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“WITHIN THE HOUR” AND “WHEREVER YOU ARE”: EXPLORING THE PROMISES OF DIGITAL HEALTHCARE APPS

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ABSTRACT

The use of healthcare apps for medical advice is becoming increasingly common. This paper explores apps that offer interaction with medical experts. Working from the supposition that digital technologies are intimately entangled in their cultural context, we argue that the apps do more than just neutrally mediate contacts and offer medical and psychological advice. The article addresses the cultural dimensions of healthcare apps and answers questions about the ways in which such apps contribute to forming changing notions of what “healthcare” and being a “patient” entail. Three popular Swedish apps and their marketing material is studied using a discursive interface analysis of the apps’ affordances. The results show that the apps significantly contribute to producing a marketable narrative about app health care that includes accessibility, security/safety and personalisation, and which is partly produced as an alternative to what is offered by Swedish public health care. The results further show that this narrative primarily represents and addresses users who are young, busy, urban consumers of care – partly contrasting policy expectations and hopes.

Keywords: healthcare apps; discursive interface analysis; affordances; e-health; digital health care; critical digital health studies; patient positions

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1 INTRODUCTION

The use of digital technology in health care has increased dramatically over the past decade. In Sweden, the government's goal is to become the "world's best" e-health provider by 2025 (Regeringskansliet and SKL 2016). Digital technologies are depicted as solutions to a range of problems: from long waiting times to the challenges of the geographically uneven distribution of health care. The transition to digital health care is happening quickly, partly because the Swedish welfare system supports private sector e-health businesses via public funding. Several private sector e-health agencies were established as startups only a few years ago and have quickly become dominant actors in the new market of digital health care in Sweden, as well as in several countries in Europe.

Via applications (apps) in smartphones and computers, patients can interact with physicians, nurses, psychologists and chatbots instead of visiting physical hospitals and healthcare centres. The apps have been described as important complements to public health care by various Swedish stakeholders: representatives of the app companies, as well as politicians and public officials (e.g. Skr. 2005/06:139; Nyhlén and Kangro 2017). Even though e-health solutions are not new, these digital and commercial platforms are significantly changing the ways in which people practice and experience health care, contesting what health care means and also what it means to be a patient.

In the first issue of the *Journal of Digital Social Research*, Christian Fuchs (2019, p. 13) argues in favour of "critical digital methods that are more qualitative than quantitative", which are "critical theory-based" and that engage with societal power structures. This paper explores three Swedish apps that offer interaction with medical experts and asks questions about their ideological embeddedness. Working from the supposition that digital technologies are intimately entangled in their cultural context, we argue that the apps do more than just neutrally mediate contacts and offer medical and psychological advice, and that there is much to learn about what is at stake in contemporary constructions of health care and patients from a qualitative scrutiny of the affordances of new digital technologies, acknowledging that as well as their stated purpose, the apps also work as techno-commercial constructs. Hence, the aim is to explore the ways in which healthcare apps are promoted through self-descriptions, imageries, functions and design within the apps themselves, as well as through websites and marketing. In order to explore the apps' own stories about what they provide and to whom we apply the concept of *fantasmatic app narrative*. The first research question concerns the ways in which such narratives produce notions of "patients" and "health care". In Durham Peter's (2015, p.1) words, and in line with the theoretical starting point of

this study, technologies are not only devices of information but also “agencies of order”; they are engaged in the struggle over meaning. Hence, the second research question concerns how the fantasmatic app narrative was defended from potential criticism. This second focus highlights what is identified as antagonisms that might threaten the fantasmatic app narrative.

We start by reviewing the research area and describe our theoretical points of departure, data selection and methods of analysis before delving into the analysis of the material.

2 LITERATURE REVIEW

In recent decades, there has been an increased interest in digital health apps and their effectiveness as a healthcare technology (Black et al. 2011). Many studies are evaluative and techno-positive in nature, aimed at describing uses, suggesting improvements and mapping patient perceptions (e.g. Vo, Auroy and Sarradon-Eck 2019). However, there is also a more critical strand of research that is sometimes referred to as *critical digital health studies* (Lupton 2014b). Building on the notions of patient healthcare practices as inherently cultural and affected by contemporary lifestyles, images and tastes (Bunton and Burrows 1995), it explores the wider “social, cultural and political roles” that app technologies play in contemporary healthcare practice (Lupton 2014a, p. 607; see also van Dijck and Poell 2016). A starting point for most research in this strand is that apps constitute sociocultural artefacts that are underpinned by “tacit assumptions, norms, meanings and values” (Lupton 2017a), and that what digital health apps promise to deliver is not only a response to medical needs. Rather, by responding to more general types of needs, the apps *create* medical needs through their stylized content (cf. Frank 2000). In this sense, it is a field that takes the relationships between digital technologies and societal processes seriously, viewing them as relations of power in much the same way as Fuchs (2017) has argued in his appeal for critical digital media studies.

This critical perspective implies a perspective of power in the Foucauldian sense (e.g. Foucault 1979) as it has been developed to appreciate the impelling powers of new technologies entering into assemblages of humans and non-humans of significance for the ways in which people think and act, and for what they can become (e.g. Lupton 2016; Fox 2017). It specifically acknowledges the significance of discourse in interlinking contexts, such as the policy context and the contexts in which apps are used. It further suggests that digital devices and the personal data they collect and display are becoming integrated parts of our identities, bodies and daily lives (Lupton 2017b), not least since devices are increasingly being designed as wearables, such as wrist bands and

smartwatches. The capacities of these “everywears” (Gilmore 2015) also include haptic surveillance, in which wearable technologies communicate with the user without the user even having to remove the device in order to look at it (Rich and Miah 2014; Millington 2015).

Thus, much research has been devoted to various sorts of self-tracking devices and apps that generate detailed personal information (e.g. Pink and Fors 2017). The opportunities offered by wearables and apps for self-surveillance have been recognised as having biopolitical implications. As Sanders (2017, p. 42) suggests, digital self-tracking devices are instruments of normalisation; they facilitate the biopolitical aims of public health discourses that portray all bodies as being at risk of poor health and promote an “ethic of personal responsibility for health”. The emphasis on the significance of prevention, Sanders argues, helps to rationalise monitoring and regulate technologies “in the name of early detection and prudent action” (see also Lupton 2012). In this sense, self-tracking has been seen as one important way of tackling the crisis of public healthcare systems (Norris 2012).

While self-tracking apps are undoubtedly related to public health systems by enabling public health discourses to get a firmer grip on citizens in their private lives, there are also technologies that are more clearly deployed by and integrated into the healthcare system. Such technologies include devices and apps that work as self-care regimens for chronic illnesses, as well as technologies for monitoring older adults in their homes. While the assumptions that underly much of these technologies position users as empowered consumers who are able and willing to “take up the ideal of the engaged patient” (Lupton 2018, p. 281; 2012), there has been less focus on their limitations (Mol and Law 2004). For example, empirical studies have often problematised the balance between the capacity for self-knowledge and the surveillance and self-disciplinary effects of apps (Lupton and Jutel 2015; Sanders 2017). In their study on hypoglycaemia, Mol and Law (2004) highlight how the technical possibilities to self-measure blood sugar levels are sometimes difficult to handle in practice due to the equipment design, often aimed at a younger user, with good eyesight and whose hands do not tremble, and who the industry does not want to offend with an unfashionable design. This suggests that healthcare technologies not only partake in the constitution of medical needs as suggested by Frank (2000), but also affect the constitution of key nodes and understandings within health care, such as notions of the patient and medical expertise. As the designs are always ideologically invested, and technologies are often produced with distinct imagined user groups in mind (Woolgar 1990), an important aspect is the study of how user subjects are positioned in and by new digital healthcare technologies: Who is depicted as the ideal patient? Who is encouraged to use the technologies?

Recognising the cultural dimension of digital healthcare technologies working as “agencies of order” (Durham Peter 2015, p. 1), privileging some user subjects while discouraging others, Lupton (2014b) calls for further research to explore the affordances and sociocultural aspects of health and medical apps; how specific apps affect the understandings, positionings and practices of health and health care among patients and app users. In this paper, we answer this call by focusing on types of apps that have hitherto not been sufficiently studied. While much research has focused on apps that work as a complement to outpatient health care by encouraging people to take personal responsibility for their health, diets and physical exercise, less is known about apps whose principal function is to provide health care via digital interaction with physicians. Because of this research gap, and because of the increasing presence of these apps in public commercial space and their potential impact on people’s everyday understanding of health care and patient positions and practices, there is reason to explore how the apps’ services are presented and how their users are approached.

3 METHODOLOGICAL APPROACH

In order to select apps, we searched the App Store and looked at the ratings for free Swedish applications in the Medicine category. The three most popular healthcare apps that offered digital medical advice from physicians were chosen for our study: Kry, Min Doktor and Doktor.se. All the apps provide what is sometimes referred to as online doctor services (Bergwall 2021); they aim to provide general medical treatment and are openly available. They are also all persistently advertised in the apps themselves, as well as online, on television and in public spaces in Sweden. The three apps were studied from January 2018 to February 2020 (pre COVID-19).

We refer to the selected apps as “healthcare apps” in order to distinguish them from the wider category of health apps that also include lifestyle apps (e.g. Rich and Miah 2017), fitness apps (e.g. Hardey 2019) and apps used to feature users’ sexual and reproductive practices (e.g. Lupton 2015). In doing so, we emphasise how these apps constitute a specific category that resembles telemedicine (Lupton 2018) and which is becoming increasingly embedded in mainstream health care. The selected apps provide (online) medical treatment by trained and licensed professionals employed by the app companies behind the apps. They are funded by venture capitalists and public taxes. Overall, this makes Kry, Min Doktor and Doktor.se good empirical examples for an investigation of the ongoing transformation of health care and patient subjectivities in an era of healthcare digitalisation. As the focus of the analysis is on the production of meaning, we have chosen not to distinguish between messages based on

the sender, but to view the apps as actors involved in the ongoing construction of the social. Hence, when we talk about the “apps”, the focus is on the meaning created within/by the app, and it is of no concern whether it was the company providing health care or a software consultant who came up with a particular feature. In a few cases it was clear that the healthcare companies behind the respective apps were the primary agents, and these are then referred to as “app companies” (Kry, Min Doktor and Doktor.se) that should not be confused with the companies that may have been technically involved in creating the apps.

In order to understand the constitution of meaning around the apps and the ways in which they presented themselves and their users more fully, we also included marketing practices that took place outside of the apps themselves. This meant that the analysis comprised the apps’ respective websites and the commercials that became instantly visible to us. After downloading the chosen apps, they started promoting their services through notifications and through the e-mail addresses we used when registering accounts in the apps. We also analysed the online marketing carried out through collaborations. By searching for “collaboration with [name of app]” on YouTube and the name of the apps as hashtags on Instagram, we found 30 influencers (with between 10,000 to one million subscribers/followers) who were ranked “most popular” by Instagram’s algorithms and who, as part of their own self-branding practices (Khamis, Ang and Welling 2017), had published sponsored posts in which they promoted the apps. This method of selection meant that a few posts from before 2018 were also included. Although the influencers apparently chose their own ways of promoting the apps, they sometimes clearly followed scripted statements and we analysed their films and posts as part of the more general marketing of the apps. Also, comments on posts were included in order to see how this specific affordance contributed to the creation of meaning around the apps. All Swedish texts have been translated into English by the authors.

The theoretical framework that informs the paper includes a view of digital healthcare technologies as sociocultural artefacts underpinned by “tacit assumptions, norms, meanings and values” (Lupton 2017a). The chosen method of analysis is discursive interface analysis, inspired by Stanfill’s (2015, p. 1062) suggestion on how to approach interfaces for the structures at work within them; their “embedded assumptions about their own purpose and appropriate use”. The method is based on a view of apps as “communicative agents” (Lupton and Jutel 2015, p. 130) that employ “carefully chosen images and discourses to represent their use and function”. It recognises the constraining and enabling materiality of the apps (Hutchby 2001) and the ways in which they encourage user positions via certain forms of address. Affordance is a key concept. Originally

introduced by Gibson (1977), the concept of affordance has been developed and defined differently across various disciplinary boundaries. In this paper it is conceptualised as something which mediates but does not determine the relationship “between a technology’s features and its outcomes” (Davis 2020, p. 17; see also Hutchby 2003). This implies acknowledging how technologies *encourage* certain uses and identities, but also, as pointed out by Bucher and Helmond (2017) in their thorough review of the concept, recognising the relational aspect of affordances, which includes the context in which technologies are used.

Suggesting a methodology for the analysis of the underlying assumptions of interfaces, Stanfill (2015), building on Hartson (2003), differentiates between functional, sensory and cognitive affordances. This differentiation structured our analysis and helped us focus not only on *what* the studied objects might afford, but *how* they afford – the mechanisms and conditions of affordance (Davis 2020). According to Stanfill, *functional* affordances are about what it is possible to do with the apps. We approached the studied apps through descriptions of what they could do and what they offered the user; what functions were built into the apps. This analysis included noting whether there were any alternative options, how many stages the user had to complete before receiving an appointment with a physician, and whether the triage questions encouraged or discouraged the user from making appointments.

Sensory affordances are about the aesthetic appearance, such as choice of fonts, colours and whether or not the apps include many ads. Sensory affordances were registered and interpreted for how the apps might make the user sense and feel. This included reflections of what was used to create credibility, as well as who and what the app was for.

Stanfill describes *cognitive* affordances as being related to meaning making and entailing the intelligibility of technologies and interfaces, including textual and audio-visual content. As cognitive affordances comprise explicit statements about the app, they received a lot of focus. We approached the cognitive affordances by studying features such as button labels, instructions, self-descriptions, commentaries, and images. These features were then analysed as a way of highlighting what was perceived to be important selling points by the healthcare companies behind the apps, such as the constant focus on the short waiting times.

In practice, we used a methodology of “walkthroughs” (Light, Burgess and Duduay 2018), which involved downloading, registering, logging on and using the apps like any user, the only difference being that while surveying the apps, we took notes of the information, addresses, prompts and illustrations, and of how users were supposed to ideally navigate through the apps. We also went through the initial triage, either via a chatbot or predetermined questionnaires, in order to make an

appointment. Because of ethical considerations, we did not actually make any appointments as these would have been paid for by public funding. The direct engagement with the apps' interfaces facilitated an understanding of how user experiences are shaped and affordances perceived, and also enabled ethnographic observations of embedded cultural references (Light, Burgess and Duguay 2018; MacLean and Hatcher 2019). Thus, it is important to emphasise that our analysis is based on our perceptions of the apps' technological affordances, which reveal our roles as being simultaneously positioned as both ethnographers and users. However, a decisive difference between these positions, and one which perhaps partly disqualifies us as proper patient users, is that we used the apps for analytical, not personal reasons, such as needing medical advice. This difference may be of importance for how users feel about the apps.

Importantly, and as pointed out by Hutchby (2001, p. 448), the affordances of digital apps may be "interrelated or compounded on any given occasion" with other types of affordances. Hence, when analysing the marketing material, particularly the collaborations with influencers, we also considered the affordances of the platforms used by the influencers, primarily Instagram and YouTube. This meant, for example, that we included functional affordances such as the possibility to comment or like, and thereby interact with the messages produced via such platforms.

Throughout the analysis, our focal point was on how the functional, sensory, and cognitive affordances collectively contributed to promoting and characterising the apps. Thus, the selected apps were analysed in terms of the ways in which they reflected or challenged tendencies in the broader landscape of health care in which they operated, and for their efforts to encourage or discourage, facilitate, or impede, certain patient behaviours and identifications (Davis 2020).

The interface analysis did not distinguish between the different stages of usage but was applied throughout. For practical reasons, the different affordances of each app were first noted separately. We then grouped the recurring features together thematically. All three apps exhibited very similar affordances, which contributed to the constitution of a quite uniform image of the apps that centred around three particularly pervasive themes: the promises of accessibility, safety, and personalisation – themes that also structure the first section below.

In order to capture this uniformity, an important concept – paraphrasing Howarth, Glynos and Griggs' (2016) notion of a "fantasmatic policy narrative" – is what we have called the "fantasmatic app narrative". We define this as a normative narrative about what healthcare apps are, and what they promise and provide in terms of ideologically desirable notions of health care and patient identities. Its fantasmatic character lies in its ability to provide users with a story that both evokes and promises to fulfil

specific desires and needs (Bardini 2014). By extension, it encourages specific patient positions and practices, and legitimises the move towards specific interpretations of digital app health care. The notion of a fantasmatic app narrative closely resembles the concept of “digital imaginary”, which is sometimes applied in studies of technological assemblages, and theorised as the expectations of users and uses that form part of the apps’ affordances (Lupton 2019). Just like the concept of digital imaginary, fantasmatic app narratives engage with the ways in which an app “tells or presumes a story” (Markham 2021, p. 385), and emphasises the significance of the structured meaning provided by the apps. Our choice of the notion of fantasmatic app narrative is motivated by the way it supports the analysis of issues of power and ideology and by its ability to theorise the multiple sides of fantasmatic narratives; that they construct and offer desired practices and identifications, work to conceal the contingencies of these very constructions, and offer explanations of the way things are – why we do not seem to achieve the desired goals (Glynos 2008).

One problem that occurred, and which has been identified in analyses of similar platforms, is that their content is dynamic and thus slightly changes over time. For example, information was regularly updated and some information was removed during the period of analysis. Because of this, we noted the dates when the material was collected. The dynamism of the material also included the fact that the apps that we had installed on our own smartphones were also sensitive to our personal Bank IDs (Swedish citizen identification document to authenticate agreements online), which was mandatory for logging in. This meant that the apps were already adapted to our personal demographics, such as gender and age. Thus, there is reason to emphasise that the same app may offer partly different interfaces to different users.¹

Below, we first describe three recurring themes in the apps’ self-descriptions, which we argue constitute the promises that lay at the core of the fantasmatic app narrative. We then go on to discuss the efforts to control the narrative’s relationship to Swedish public health care. Finally, we discuss the patient positions afforded by the apps and marketing material and consider how this relates to the way in which app care is promoted on a policy level.

¹ To ensure that our analysis was not solely based on the authors’ age (between 40 and 48), colleagues and friends of different ages also logged in. Visits to websites did not require logging in.

4 THREE CENTRAL THEMES IN THE FANTASMATIC APP NARRATIVE

In this section we describe what the apps promise to deliver and what is highlighted in order to attract users. Focusing on the cognitive, sensory, and functional affordances that stood out when reviewing the material, we noted three recurring themes: accessibility, safety, and personalisation. In the material, these themes were overlapping and intertwined, but for the sake of clarity, we present them below as separate empirical themes.

4.1 Accessibility: time, money, space

All apps specifically presented their health care as being highly accessible – available around the clock, often free of charge, and reachable from any location.

Cognitive affordances described this option in short statements highlighted in terms of size and placement. “Access care instantly”, “already today”, “directly”, “within the hour” or “within a few minutes” were recurring phrases. Users were frequently told that by using the apps they would not have to wait ages for an appointment, nor would they have to spend valuable time in waiting rooms in public healthcare centres. Sensory affordances emphasised the advantages of saving time by depicting users staying comfortably at home or working.

Embedding the theme into personal experiences and opinions, the sponsored influencers provided more elaborated and personalised reasons about why saving time is important. In a YouTube video sponsored by Kry, influencer Therese Lindgren (983,000 subscribers on YouTube as of September 2019) recalls how she once had to wait seven weeks to contact a psychologist. “It’s *not good* that it takes so long!”, she claims and stresses the importance of an app option that promises help within 24 hours (Lindgren 2018).

Throughout the apps, time is constructed as important, precious, and scarce, and is transformed into a commodity that is being used as one of the main selling points: the apps sell time and patients are encouraged to buy it. However, the purchase is made invisible as it is mainly paid for via the tax bill. Some apps even promote themselves by highlighting that using the app is free of charge: “Your digital healthcare visit has a patient fee of SEK 0.00” (doktor.se, 26 Feb 2020). Being accessible also through low costs distinguishes them from visits to public healthcare facilities where patients usually pay a small fee. Thus, a pivotal point of reference in the endeavour to depict app care as an easy and rational choice is the unarticulated comparison with the largely tax-funded public healthcare organised by the Swedish regions.

Accessibility was also sold in relation to space. The portability of smartphones and the taken-for-granted internet access made it an “everywear” technology (Gilbert 2015), making health care possible regardless of the users’ physical location (cf. Lupton and Jutel 2015).

Get help wherever you are. It doesn’t matter whether you’re on the bus or abroad. With chat, voice and video calls you can easily and quickly get help from us (doktor.se, 20 Sept 2019).

On sponsored content by tonyh, categorised on Instagram as an athlete with around 30000 followers, he claims that he no longer calls a healthcare centre when he has problems with his allergies, but uses the app instead:

I meet the physician via video and don’t have to visit them. This is perfect because I travel a lot. Try it! Convenient and very practical! (tonyh, 23 April 2018)

One of the suggested perks of using the apps is that users can use the waiting time to attend to other things. Sensory affordances comprise the recurring motif of a casually dressed patient situated in their home, often symbolised by a sofa or a bed. This was found in two of the apps and is common in the images used by influencers on Instagram. However, there are also plenty of suggestions that the apps allow people to work while they are ill. A fashion blogger and lifestyle youtuber with 102,000 followers on Instagram puts it like this:

#MinDoktor asked if I wanted to try its online service and be consulted at home instead of spending the day in the waiting room...

-

quite handy to be working on my cooking skills 🍳 such as these polenta fries dipped in David’s garlic sauce 🌶️

-

what’s your game plan when you’re ill and you want to chat with a doctor? Time to step up your game? 🤔🤔🤔

-

#MinDoktor #sponsored #realtable (jennymustard, 23 June 2016)

Thus, the constructions of the healthcare apps as being a more accessible choice for health care are embedded in the digital flows of popular role models with desirable lives. The descriptions of the apps not only constitute them as a streamlined and neutral choice, but as the choice of a rational (and rather privileged) person. Who wouldn’t rather drink coffee and finish the

next task at home than spend the day in a waiting room at a public healthcare facility? The user is addressed as a rational but also a busy and highly mobile person, who has important and exciting things to do, and, frankly, who is not that ill.

4.2 Enabling security, safety, and credibility

Now during the holidays when we're travelling a lot it's so reassuring to have a healthcare app that gives us, as a family, the possibility to make an appointment with a physician directly in the mobile completely free of charge ❤️ (saracelinaa, 103 000 followers on Instagram, 9 July 2018)

The second theme that recurred as a selling point included efforts to ensure users that the apps are safe and secure. While issues regarding data security were mostly resolved by formally informing the user how personal data are handled, strategies to ensure the users' sense of safety were consistently present throughout the apps. The cognitive affordances of taglines offered promises such as: "Safe care when you need it" (Min Doktor, 21 Oct 2019) or "Safe care in the mobile" (kry.se, 21 Oct 2019). Sensory affordances comprised the lending of symbolic attributes that constituted familiar aesthetics for the user: white coats, stethoscopes, serious faces together with a direct form of address and a clean design resembling public healthcare facilities. Two out of three apps, Kry and Doktor.se, use white and bright green colours, aesthetic considerations that borrow from the white and green coloured Swedish state-owned pharmacy *Apoteket*, thus lending the apps some of its credibility. These two apps also have crosses as their logos. Min Doktor has a red heart-shaped form with a white smiley face as its logo which – despite the colour association with the red cross – partly contrasts with the soberness of the other two apps. The sense of professionalism and credibility indicated by the sober aesthetics (cf. Nakamura 2008) was strengthened by the lack of banners competing for attention. Users are left with the feeling that this is not a commercial site. Instead, on occasion, advertising is made implicitly, i.e. when the symbol for Doktor.se's service "Pharmacy" is the logo of the pharmacy owned by the app company.

Another aspect aimed at establishing a sense of safety was how the services were described. Users were repeatedly assured that members of the medical staff were "experienced" and worked at "Swedish health centres or hospitals" when not working for the app. There were also many assurances that physicians "collect all the information needed to make a correct diagnosis" and that they "follow the applicable guidelines for all prescriptions" (Min Doktor, 28 Nov 2019).

What is not explicitly communicated within the apps, but can be seen on the websites, is that the apps also work with conversational agents, or

“emphatic chatbots” (kry.se, 24 Sept 2019), specifically on matters regarding mental health and in initial triage. Min Doktor offers the opportunity to chat with a chatbot; it is humanised and called “Elsa, your digital assistant”. Although studies claim that engaging in conversations with AI chatbots works well (e.g. Ly, Ly and Andersson 2017), the under communication in the apps suggests a fear that patients would find the idea of relating to a chatbot rather than a person unreliable or impersonal.

4.3 Personalisation and creating relationships

“Good morning Anna Sofia, how may we help you?” (Kry, 23 Oct 2019). When logging on to the Kry app at 08.48 in the morning, the user is appropriately greeted with a “good morning” and called by their first name. The time sensitivity and the use of the first name creates a feeling of having a personal relationship with the app and contributes to the informalisation of relationships between citizens and representatives of Swedish state agencies and experts that goes back to the 1980s (Löfgren 1988). This is a type of personalisation that must be understood as a discourse (West 2013) in which users are positioned not only as patients but as respected acquaintances or even friends. In a similar vein, cognitive affordances assure users that the app staff “are here for you and your family” (Kry, 23 Oct 2019).

All apps further facilitated the organisation of appointments and administration of the health care of family members. Such functional affordances materialise the history of the relationship between the app, the user (and sometimes their children) and healthcare providers over time, and work as a digital memory that contains information that personalises the app and makes it part of the user’s (family) healthcare history. This personalising feature was also present in the affordances to customise the apps by including personal information that would serve to improve the service and user experience. In Kry, this involves height, weight, blood pressure, allergies, nicotine habits and a specific health profile that is created based on the user’s answers to questions about their health (for credibility, the survey is said to be based on “one of the world’s most used health surveys, RAND-36”, 23 May 2019). It is presented as being in the interest of the user to offer personal information. This is conducted beforehand and is not related to the issue for which the user requires medical advice.

During the studied period, the apps’ implicit claims to a holistic approach also involved connecting the user to other commercial actors within more or less related areas. For example, tapping the Kry app’s button “Apotek” (*Pharmacy*) leads to two options: “Renew your prescription” and “Order medicines” (23 Oct 2019). By clicking on the latter option, the user

is directed to Kry's partner Lloyds Apotek (*Lloyds Pharmacy*), from which they could also order non-prescription products that the pharmacy sold and that were not necessarily connected to the care visit in the app (this was not an option in all apps). However, in 2019, the Swedish Medical Products Agency suggested that caregivers be included as one of the actors who cannot be granted permission to operate outpatient pharmacies (Läkemedelsverket 2019). Since this time, the links to pharmacies' general websites have been replaced by links to the user's prescriptions only.

The apps also integrate with their users in a more aggressive manner, demanding their attention through emails and push notifications, alerting users to messages within the app or sending news and product information to users. For example, after registering an account, Doktor.se sent us e-mails twice a month. The product information was quite general and related to the season so that during spring, for example, we received information about hay fever and in the autumn information about the autumn colds. Through these functional affordances – reinterpreted as services – the apps are given mandate to interact with the user also when the user is not using the app. In a sense, the user becomes a follower that is positioned as a valued friend with whom the app builds a lasting relationship and to whom the app sends its best offers.

The creation of relationships also lies at the core of the influencers' sponsored content. The association with particular influencers and their online personae with whom their followers and subscribers have formed relationships (Dhanesh and Duthler 2019) adds layers of authenticity and potential affective value to the apps. Influencers often marketed the apps by showing their vulnerability and cultivating relatability. They also explicitly emphasised how easy it was to talk to physicians over the phone, partly because they all are “very easy going” and “friendly”, thus convincing their followers to lower their threshold for seeking medical care (e.g. Ingrosso 2018).

Also, the functional affordances of the platforms used by influencers – such as YouTube and Instagram – play a part as they allow the influencers' subscribers and followers to leave comments. The apps are thereby included in the communities of the influencers and their fans, and comments on the apps are drowned in, but perhaps also associated with, the mainly positive and sometimes almost worship-like comments about the respective influencers. However, the commentary sections also render the use of influencer marketing somewhat unreliable. Not only is it difficult for the app companies to control the articulations of meaning made on the influencers' posts, it is also difficult to control the reactions of the subscribers and followers who may very well argue against the use of healthcare apps. Thus, the fantasmatic app narrative and its highlighted promises of accessibility, safety and personalisation were open to

contestation, which could certainly undermine efforts to promote the apps. To prevent this from happening, representatives of the app companies sometimes took the opportunity to answer critical commentators.² However, as shown below, criticism is also countered even when it is not explicitly levered.

5 RELATING TO PUBLIC HEALTH CARE

Many of the affordances that aimed to encourage users and direct them to using the apps highlight characteristics in ways that seem to compete with public health care. Certainly, the presentation and marketing of healthcare apps in Sweden have to be understood in light of the heated debate about private digital care that the deregulation in the welfare state has engendered (Carlsson 2020). In this respect, one strategic way to legitimise change and market app care is also to take control of the meaning production around the apps’ relationship to public health care by countering the expected criticism (cf. Lindberg and Lundgren 2019). In this section we discuss how the apps and their marketing material relate to public health care.

The pre-empting of criticism took place through various cognitive affordances, some of which have already been mentioned, such as the emphasis on the benefits of the digital regarding accessibility in space and time. However, it was also carried out more explicitly. On its YouTube channel, Kry published eight films called “Myths and facts about physician visits via video”. The films are just a couple of minutes long and in all of them the viewer sees a young white male wearing a white polo shirt. A sign in the lower left corner informs the viewer that he is a physician at Kry. The myths countered in the films are: 1) You cannot make a diagnosis without touching the patient, 2) Medical visits via video require more public funding than visits to health centres, 3) Doctors who work via video are not proper physicians, 4) Medical visits in a mobile app result in over-consumption of health care, 5) Digital health care drains the county councils of public funds, 6) KRY is only for young urban people, 7) Only hypochondriacs seek digital health care, and 8) Seeing a physician via a video call in a mobile app results in shorter queuing time and increased accessibility (kry.se, 23 Oct 2019). The chosen myths seem to be formulated with the public healthcare system and notions of a more traditional kind of health care in mind, and it is clear that the films are not only used to kill the myths, but to convey a message: app health care is just as good as traditional health care and even works to improve the situation for public health care.

² For example, on Bianca Ingrosso’s blog, ‘Samuel’, presenting himself as ‘working at KRY’, answers a commentator’s critical question about the costs for the county councils and the critical suggestion that taxpayers will lose on the app service in the long term (Ingrosso 2019).

Hence, out of the eight myths, all but one of them are firmly countered. It is only the last myth – apparently a myth created or at least frequently repeated by the app company itself – that the physician seems unable to contradict. Expressing satisfaction, he states that seeing a physician via a video call really does result in shorter queueing time and increased accessibility for all.

Labelling the criticism “myths” effectively works to delegitimise them. It may also be understood as part of a strategy in which practices of capitalism are reinterpreted as being helpful for the public healthcare system and for Swedish healthcare-seeking citizens in general. The strategy may be viewed as a countermeasure taken by the companies to pre-empt the potential contestation and criticism of the neoliberal choice reforms that have enabled these digital services (cf. Glynos, Speed and West 2015). As the criticism has sometimes been harsh, countering it is crucial in order to establish the apps as legitimate. It reinforces digital health care as the logical way forward. Thus, a central aspect is to undermine public health care as the better option, although – and importantly – any notion that there would be an antagonistic relationship between the apps and the public healthcare system is repeatedly rejected.

In this sense, the practice of pre-empting criticism ensures the continued enjoyment of the accessibility, safety and personalisation that the apps offer, and which are further associated with positively charged notions, such as patient choice, empowerment, individuality and freedom (cf. Lindberg and Lundgren 2019). By taking control of the expected criticism that threatens to disrupt the fantasmatic app narrative and the promises it gives, users can continue to enjoy the perks of accessibility, safety and personalisation in the way they are depicted in the apps’ own self-descriptions, without having to reflect on the wider societal effects of the healthcare practices that the apps give rise to, such as the costs for the various regions. The latter constitutes a common problem regarding public health care, which has experienced difficulty in achieving waiting time goals (Björk 2016; SOU 2019:42). An unquestioned link between app health care and the undermining of public health care would certainly discourage at least some citizens from using the apps – which was clear from the commentaries on Instagram and YouTube. Thus, the effort put into retaining the fantasmatic app narrative may be regarded as an important answer as to why the narrative proves to be so persistent (cf. Glynos 2008). Such an effort is needed because of the ethical dilemma that some users obviously identified between the notion of the free choice of care on which app health care is based, and the principle that those who are most in need of care should receive care first, which guides the public healthcare system (cf. Bergwall 2021). Another answer concerns the patient positions provided

by the fantasmatic app narrative’s focus on accessibility, safety, and personalisation.

6 POSITIONING THE PATIENT SUBJECT

The empirical themes not only promoted app health care through promises of accessible, safe, and personalised care. They also addressed the user in specific ways, encouraging particular forms of patient subjectivity. In this section we discuss the two interrelated aspects of patient subjectivity that emerged: the patient as a consumer and the patient as young, busy, and urban.

6.1 Consumers

Following the changes resulting from the choice reforms in recent decades, patients are increasingly being addressed in their role as *consumers* of health care (Szebehely 2000; Henderson and Petersen 2002; SOU 2008:15; Lindberg and Lundgren 2019; Carlsson 2020). This was also an overarching theme in the studied material; the apps were aggressively marketed, firmly establishing app health care as a consumer product. Encouraging patients to identify as consumers was achieved using a plethora of functional and cognitive affordances within the apps, including the design and content of interfaces. For example, as part of the affordance of accessibility, all apps have a start view after logging in where illness categories are listed and the user chooses an illness from this list. The Kry app even highlights illnesses that are “Currently common” (27 March 2019), just like many online stores do with their products. As part of the affordance of safety, the apps also publish app store ratings, patient satisfaction scores and user reviews, which would serve to reassure that the services are proven and popular. The latter were clearly selected by the companies and only showed overwhelmingly positive reviews (cf. Adams 2012; Lupton 2014c) that were in line with the fantasmatic app narrative. In influencer films and posts, app health care is marketed as a commodity and the app as being the best way to access this commodity. This becomes strikingly obvious as influencers sometimes provide vouchers that can be used at the sponsoring app company’s pharmacy. It is made even more clear when scrolling through the contents of an influencer’s profile, in which posts on app health care are published alongside other sponsored contents.

The apps’ services are described in the apps and the marketing material in such a way that users are compelled to adopt a consumerist mindset based on a discourse of “choice”, in which the subject is expected to weigh the pros and cons of different healthcare providers in order to make a decision, and ultimately identify with such decisions. Hence, the

subject “is defined, first and foremost, as *homo eligens*” (man choosing), as Bauman (2007, p. 61) puts it. Such notions of choice have been described as effective tools for the reorganisation of healthcare systems along neoliberal lines (e.g. Irvine 2002) and have been at the core of Western culture from late modernity onwards, in which choice ideologies and consumption technologies have offered lifestyle pedagogies, as it were, for “living a life that is both pleasurable and respectable” (Rose 2004, p. 86). In a sense, the promise of accessibility, safety and personalisation that was included in the fantasmatic app narrative addressed a rational user who would choose the app because it is the quickest, easiest, least expensive, and most modern way to receive care.

However, at the same time, and as highlighted by Rose (2004), the appeal targets the emotional aspects of consumption and addresses the users’ insecurities and fears. In this latter sense, the apps not only contributed to the establishment of new needs, but also to new notions of rights. Inscribed in a rights discourse, the accessible, safe and personalised health care promised by the apps was legitimated as being *more* than just a possibility. The rights discourse was, however, tempered, and users were encouraged to identify themselves not only as rightfully consuming what is in their personal interest, but as moral consumers, as it was stated that using the apps would ease the burden on the public healthcare system by saving “space and resources for both individuals and society at large” (Doktor.se, 26 Nov 2019). Thus, the individualism that is at the core of the discourses of “choice” and “rights” that permeate modern health care is partly articulated as a way of achieving moral solidarity. By positioning users as consumers, the apps therefore confirm and speed up the processes of consumerism taking place in health care (Irvine 2002). This positioning not only marks a boundary between digital app care and public health care. Users are told that as consumers of app care they would, paradoxically, both escape and help the public healthcare system, an argument that complements observations made by others (e.g. Norris 2012).

6.2 Young, busy, and urban

The apps’ visual representations of patients and employees tended to portray relatively young persons in their 20s, 30s or early 40s – or their children. Also, the influencers who had been sponsored to promote the apps were all quite young and predominately white adults. In quotes from former patients who were used to promote the apps on their websites, the theme of saving precious time is also closely associated with having busy lives and important careers, as in the following patient quote:

04.00 Monday morning and I have to constantly pee. I have all the signs of a urinary infection and know that I need medicine to make it stop. My

first meeting is at 08.45 – an important meeting that I cannot cancel or postpone. That’s when I remember mindoktor.se. At 06.00 I log on to their website and, to my surprise, I get an answer right away. At 07.00 everything is ready and I’m at the pharmacy at the central station taking my first pill. Thanks to this quick treatment I can attend my meeting and work as normal for the rest of the week (Min Doktor, 26 Nov 2019).

The cognitive affordances of this quote demonstrate how the app encourages identification with a self-motivated, ideal neoliberal employee who can get ill, be treated and attend a meeting at work at the same time (cf. Lordon 2014). Through articulating the app and its services with freedom from queues at public healthcare facilities, and indeed from the very condition of being ill, the demands of neoliberal ideology are effectively concealed. Instead the apps are presented as valued attributes of the ideal neoliberal employee. In that sense, the way in which the affordances of the apps are symbolised also works to sustain the grip of the neoliberal work ideology (Glynos 2008).

The focus on youth, busyness, and urbanity (the latter implied in the quote by the proximity to a pharmacy and referring to the central station) corresponds with results that suggest that young adults tend to appreciate accessibility more than continuity, and that younger cohorts are increasingly turning to alternatives to physical health care, such as digital care (SOU 2019:42). However, the strong focus on youth, busyness and urbanity is particularly interesting since it contradicts how public policy and commercial actors have presented digital health care. As the restructuring of public health care and the geographically uneven distribution of health care have gone hand in hand with a focus on citizen influence (Enlund 2020), digital technologies emerged as promising solutions. By “being independent of geography and enabling asynchronous contacts” (SOU 2019:42, p. 38), it has been ascribed the promise of solving the problems of demographic ageing, the long distances to physical healthcare facilities in Sweden’s rural areas due to the withdrawal of health care, and the difficulties faced by older people in transporting themselves in order to receive the quality of health care to which they are entitled (e.g. Skr. 2005/06:139; Lindberg and Carlsson 2018).

However, these categories were neither represented nor addressed in the material. Although Kry made efforts to counter the supposed myth that the apps were primarily being used by younger people from urban areas, none of the studied apps’ visual depictions portrayed older people as a patient category or highlighted the significance of the app for people living

in sparsely populated areas where distances to healthcare centres are long.³ In Kry's own *Quality report* for 2019, it reports that as many as 41% of users were aged 21–39 years and 32% were parents/guardians of children aged 0–15 years. Only 3% of users were over the age of 60.

The differences in this regard between policy documents and the apps are indicative of their different goals. While policy reports – whether these are Swedish government official reports or policy documents written by stakeholder organizations – are often written from within a discourse in which responsibility is taken for providing equal care throughout Sweden and the goal of the app companies is profit. It is therefore not in their interest to describe and address people in sparsely populated areas as consumers of app services, possibly because there are less of them. From the perspective of public policy makers, commercial apps of the type described here might be seen as a potential solution to a problem, but that problem should not be confused with the app companies' problems. It is possible that the representations of users are also describing what Carpentier (2011) called a “digital divide” created by the digitalisation of public services.

Technologies have been described as being produced with distinct user groups in mind (Woolgar 1990). By foregrounding patients as aware consumers, and as young, busy and urban, the healthcare apps showed a close affiliation with other types of lifestyle, health and self-tracking apps (e.g. Lupton 2018, 2012).

7 CONCLUDING DISCUSSION

Care has been described as a selective mode of attention, focusing or even cherishing some aspects (certain lives, illnesses, bodies, etc.), while excluding others (Martin, Myers and Viseu 2015:627). Employing Stanfill's (2015) discursive interface analysis and exploring healthcare apps for “the structures at work within them”, we identified what we called a fantasmatic app narrative to which all three apps and their marketing material contributed, and that worked to sell, as it were, the healthcare apps. Through functions, taglines, descriptions, and marketing material, the fantasmatic app narrative foregrounded the apps' ability to deliver accessible (in time and space, as well as financially), safe and personalised health care, characteristics that are typically highlighted as important in today's Swedish landscape of care (SOU 2019:42). On the one hand, the apps afforded users the opportunity to take the “path of least resistance” (Stanfill

³ With the advent of the COVID-19 pandemic, and outside of the scope of this article, this partly seemed to change, at least in the televised commercials, and older patients became more commonplace.

2015, p. 1066), urging them to ignore criticism of the apps, and guiding them from downloading the app to making an appointment with a physician. On the other hand, healthcare apps and their commercials also articulated ideal patient subjects by addressing and representing users in specific ways (Hutchby 2001, 2003).

The apps undoubtedly contributed to creating notions of both patients and health care. Through various mechanisms of affordance, including functional, sensory, cognitive affordances, the app narrative encouraged a personal everyday relationship with health care via the apps. In this sense, the studied apps both resembled and differed from other types of health apps such as the much-studied self-tracking apps (e.g. Pink and Fors 2017). There were some resemblances as they foregrounded young and seemingly healthy users who took personal responsibility for their health and well-being, and for whom illness seemed to be something transient and easily remedied. Like many health apps and self-tracking devices (cf. Lupton 2012; Sanders 2017), the studied healthcare apps also tended to facilitate the biopolitical aims of public health discourses by repeatedly suggesting the importance of accessibility and by suggesting that users also use the app for mild symptoms.

But while self-tracking apps seem to gain momentum from relocating health care to the individual, thereby facilitating the public health care, the apps studied seemed to encourage individuals to use healthcare appointments instead. Because the studied apps did not work as a *replacement* for healthcare appointments, but *provided* them, the focus on accessibility, safety and personalisation primarily worked to encourage the patients' close contact with the apps – and thus with using tax-funded health care.

There was a tendency to primarily represent patient users as relatively young, urban and noticeably busy and mobile, both within the apps and on the websites, and through the uses of influencers, who acted as trusted users with whom potential users could identify. Apart from a lack of representations of patients who were visibly ill or had visible disabilities, there was also a noticeable lack of representations of older and rural patients. Existing studies suggest there is a digital divide in which older rural adults tend to use the internet less (Berner et al. 2015). The studied apps' conditions of affordance tended to discourage both rural and older users from using the apps. Paradoxically, these groups are described as beneficiaries of, and empowered by, digital health care in policy and politics (Skr. 2005/06:139), which calls for further research into how digital healthcare technologies relate to ageing and rural patients (e.g. Katz and Marshall 2018).

As a growing number of studies in the field have acknowledged, digital health care and the patient positions it encourages can be viewed as

part of neoliberal consumerist ideology (e.g. Thomas and Lupton 2016; MacLean and Hatcher 2019). The studied apps were no exception, and they were clearly influenced by the design discourse of other commercial health, lifestyle, and self-tracking apps. An important finding of the study was the way in which digital healthcare apps were part of a wider digital landscape in which paid collaborations with influencers not only helped create goodwill, but also presented the information in new, clearly consumerist, highly youth-centric, and less controllable ways. By showing personal vulnerability and cultivating relatability, influencers partly took the edge off this consumerism. Overall, however, the collaborations suggested a specific form of market orientation that represented a clear departure from how health care has traditionally been presented, reinforcing a consumerist healthcare logic, transforming it – and the highlighted health, time, and safety – into commodities and selling arguments, and positioning patients as consumers. In this sense, the apps work as communicative agents (Lupton and Jutel 2015) that reinforce a view of illness and disease as (admittedly common) exceptions rather than intrinsic parts of life (Wainwright 2008). But while the increased accessibility of medical care through marketisation, digitalisation and personalisation clearly has its benefits, it may also lead to increased medical “needs” – articulated in the realm of a rights discourse (Frank 2000) that sits well with the Swedish free choice of care reform which, since 2010, has transformed the Swedish health system into a quasi-market (Bergwall 2021). Increased accessibility also implies greater surveillance opportunities, which is a central theme in the field of critical digital health studies (Lupton 2014b). Encouraging users to contact public healthcare facilities via apps means encouraging patients’ conditions to be registered in their medical records.

Regarding the second research question about how the fantasmatic app narrative was defended against potential criticism, a point of contention was the apps’ relationship to the public health care organised by the Swedish regions. On the one hand it was implicitly criticised for being slow, inefficient and out of date, and the apps therefore provided a much needed modern alternative. At the same time, the apps used the goodwill and credibility of public health care by borrowing from its aesthetics, emphasising that app physicians also worked in public health care, and that the apps would not compete with it but would relieve it.

Healthcare apps are good examples of the need to explore the affordances of digital healthcare devices. In a public healthcare system that is becoming increasingly digitalised, questions about the normative dimensions built into seemingly neutral digital technologies are important, as they may support but also counteract policy objectives. The present analysis could work as an example of how apps that are becoming increasingly enmeshed in mainstream health care certainly reach out and

affect relationships and identities outside of the digital realm; they encourage transformations of patient subjectivities and healthcare use. However, the analysis does not cover the experiences of users, for example, physicians and patients. It would be of great interest to further explore how the fantasmatic app narrative described in this paper is manifested, challenged, and negotiated in app users’ narratives about their experiences.

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