Plurality of values in mHealth:
Conventions and ethical dilemmas

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The pragmatic economics of conventions offers new insights into mHealth, providing a deeper understanding of current ethical problems.

THEORETICAL INTRODUCTION TO THE ECONOMICS OF CONVENTION IN THE FIELD OF (M)HEALTH

By conducting a pragmatic analysis of digitisation and mHealth, we want to introduce a new fundamental perspective to shed light on the moral and ethical questions arising from mHealth.

As a general social science theory, the economics of conventions (EC) offers consistent pragmatic concepts for the sociological analysis of social institutions, social cognition, social actions, social interactions and coordination processes, social constructions of facts, and social entities and their qualities. EC conceives of conventions as deeper and more general logics of coordination, interpretation and evaluation that actors apply in situations (Diaz-Bone 2018). From this perspective, actions are always the result of a process (Eymard-Duvernay et al. 2011) and are characterised by coordination between individuals and their social and material environments (Diaz-Bone 2018). Therefore, and in addition to the actors, conventions (Boltanski & Thévenot 2007), forms and objects (Thévenot 1984, 2001) become relevant by partly defining the meaning and social relevance of health. Adopting this theoretical perspective, we focus on health as a category that has to be mobilised in the first place (Foucault 1973; Ewald 1993) and has to be seen as a plural social institution (Collyer 2015; Batifoulier, Da Silva & Domin 2018; Da Silva 2018) that is enforced by ongoing digital transformations (Ruckenstein & Dow Schüll, 2017; Sharon 2018). Related to the EC perspective, we assume that the implementation of mHealth is guided by a plurality of logics, which causes – at least partially – (ethical) conflicts among them.

Research on health from an EC perspective illustrates this plurality of logics in different health-related fields. Regarding physicians' private practices, research has shown a shift from an inspired/domestic convention to an industrial convention, with strong implications for commodification, deliberation and rationalisation (Da Silva 2018; Batouflier

et al. 2018).[1] Further, research indicates that social security is not always understood as a consciously established welfare-state institution but rather as the result of three competing conventions: an anti-capitalist one, a solidary one, and a liberal one. These three conventions are used by the involved actors to justify decisions to criticise existing policies in the welfare state. Consequently, welfare-state institutions can be understood as a specific result of these negotiations (Batifoulier, Da Silva & Vahabi 2019). Further, Sharon (2018) applies EC to the "googlisation of health research", which enlarges the dichotomy between public benefit and private, corporate gain in health research. She depicts five moral repertoires that draw upon different conceptualisations of the common good, as shown in Table 1 (cells without grey shading).

We expand Sharon's analysis to the field of mHealth, focusing on the conventions inscribed into mHealth technologies. As part of this, we examine some published fact-sheets[2] and guidelines[3] of the public eHealth agency eHealth Suisse. Competence and Coordination Office of the Confederation and the Cantons. This agency is intended to support and guide developers, users and legislators in the field of mHealth, in particular with the introduction of electronic patient files. We also combine these results with findings of the DFG-funded project "Taxonomies of the self. Emergence and social generalisation of calculative practices in the field of self-inspection", which examined health and fitness tracking and the emergence of new taxonomies based on interviews with self-tracking individuals.

PRELIMINARY EMPIRICAL RESULTS: CONFLICTING MORAL REPERTOIRES PRESENTED IN MHEALTH

Preliminary results show that the eHealth agency publications perceive three main problems or difficulties in the adoption of mHealth: first, data protection and data security, second, the standardisation of data technology (interoperationality) and, third, the intended and actual use of mHealth technologies.

To begin with the first of these problems, data security evokes different conventions. On the one hand, the domestic convention problematises the fact that users of mHealth technologies must strongly trust in data security as a precondition for sharing their sen-

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[1] For more information about the different conventions, please see Diaz-Bone 2018.

[2] eHealth Suisse (2010): Der Nutzen von eHealth; eHealth Suisse (2010): OID-Konzept für das Schweizerische Gesundheitswesen; eHealth Suisse (2012): Zertifizierung der Qualität von Gesundheitsinformationen im Web; eHealth Suisse (2014): Nutzen des elektronischen Patientendossiers aus Sicht der Patienten; eHealth Suisse (2014): Nutzungsmöglichkeiten von SNOMED CT in der Schweiz; eHealth Suisse (2014): Studienresultate zum Thema „eHealth" und elektronisches Patientendossier.

[3] Study by order of eHealth Suisse: Endl et al. (2015): "mHealth im Kontext des elektronischen Patientendossiers. Eine Studie im Auftrag von eHealth Suisse".

sitive health data with selected interest groups. On the other hand, and following the logic of the civic convention, data protection must be formally guaranteed for reasons of transparency and liability; this may occur via official certification mechanisms.

As far as the second issue is concerned, the absence of standardisation in the area of mHealth is problematised by different conventions for various reasons: standardising the many different devices and applications to meet the technical requirements of the electronic patient dossier is viewed as a challenge. From the perspective of an industrial convention, standardisation allows the planning, efficiency, functionality and competence of mHealth technologies and with it the possibility to develop quality standards for health information and acceptance. The civic convention also advocates standardisation to ensure the quality and credibility of digital medical information for all citizens. In contrast, and from the perspective of the market convention, standardisation is necessary for monetary reasons, for instance, for insurers to reimburse services related to mHealth technologies or to divide the costs and benefits of mHealth between different stakeholders.

Third, the lack of a widespread use of mHealth-technologies is also problematised from the perspective of several conventions. From the perspective of the vitality convention, a broad use of mHealth technologies should prompt people to deal with their health and thus remain healthier. Ideally, mHealth technologies should be more person-centred than previous treatment processes. From a civic convention perspective, the question of whether the introduction and application of mHealth technologies is wanted and accepted by the population is an issue.

As long as different conventions pursue the same goal for different reasons, no conflicts are expected. Nevertheless, and considering the three mentioned problems – data protection, standardisation and use of mHealth technologies – some lines of conflict seem to appear between them. The broad use of mHealth technologies seems to be linked to trust in high data security (domestic and civic convention) and high quality standards through certification (industrial convention). From the perspective of an industrial convention, the successful implementation of mHealth technologies depends on the integration of private providers, which mainly follow market conventions due to the lucrative mHealth market. Furthermore, this could lead to a conflict between the industrial/market conventions, both of which favour the integration of private providers, and the domestic and civic conventions. This is because both private insurance companies and private manufacturers of wellness and fitness mHealth apps need to collect, share and evaluate data to successfully implement their business model. Another conflict can be expected to arise between standardisation and the idea of improving individual health. Standardisation complicates the individual relationship between doctor and patient and cannot really capture the individual reality of life, which often follows an inspired and industrial or domestic logic. Hence, and as shown in our interviews with mHealth users in the DFG project, they seem to accept and tolerate the industrial convention only up to

a certain point. Therefore, they transform the numbers, averages and comparisons into qualified data (Swan 2013), following an inspired/domestic convention. Analysing the users' perspective and practices, we find evidence of a continuum that spans a quantifying, goal-oriented approach according to an industrial logic and a curious-explorative and above all self-focused approach following an inspired logic, although even the practices that appear to be planned and objective are placed in a logic of intrinsically motivated self-care.

Consequently, our analysis extends Sharon's table on moral repertoires by adding two more conventions: the domestic and the inspired one (see Table 1). Further, our results depict some current and forthcoming conflicts, mainly emerging between the industrial/market conventions and the domestic/inspired logics as well as the civic logic.

PLURALITY OF VALUES IN MHEALTH AND THEIR CONSEQUENCES FOR ETHICAL DECISIONS

The EC perspective shows that mHealth technologies are also technical objects that suggest an instrumental relationship to nature and thus a kind of objectivity. But to measure health, it is necessary to determine what should be measured, how it should be measured and for what purpose. When considering a technical object, like a health app, one might assume it measures a natural state. But there is no universal "natural" state of health that could be measured without a context. The interests and values that lead to the measurement of specific health parameters (see Table 1) can quickly become invisible through the technical object (Boltanski & Thévenot 2007). Actors are guided by conventions in all situations, also when defining, measuring and implementing health. With this orientation, they link their evaluation and critique of digital data and "digital health", either by planning to measure health or by judging the results of the measurements.

For mHealth applications, this means developing a health plan that fits numbers, signs and codes. So, there is a need for a digital representation of health. This leads – from an ethical perspective – to the following question: how could and should this work? What logic of a common good legitimises decisions and how could and would we decide if we were able to discuss the different logics represented in Table 1? The evaluation and acceptance of digital applications can only be understood when the plurality of these value logics is considered and consulted. Different and conflicting "logics of values" may result in criticism or rejection of mHealth technologies, as shown in the conflict that arises when mHealth users expect a domestic or inspired logic, while the technology incorporates an industrial one.

TABLE 1: MORAL REPERTOIRES PRESENT IN MHEALTH (SHARON 2018 AND OWN ELABORATION (IN GREY))

Repertoire	Common good	Values	Example (translations by authors)	mHealth(care) as
Civic	Collective well-being	Inclusivity, solidarity, equality	"Provide reliable guidance"	A human righ
Market	Economic growth	Competition, consumer choice, profit	"The evaluation and establishment of standards and norms is therefore one very important condition for the dissemination and economic use of mHealth."	A market good
Industrial	Increased efficiency	Functionality, expertise, optimisation	"the greatest benefit lies in the exchangeability of data, so in interoperability"	A (data) system to streamline
Project	Innovation and the network	Activity, experimentation, connection	"mHealth services offer great potential, the collection of huge amounts of health data (Big Data) to facilitate them. These data enable research and innovation continues to advance in the field of health care"	A project requiring innovation
Vitality	Greater health	Good health, life, vitality	"...contributes to the responsible use of one's own health and thus helps to increase health literacy"	Intrinsically worthy
Domestic	Tradition	Hierarchy, trust	"…so I developed a good sense of when my pulse goes up. So actually I know what's on the clock "	Socialised/ learned health knowledge
Inspired	Inspiration and deliberation	Spontaneity, emotion, creativity	"We are not average people but everyone is an individual. For an individual, other rules count"	A result of body and soul-experience

CONCLUSION

The different valuation logics can lead - in an institutionalised context, e.g. in medical examinations or insurance agreements – to permanent conflicts, such as the rejection of mHealth applications. EC can help identify potential lines of conflict in the implementation of mHealth at an early stage, recognising the plurality of (moral) values in specific situations. It is crucial that this plurality of moral orders is taken seriously, as these orders influence decision-making, actions, technology development and usage. Thus, EC can contribute to the detection, description and resolution of ethical dilemmas.

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