (2018) refers to the fact that some life insurance companies are 'mandating the use of an activity tracker' because they believe, based on cost outcome studies, that they will reduce their overall expenses. Kelly Barnes, a consultant for health insurers at PriceWaterhouseCoopers, is also quoted as saying: 'I'm very confident we're all going to be on insurance marketplaces in the not-too-distant future' (Barnes in Olson, 2014).

To sum up and evaluate this cross-section of the literature, we find that most journalistic articles further the discourse of innovation promoted by insurance companies in their marketing publications. They

contribute to the establishment of these innovations as an inevitable reality. They also fail to inform their publics about the cultural and social consequences that these schemes imply. While some articles hint at the potential downsides of STHLIS, half of these do so in an ironic fashion that undermines their critique. They also neglect to explore how STHLIS may change the way in which health care and health insurance have traditionally been conceived of and understood as a collective rather than an individual responsibility.

(c) Trade and Industry Publication

The sense of inevitability that emanates from the marketing and journalistic articles increases in the trade and industry publications (n=14). This material includes publications from insurance companies (such as annual reports) (n=5), and consultancy firms (n=9). These use evocative language such as 'disruption' (n=5), 'opportunity' (n=11) and 'innovation' (n=9), which we argue, following Zuboff (2019), aims to reinforce the claims made about STHLIS.

In the consultancy publications, key figures, including product developers, CEOs and consultants, inform about upcoming trends and investment opportunities. The underpinning logic is that if insurance companies do not innovate, they will perish (cf. Blank 2018, Hersh 2018). The title of one article,

‘Insurtech – the threat that inspires’ exemplifies this discourse (Catlin, Lorenz, Münstermann, Olesen and Riccardi, 2017). McKinsey, the consultancy firm that produced the article, announces on its webpage, that: ‘New, technology savvy players are entering the insurance sector, bringing the full force of their innovative, disruptive, opportunity-laden power. They will alter the terrain on which incumbents compete’ (Catlin et al. 2017). In the following we summarise the three most salient advantages of STHLIS that are promoted in this sub-section of the literature.

Firstly, data is promoted by insurance consultancy firms as ‘the new healthcare currency’ (Taylor, Ronte and Haughey, 2017). Instead of a ‘health snapshot’, which life insurers previously used to calculate insurance premiums, self-tracking data promises a continuously updated status report (Hersh, 2018). Wrapped in value-laden words such as ‘personalised’ (n=6), ‘customer-centred’ (n=7), ‘patient-centred’ (n=4), or ‘value-based’ (n=6) care, the long-term industry vision for STHLIS is to arrive at the possibility of adjusting the price of each individual’s insurance fee, depending on the data that consumers continuously produce and submit. ‘[H]ow does it make any sense to set a rate at a certain point in time, when a change in your behaviour could shift the underlying risk throughout your life?’, asks Adrian Gore, Discovery CEO, in an interview with *McKinsey Quarterly*

(Gore, 2015). Needless to say, Gore implies that this doesn’t make any sense, particularly now that Discovery has access to continuous data streams from their clients.

An additional but related aspect is based on Discovery’s experience with the Vitality programme in South-Africa. There it showed that ‘the average life expectancy [sic] of an insured South African is 67 years while the average life expectancy of an insured Vitality member is 81 years’ (Silvello 2017, p. 3). This difference is not merely due to the scheme’s motivating effects on members’ lifestyles, but also arises because such schemes attract people who are healthier and more health-conscious to begin with. The aim then is to use self-tracking schemes to attract and identify those customers that are least risk-prone and, hence, most profitable (Singhal et al., 2016).

The second advantage promoted in these publications is the possibility to increase customer engagement and the number of interactions between the insurer and insured. As Chad Hersh (2018), Vice President of Capgemini, explains: ‘The industry has been at a disadvantage compared with other financial services firms such as banks because to date life insurers’ presence in customers’ lives had been confined to infrequent transactions such as policy renewals or policy changes.’ Becoming a presence in customers’ lives is reported to be ‘high on the wishlist’ of

Insurtech corporations in general (Taylor et al, 2017). Customers thus become tethered to their insurance providers who can seek to motivate and nudge them to change their behaviour.

While these interventions seem perfectly reasonable and in the best interest of consumers, they introduce uneven power relations. Increasing the amount of information about clients lays the foundation for more ‘personalised’ and customized insurance products. ‘Continuous customer monitoring helps to identify the lifestyle and life-stage needs of already-existing customers while attracting new customers with more targeted products’, explains Hersh (2018). In this way, health insurance becomes increasingly divided into discreet packages e.g. the ‘basic package’, the ‘cancer package’, the ‘mental health package’.² Consumers are thus encouraged to pick and choose according to their ‘preferences’ (Singhal et al., 2016) and depending on their needs (Hersh, 2018). These choices are framed as a significant step towards ‘customer empowerment’ (Singhal et al., 2016) and away from traditional ‘one size fits all’ insurance schemes (CVS Health, 2019). Traditional insurance schemes in which all members were covered against all kinds of sicknesses are presented as unappealing and outdated.

These deals are however not merely being designed to empower customers and cater for their

needs, but also to increase profit margins. As Discovery's Integrated Annual Report for 2018 explains: 'Rating factors are applied to standard premium rates to differentiate between different levels of risk. For example, premiums are differentiated by income, education level, smoker status, gender, medical history and age' (Discovery, 2018). Customisation implies that we are all different, needing different things at different times in our lives. Rather than empowering all customers, this in fact means that we should all pay different fees, depending on our health, behaviour and socioeconomic status.

The third opportunity relates to the potential to build a commercial ecosystem around these schemes. The promise of rewards for good health and behaviour can easily be tied to endorsements and co-operations with business partners. Thus, customer 'health journeys' now include visits at 'health specialists' contracted by the insurer, discounted memberships at partnering gyms and buying food labelled as 'healthy' at affiliated stores (Discovery, 2019).

Admittedly, the sway such an ecosystem holds over its clients is still based on a coercive *soft* power: suggesting certain behaviours, warning of others, rewarding some life-style choices rather than others, framing some activities as more welcome, and beneficial for the client, than others. Yet, this normalising power can affect people's attitudes towards them-

selves and others. Living with the knowledge that all our activities are monitored and incur a cost that impacts our individual worth could lead to a consideration that certain people are worth more than others because of their health status and the effort that their data proves they have made.

To summarise, this sub-section of the literature promotes a double vision for insurers to *continuously monitor* clients and to *continuously task*, preoccupy and, in this way, *lead* their customers through their 'health journey'. In our view, this puts the insurer in a close and powerful position in relation to their client. The insurer obtains the power to *shape the behaviour* of its clients and *evaluate their worth* along the lines of private profit interests. Indeed, Discovery describes itself in its annual statements as 'the World's largest platform for behavioural change' (Discovery, 2018).

(d) Academic Publications

Finally, we explored how the academic community had responded to these nascent developments. The literature we found (n=25) included both applied (n=12) and critical (n=13) publications from a range of different fields, including healthcare (n=12), engineering (n=2), social science (n=6); philosophy (n=1) and legal studies (n=4).

The applied academic work (n=12) seeks to facili-

tate the development of STHLIS. In these publications there is little that points to hesitancy, doubt or an awareness of the possible sociocultural downsides of these schemes. They echo the idiom that we found to be characteristic of the industry publications. With regard to increasing customer engagement, the goal of STHLIS is understood to develop 'dynamic', 'real-time' and 'individualised' 'risk-based pricing' (Silvello 2017, p. 2).

With regard to continuous monitoring, McCrea and Farrell (2018, p. 402) argue that in the past 'information asymmetry' between individuals and their insurers, led to people 'who do not attempt to remain healthy' *penalising* low-risk policy holders. Notions of surveillance, control and (soft) coercion underpin these visions of the future of the industry. In the words of insurance entrepreneur Andrea Silvello, '[I]nsurers need to transition from 'Payers' to 'Players'' (Silvello 2017, p.1) – they are set to become 'leaders' who guide their clients 'towards risk free behaviour', all the while proposing 'ancillary services [...] in order to exploit relevant data detected' (Silvello 2017, p. 2).

Promoting the ideas and idiom of the business community is also characteristic of the critical academic work (n=13). Some of these texts get caught in the individualistic and competitive framework that underpins the discourse of innovation which they analyse. Zajicek and Meyers, for example, in an ar-

ticle on ‘Digital Health Entrepreneurship’ (2018) hail the entrance of ‘start-up culture’ in the health and life insurance market. Interestingly, the vision they attach to this displays an acute awareness of social injustice as well as the willingness to address this. However, the industry idiom they use to expound their vision gets in the way of their search for a more just health system:

The challenge for digital health entrepreneurs, like other stakeholders, is to change a provider centric, fee for service, low quality, high cost, specialty driven, outcomes disparate system to a patient centric, value based healthcare system that eliminated [sic] health outcome disparities based on geography, race, gender, insurance coverage and other socio-economic drivers (e.g. nutrition, housing and education) (Zajicek and Meyers, 2018, 9. 272).

Clearly, the authors’ support the creation of a more equal health service, in which vulnerable groups are no longer neglected. At the same time, however, our analysis indicates that terms such as ‘patient centered’ and ‘value based’ have been appropriated by the industry in very specific ways. This problem is emphasised by Lena Rudkowski (2017) in an article which maps STHLIS in the German market. In contrast to South Africa and the UK, where Discovery of-

fers both life and health insurance policies, German law accepts variable self-tracking tariffs only in the case of life insurance. Rudkowski (2017) states that establishing a connection between health insurance tariffs and self-tracked fitness data would contradict ‘principle legislative valuations’ which are grounded in people’s right to freely unfold their personalities:

In view of the existential importance that health insurance has for the insured, particularly in personal crisis situations, the insurance policy, with its initially defined conditions, is to be called into question neither due to the decline of the insured’s health status, nor due to their personal, or, from a medical viewpoint, potentially risky, lifestyle. The insurer’s interest in an equivalent relation between risk and premium must take second place behind the insured’s interest in their free, and *possibly risky and unreasonable way of life* (Rudkowski, 2017, p. 459 our translation, emphasis added)

We submit that, at least in a European context, where health insurance has been more explicitly connected to social responsibility and welfare provision (cf. Fall. 2019), our understanding of health and fitness will change significantly if we follow the logic of the Insurtech industry in connecting these concepts to financial gains and losses. Even if STHLIS currently cannot ‘disproportionately pressure insurance

takers’ (Rudkowski, 2017, p. 458), we can expect that, as these schemes are diffused, the cultural pressure for people to adapt to their performance logic will become stronger. Once notions of worth and merit have permeated ideas of health care, the foundation of health insurance as a common good and its predication on the notion of solidarity is eroded and replaced by competition. As researchers exploring this field we should not further the discourse of the industry. This reproduces not only what Shoshana Zuboff calls ‘destruction rhetoric’ (2019, p. 50), but can also erode established notions of social justice.

The second central theme arising from the critical academic literature (n=13) relates to a strong concern with privacy and the protection of personal and sensitive data (n=12). Already in 2012, Marxist media scholar Christian Fuchs pointed out that:

Privacy under capitalism is best characterised as an antagonistic value that is, on the one hand, upheld as a universal value for protecting private property, but is, on the other hand, permanently undermined by corporate and state surveillance into human lives for the purpose of capital accumulation (Fuchs 2012, p. 141).

This contradiction sheds critical light on the approach that the academic publications in our sample have taken. In line with the European General Data

Protection Regulation (GDPR), roughly half (n=6) of these publications argue that user data can be regulated according to the principle of ‘informed consent’ (cf. Troiano 2017).

‘Informed consent’ means that individuals are responsible for the data-use agreements that they enter into when gaining access to private digital services. It implies that they have thoroughly read the terms and conditions, which they usually consent to by clicking the ‘I agree’ button. However, it is a long-established fact that, more often than not, individuals are primarily concerned with accessing the internet service in question and have little patience with the ‘digital small print’, or little understanding of what consent implies. Indeed, one article in our collection (Anaya, Alsadoon, Costadopoulos and Prasad, 2018) found in an online survey that participants did not relate the concept of ‘informed consent’ to data privacy issues at all. They were unable to perceive any serious consequences for their lives when agreeing to data sharing. As Zuboff (2019, p. 48), in line with many others, observes, ‘... terms-of-service or terms-of-use agreements are also referred to as ‘click wrap’ because, [...] most people get wrapped in these oppressive contract terms by simply clicking on the box that says ‘I agree’ without ever reading the agreement’.

In this respect, operating according to the principle of ‘informed consent’ in practice does not support

individuals in taking responsibility for their personal data in any meaningful way. For example, when the US insurer Aetna advertises its Attain self-tracking scheme as ‘completely voluntary’ (CVS Health, 2019), this imaginary freedom of choice masks the power these corporations wield in relation to their users. Even if clients were to base their consent on a thorough vetting of the available information, they would still have to tick the ‘I agree’ box if they wanted to join the ‘shared-value community’ and avoid giving the impression that they were ‘penalising’ other insurance takers with their disregard for physical fitness. It is the ‘take-it-or-leave-it’ (Zuboff 2019, p. 48) logic of the contracts of these digital services that makes their data harvesting endeavours successful. Self-tracking insurance deals simply take this logic to a new, *vital* level.

DISCUSSION AND CONCLUSION

We have explored how self-tracking health and life insurance schemes (STHLIS) are presented in marketing, journalistic, industry and academic publications, and how the discourse presented relates to social change. STHLIS are presented by the industry as ground-breaking social innovations. This discourse is further promoted in marketing and journalistic articles and in both applied and critical academic research. This has the effect of presenting these innova-

tions as inevitable and of foreclosing the possibility of imagining alternative future scenarios. It also fosters an unequal power relation between individual consumers and private health corporations.

Discovery CEO Adrian Gore claims that Discovery makes ‘an innovation score part of each manager’s performance evaluation’, adding that ‘our leaders are always on a treadmill’ (Gore, 2015). This relentlessly competitive stance is also what the insurer seeks to cultivate as the new behavioural norm for its policy holders. Beneath the language of care, the playful tasks and the tempting rewards, this norm oozes of egotism and individualization.

But how can the authoritarian tendencies inherent in these insurance deals be resisted? Firstly, as academics, journalists, politicians and lawmakers, we should stop furthering the discourse that is promoted by the industry. We have found an excessive and uncritical use of buzz-words, such as ‘reward-based’, ‘customer-centric’, and ‘shared value care’ in our material. This reproduces the insurers’ ideological framework. We should instead identify and criticise this framework and imagine potential alternatives based on principles of solidarity, fairness and equality.

Closely related to the above point, developments in self-tracking insurance reinforce the need to reconsider our understanding of data privacy and cur-

rent approaches to managing and regulating this. Even though the GDPR has been hailed as an important step in the direction of better privacy protection (Troiano 2017), the compromise it seeks to strike between consumer protection and business friendliness plays largely into the hands of corporations. GDPR relies heavily on the notion of ‘informed consent’. It makes individuals responsible for their data privacy but in doing so fails to protect people in radically unequal power relations. It also reproduces the discourse promoted by big-data corporations. When Brooks Tingle, CEO of the US insurer John Hancock, claims that ‘the customer has total choice about whether to participate’ (Brooks in Chen 2018), this is not true, either for the STHLIS, or for the broader commercial ecosystems through which customers are led. This illusion of choice masks the power these corporations wield in relation to their users. While this power might be soft, it is nonetheless coercive. The choices that people are invited to make have already been determined.

Discourses promoting these innovations focus on the fact that they are grounded in ‘shared’ values. This sharing generates an economic profit for insurance corporations, who may then ‘share’ their profit with clients (in the form of a saving on the cost of a commercial insurance programme, or other ‘benefits’) if the client satisfactorily performs health-re-

lated activities and tasks. An additional, less transparent element of this concept is that it undermines the understanding of health insurance as a collective responsibility. Individuals are rather encouraged to out-perform their peers, in order to secure better insurance products for themselves. It also promotes the idea that those who do not behave appropriately should pay higher health costs. This conflicts with the approach to healthcare and insurance that currently dominates in European societies (cf. McFall, 2019; Fieschi and Grabbe, 2019). We argue that STHLIS risk eroding and thus jeopardizing values of collective responsibility and welfare, by undermining people’s conceptions and expectations of solidarity with a radically individualised and performance-based pricing strategy. We argue that health and life insurance should not be commodified, tied to conditions, or to individual performance.

While self-tracking insurance deals are presented as facilitating the empowerment of users to radically improve their health, and thus as social innovations, we argue that the way in which these deals currently propose to bring about social change could fundamentally undermine their users’ freedom, thus influencing the extent to which consumers can live good lives with technology.

Steffen Krüger

Senior Lecturer, University of Oslo
steffen.kruger@media.uio.no

Niamh Ní Bhroin

Researcher, University of Oslo
n.n.bhroin@media.uio.no

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NOTES

1. Insurtech is an evolving industry that combines insurance and technology. It emerged around 2010 to increase profit and efficiency in the insurance industry (Hargrave, 2019). Its market size is expected to grow to 175.4 billion US dollars by 2020 (Statista, 2020).
2. See <https://www.vitality.co.uk/health-insurance/cover-options/> (last accessed 06/08/2019) for an example of this strategy.
3. Ranked according to Market Share based on Statista (2020b).
4. Membership figures are collected from IBIS World (2020).
5. Information about STHLIS is gathered from insurers’ corporate websites.
6. The Wearables Market Report indicates that there are 30+

global vendors of wearables. The main players are Fitbit (recently acquired by Google); Apple; Xiaomi; Samsung; and Huawei). The main growth trend is the focus on health and fitness. According to Reddy (2019), the size of the wearable medical device market in the US alone will be 27m dollars by 2023 (up from 8m dollars in 2017). This includes heart rate sensors, exercise trackers, sweat metres and oxegyn metres.

7. An indication of the commercial potential for wearables is Google's recent acquisition of Fitbit for 2.1 billion dollars (Cawley, 2019).

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