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## **An Ambiguous Health Education: The Quantified Self and the Medicalization of the Mental Sphere**

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*Abstract:* It is hard to deny that contemporary society is becoming increasingly medicalized. Mental health is likely the most medicalized sphere. The pathologization of emotions is entangled with the rise of a therapeutic culture. This article proposes the hypothesis that apps used to self-track different aspects of mental health and wellbeing represent a peculiar kind of pedagogical tool and a new engine of medicalization. The “quantified self” acts on reality with the conviction that a data-driven life can enhance one’s health status. The mechanisms that foster this attitude are gamification and quantification – two central features of mental health apps. We seek to demonstrate this through a content analysis of six of the most downloaded mental health apps focused on two different kinds of texts: the description provided by the app itself and the reviews written by its users. Our investigation reveals that these types of apps are giving rise to an idea of the subject which is separated from social factors. This de-politicization of health brought about by the apps strengthens the neoliberal idea of health as an individual responsibility, marginalizing any discourse on social justice. Therefore, this kind of health education appears at best ambiguous, if not controversial.

*Keywords:* quantification, medicalization, mental health, apps

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## **Introduction**

Beginning as a small movement of early adopters “The quantified self” has become a mass phenomenon. To varying degrees many of us self-track and self-measure using our smartphones, watches, and other wearable technologies. Our physical activities are monitored and transformed into data, which can be used to generate statistics and can be shared on social networks. We are able to run “Personal Analytics” on every aspect of our daily life: the number of steps we take, miles we run (how fast, at what grade), our heart rate, menstruations, sexuality, caloric intake, the amount and quality of our sleep, our productivity at work, our stress levels and mood. The term “the quantified self” was coined by Gary Wolf and Kevin Kelly, two editors from *Wired*, who founded the site [thequantifiedself.com](http://thequantifiedself.com) in 2008. The site’s slogan is “self-knowledge through numbers”. According to Wolf (2010), thanks to the enormous potential of data collection and statistical analysis offered by apps, we are able to self-measure with precision, as though we were a business, and correct our bad habits and errors of self-evaluation. In addition, we can store enormous amounts of data in cloud storage and share our results on social networks (Maturo, 2014). The philosophy of this website is loosely positivist, in both the general acceptance of the word and its philosophical sense. Indeed the quantified-selfers have blind faith in data as well as an elevated sense of optimism in technology.

Remaining within the ambit of the founders of sociology we could say that Max Weber’s analysis (1992) of the factors tied to the birth of capitalism is flipped with the model of the quantified self. Weber observed that, besides the Protestant ethic, the birth of the capitalistic model was tied to two factors: “the separation of business from the household, which completely dominates modern economic life, and closely connected with it, rational book-keeping.” (Weber, 1992, p. xxxv). Today, the quantified self uses the enormous calculative potential offered by apps to develop a form of personal book keeping made up of percentages, comparisons, and histograms. In this way, one’s personal life is managed through the powerful quantifications made possible by apps, as though it were an enterprise. Some features of this “entrepreneurial” vision are shared with health apps as well. Through our empirical research - that used content analysis as a method for analyzing several apps related to mental health - we show that “digital health” has many neoliberal attributes. Mental health is indeed represented as an individual attainment, disconnected from social and economic factors. In addition, some health apps enhance the

“quantitative” idea of mental illness, as delivered by the latest versions of the Diagnostic-Statistic Manual of Mental-Disorder (DSM), where diseases are increasingly defined according to quantity and duration of symptoms. Since it is extremely easy to make a self-diagnose of a mental illness through these apps, we argue that apps promote medicalization. In terms of social justice, this phenomenon raises serious worries. We run the risk of ignoring some major economic and social factors having an impact on human health and, therefore, of bracketing the “political” role of the State to address inequality. Therefore we are dealing with a very ambiguous empowerment of patients/individuals and a with a controversial example of health education. Alongside this, there is a new trend emerging on the wave of apps like My Mood Tracker, i.e. their ability to work as self-help devices, that is, as individual therapies for a better self-governance. In this case as well, we are experiencing forms of subjectivity that fit well into a neoliberal society.

One’s physical state and domestic life are managed using the logic of business planning. As we show here in this first section, the quantified self stimulates and accelerates certain social phenomena, such as the medicalization of mental health, its quantification and its gamification. In the second section, we demonstrate on the basis of sociological theories how practices of self-tracking and self-quantification are the most coherent and consequent expression of a society which is ever more dominated by an ideology of neoliberalism. In the third section, in order to prove our inferences, organizing our argument around the categories mentioned above – medicalization, quantification, gamification – we analyze the content of six popularly downloaded mental health and wellbeing apps.

### **Medicalization, quantification, gamification**

The Quantified Self is intertwined with three types of social phenomena, which to varying degrees have intensified in these years: namely medicalization, quantification, and gamification (Jutel & Lupton, 2014; Whitson, 2013). Conrad defines medicalization as the “process by which a non-medical problem is defined as though it were a medical problem or rather, in most cases, as a sickness or a disorder” (Conrad, 2007, p. 4). It is difficult to deny that our society is becoming more and more medicalized. Numerous conditions which were once considered “normal” are now considered pathological. To say it in a more ironic way: “Once upon a time, plenty of children were unruly, some adults were shy, and bald men wore

hats. Now all of these descriptions might be attributed to diseases – entities with names, diagnostic criteria, and an increasing array of therapeutic options” (McLellan, 2006, p. 627). Typically, medicalization has been promoted by the medical community (Illich, 1973; Foucault, 1976). Examples of medicalization are many and varied: pregnancy, addiction, ADHD, depression, bipolar disorder, sexuality.

As one notes, the mental health is the preferred target area for medicalization. The reason being that since states of mind cannot be measured with biomedical instruments, if certain emotions cause pain for prolonged periods of time they can be – depending on how they are described by the person – diagnosed as pathologies. It is not surprising then that Horwitz and Wakefield speak of the medicalization of sadness (2009). In addition to the medical community Conrad points out other engines of medicalization: Big Pharma, technology, Managed Care and consumers. Big Pharma contributes to medicalization through disease mongering, that is the “invention of illnesses” (Moynihan & Cassels, 2005). This is especially true in the Direct-to-consumers advertising done for pharmaceuticals with the obligation of prescription in the USA through the medical campaigns which raise awareness/sensitize about specific conditions (Delbaere, 2013). Technology contributes to medicalization by providing the possibility for ever more sensitive and sophisticated diagnostic tests that are able to identify the “risks” and “predispositions” to be medically treated (Maturo, 2012). Managed Care can push toward medical practices intended to save: it costs less to reimburse a bit of Prozac than years of psychoanalysis. The drive toward medicalization also comes from below: more and more consumers request medical treatment for conditions which previously were not considered to be pathologies (Furedi, 2004). In recent years, other concepts have emerged which give us a clear picture of some peculiar aspects of medicalization, namely biomedicalization (Clarke & Shim, 2011), pharmacologization (Abraham, 2010), genetization (Conley, 2011). At the same time, the discussion in the field of bioethics involves human enhancement, biomedical treatments aimed at optimizing performance - rather than curing insufficiencies. Another field of study which has emerged thanks to theories on medicalization is the sociology of diagnosis. As the starting point for almost all medication interventions, it is crucial to analyze the ways in which practices of diagnosis are social constructed (Jutel, 2009). For example, in the most recent editions of the DSM diagnoses are increasingly based on the number and duration of symptoms (Horwitz & Wakefield, 2009): “if five of nine symptoms last for longer than four weeks you should

see a doctor". As one can see, the quantitative factor prevails in the field of mental health (Jutel & Lupton, 2015).

Quantification is a central theme in the debate on sociological methodologies (Neresini 2015; Porter, 1996; Sauder, 2009). Though the debate on quantitative versus qualitative methods has been alive for decades (Bryman, 1984; Olsen & Morgan, 2005), the impact of quantification on society has been studied less. Despite being a constitutive feature of social organization "sociologists have been reluctant to investigate it (quantification) as a social phenomenon in its own right" (Espeland & Stevens, 2008, p. 402). This might be because "In a world saturated with numbers, it is easy to take the work of quantification for granted" (Espeland & Stevens, 2008, p. 411). For this reason, Espeland and Stevens (2008) propose a sociology of quantification that analyzes the evolution and the impact of quantification on social life in contemporary society. Today, the State, large bureaucracies, corporations, the stock exchange and research centers base their actions on statistics, measurements and calculations. Rankings, cost-benefit analyses and audits are created more today than ever before, making expertise and rigorous methodologies necessary. Moreover, "an expanding consulting industry provides examples of how numbers can constrain discretion and hold people accountable" (Espeland & Stevens, 2008, p. 420). This is linked to the idea that society is structured as a "world of scores rather than classes" (Fourcade & Healy, 2013, p. 568). Individual scores open and close social gates and strongly affect economic opportunities and life-trajectories. In the neoliberal economy: "market institutions increasingly use actuarial techniques to split and sort individuals into *classification situations* that shape life-chances" (Fourcade & Healy, 2013, p. 559). In the US, scoring technologies quantify credit risk: a number which is as important for the destiny of an individual as titles of nobility were during the medieval period because they determine one's access to credit. As such the system invites individuals to become "calculating selves" (Miller, 1992) capable of modifying and controlling the parameters determining their score through continuous and rigorous self-surveillance. This type of self-measurement requires very specific competencies which not all people possess, so "an advice industry (...) teaches how to manage (or game) one's credit score, or how to keep fees and premiums low" (Fourcade & Healy, 2013, p. 565). In other words, quantification allows the creation of standards, uniformity and classifications to which we are softly pushed to adhere. As Timmermans and Epstein put it: "Under neoliberal policies in globalizing economies, market and nonmarket actors thus rely increasingly on

standards to manage reputations” (Timmermans & Epstein, 2010, p. 77). Once quantification algorithms become codified and routinized their products are “reified” and become “real” (Desrosières, 2011). Numbers do not only represent reality, but produce effects on it (Austin, 1962; Espeland & Stevens, 2008; Maturo, 2015).

As noted above, for some time now, the situation regarding processes of quantification has changed radically. Today, mammoth Research and Development divisions are no longer necessary to produce large amounts of data: an individual with his or her smartphone is enough (Maturo, 2016).

We should note that many practices of quantification – when examined alone – can be very boring. It’s not so exciting to do household book-keeping, or to count how many steps you make in a day or during a run. According to marketers there is a method to successfully doing boring activities: make these activities fun. And this is exactly what gamification is: “Gamification, a term that derives from behavioral economics, refers to the use of game mechanics in traditionally nongame activities.” (Jagoda, 2013, p. 113). There are many expectations for gamification. Subverting a commonplace, McGonigal (2011) demonstrates how games should not be understood as an evasion of reality but rather as a way of intervening (efficiently) on reality. An action that allows one to modify aspects of reality with little effort. McGonigal demonstrates how gamification can effectively stimulate processes of collective collaboration in the form of play. In the past, many scholars have demonstrated how games have a strong cognitive value (Freud, 1920; Mead, 1932; Erikson, 1963). Freud (1920), with the example of his grandson and the spool, demonstrated that play allows us to represent and therefore understand events that happen around us when we are young – overcoming in this way our fears. For Mead (1932), games and play force us to anticipate the actions of others and serves as the mechanism by which we come to realize that we are part of a social reality. Erikson (1963), on the other hand, demonstrated the value of games of play in childhood learning. Within the framework of the quantified self, gamification has both a cognitive and a performative character/aspect. It allows us to do things with less effort. For example, we are able to run more if an app makes us believe we are being chased by zombies<sup>1</sup>. Of course, the use of incentives to aid in the realization of goals

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<sup>1</sup> The app *Zombies Run!* used by runners makes you believe that you are being followed by zombies and that the only way to save yourself is to run faster and longer. More than a million “players” have downloaded this app. Interestingly, races called “zombie runs”, in which some runners dress up as zombies, have become popular. The app has come alive, so to speak – or dead perhaps, since we are talking about zombies.

is nothing new. However within the context of digital technologies, gamification is associated with an enormous potential to quantify, store and analyze data. In addition, gamification establishes a form of self-discipline based on the “voluntary” internalization of practices which serve and are coherent with a regime of economic neoliberalism: “This quantification of the self feeds into neoliberal governance projects that promise to make daily practices more fulfilling and fun. Enabled by increased levels of surveillance (self-monitoring and otherwise), these projects use incentivization and pleasure rather than risk and fear to shape desired behaviours.” (Whitson, 2013, p. 167). In this context, there is no pastoral power that prohibits, nor is there any panopticon which monitors. (Foucault, 1977). On the contrary, we are seeing an “evolution” of the panopticon: subjects have internalized a perspective of self-surveillance and are willing and playfully promoting a lifestyle which is in line with consumer society (Barber, 2007). In our colored screens we self-measure as though we were the Research and Development department of an enterprise: “It’s not just that the landscape is sloped toward corporate interests, but that our own beliefs and activities are directed by corporate logic” (Rushkoff, 2009, p. 20). In addition, quantification and gamification have no qualms about sharing our most intimate personal data – physiological information – on social networks, inviting others to monitor us with likes and encouragement. Apps encourage us to take action and improve ourselves in an apparently scientific and rational way. Moreover, by acting on our motivations, they increase our “productivity”. Apps are thus self-help devices. One might say were moving from the panopticon to the “endopticon” (Maturo, 2015).

### **Forms of neoliberal reflexivity**

As mentioned above, it is our belief that the ever-wider adoption of self-quantification practices cannot be attributed simply to the constant broadening of possibilities which current technology places before us. On the contrary, we believe that these practices are one of the main manifestations of the particular cultural ethos which began to spread in the Western world after the Second World War and today goes under the name of neoliberalism. More precisely, we hold that self-tracking constitutes perhaps the clearest concretization of this ethos in anthropological terms, or in other words a kind of *manifesto* of what the individual should be and how they should behave. Before now many papers have been written, from

myriad different points of view, in which the authors discuss what can and cannot be understood by the term ‘neoliberal culture’. Needless to say, a careful examination of this kind of analysis would greatly overstep the aims and scope of this paper; nevertheless, we should note that the majority of these works have concentrated principally on the particular forms which neoliberalism has impressed on power relations, while much less frequently have scholars concentrated on the concrete effects these have had on subjects’ personalities (Dean, 1999; Rose, O’Malley & Valverde, 2009; Walters, 2012; Mori, 2014)<sup>2</sup>. What we aim to do, therefore, in this first section is list concisely some of the main consequences the neoliberal milieu has wrought on the structure of the self and demonstrate how it has prepared fertile ground for the technological devices enabling self-observation and self-analysis we will shortly examine.

In his course *The Birth of Biopolitics*, M. Foucault (2008) showed how the term neoliberalism should not be used to simply denote a school of economic thought but rather a veritable political rationality. According to Foucault, the consequences produced by neoliberalism on social life should not be interpreted as a spill-over effect of economics into other spheres of life – on the contrary, neoliberalism constitutes an organizing force on a general scale which, based on a specific validation criterion, aims to shape “the social, the subject and the state” (Brown, 2006, p. 693). It is well known that, for Foucault (2008, p. 30 onwards), the validation criterion used in the neoliberal vision coincides with the market rationality and with a particular conception of economic science elaborated by a series of US authors, the most noteworthy of whom is G. Becker<sup>3</sup>. According to Becker (1976, p. 5), economics is not distinct from other social sciences because of the subject of its analyses but due to its general approach, since it treats all human actions as the result of choices. Closer up, it conceives agency as the result of individual decisions regarding the use of resources and means which are insufficient inasmuch as they are alternatives, i.e. mutually exclusive. When conceived in this manner, economic science becomes a perspective for analysis applicable “to all human behaviour, be it behaviour involving money prices or imputed shadow prices, repeated or infrequent

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<sup>2</sup> A significant exception to this is found in P. Dardot and C. Laval (2009), in chapters 8 & 13.

<sup>3</sup> In actual fact the genealogy of neoliberalism traced by Foucault is much more complex. Recently, N. Gane (2014) showed that in Foucault’s reconstruction the work of two of the key minds behind neoliberal thought – L. Von Mises and F. Von Hayek – is noticeably absent. However, for Foucault (2008), as the American form of neoliberalism is doubtlessly the most radical and dominant, it is the form we have to confront.

decisions, large or minor decisions, emotional or mechanical ends, rich or poor persons, men or women, adults or children, brilliant or stupid persons, patients and therapists, businessmen or politicians, teachers or students” (Becker, 1976, p. 9). From the neoliberal perspective, human behaviour ranges across a series of spheres (work, family, education, hobbies, consumption, etc.), all of which can be described using the terminology of the market, where competitiveness, investment and instrumental action are the guiding philosophies (Read, 2009).

Like in all truth games, the form of political rationality we call neoliberalism designs and produces its own subject (Foucault, 1997, p. 281). The neoliberal subject is not simply a subject trying to satisfy their needs by engaging in simple commercial exchange. The neoliberal subject is first and foremost a subject who invests in himself and competes with others with the aim of a whole series of different types of profit (McNay, 2009). With Foucault’s renowned formula, the neoliberal subject is no longer a trading man but the “entrepreneur of himself” (2008, pp. 225-226). Therefore the neoliberal reality is one populated entirely by businesses, which move strategically following their own interests in line with different timeframes. From this point of view, neoliberal agency highlights a fractal nature (Gershon, 2011, p. 541). Individuals can be conceived as miniaturized versions of small-to-medium businesses, which in turn replicate on a smaller scale the forms of larger corporations. In this reality the size or nature of the subjects has no importance and everything which happens can essentially be described in terms of the business.

However, if this is true, it is also true that, in order to act as entrepreneurs, the subject needs a large input of useful information to allow them to plan their investments and attain the expected development of profits. As far as the individual is concerned, this basically translates as a strong accentuation of introspective tendencies. The principal characteristic of the neoliberal subject is a marked form of reflexivity aimed at exploring their own desires and aspirations, revealing their potential, their weaknesses and their margins for improvement, and, lastly, assessing the results of their performances.

In this task of self-observation and self-analysis constantly required by the neoliberal frame, the subjects find themselves supported by an enormous range of ‘professionals of the self’ (Nicoli, 2012). Psychologists, personal trainers, human resources experts and life coaches are all figures capable of supporting and augmenting the subject’s capacity for introspection. Similarly, all the electronic devices for self-quantification which we will shortly discuss share the same function as these professional

figures. However, as they are devices generally used by the subject in order to come to a deeper self-knowledge, they spur a further accentuation of the nature of the neoliberal self. If it is true, as Foucault holds, that in this neoliberal season all spheres of human behaviour can be conceived as markets where investment and competition are the watchwords, it follows that few – if not very few – relationships are viewed as non-instrumental. This is where the current blurring of the lines between public and private, between the job market and circles of friends and family, has arisen from: ever greater segments of production activities end up gravitating around the human and emotional qualities of individuals (Honneth, 2004, p. 467), while, on the other side of the coin, civil and private areas of social life are increasingly permeated and undermined by principles of individual achievement and exchange (McNay, 2009, p. 75)<sup>4</sup>.

In our opinion, all this leads to serious consequences for the creation and the form of contemporary introspection. In the traditional conception of the self, it is the relationship which spurs reflexivity. In the Meadian philosophy, the individual observes themselves thanks to the relationships they entertain with others. According to G.H. Mead, the individual needs somewhere to look from, an ‘outside’ position from which it can perceive itself, in order to create the self as an object. From this the concept of significant other is born: we turn to the significant others we have around us in order to initiate and maintain our objectivization (Adams, 2003, p. 232). The point, therefore, revolves around the significance of the other. In a world dominated by the principle of competition and made up almost entirely of strategic relationships, creating a reliable self-image based on our relationships with others becomes troublesome. This is not only because there is always a lurking suspicion that what others communicate to us about our self is constantly tainted by their own interests, but also because it is the very concept of relationship which, when viewed from a neoliberal perspective, must necessarily involve some form of reflexivity which originated in previous times. To put it more clearly, in the neoliberal frame, as we have seen, every relationship is characterized as the outcome of an individual decision, or, to put it differently, as the result of an investment strategy. This means that the moment of reflexivity cannot be something generated within the relationship but on the contrary is something which precedes it. In other words, from the point of view of

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<sup>4</sup> On this issue, see the observations made at the time by R. Bellah and colleagues in the study *Habits of the Heart*, which highlights the tensions and paradoxes implicit in the clash between a conception of people as ends in themselves and as instruments for attaining a goal (Bellah et al., 1985, pp. 124-125).

neoliberalism, it is relationships which are created (strategically) by reflexivity and not vice versa. Having established this, we can see what would appear to be the general function of all the self-tracking applications: not only produce knowledge about ourselves but produce reliable knowledge about ourselves, taking ‘reliable’ to essentially mean a form of knowledge which goes beyond relationships with others<sup>5</sup>. In our conclusions we will take up this matter again and attempt to demonstrate the implications it sheds light on, above all in relation to issues surrounding social justice. Below we will take into consideration how self-tracking practices allow us to see certain connections with other ways in which neoliberal culture manifests itself.

### **Apps and the self as an enterprise**

Self-tracking apps can be considered as a part of the material culture of a society (Miller, 2005). By analyzing the apps, we can therefore try to examine the characteristic aspects of a specific cultural system: in our case, a set of customs and beliefs linked to a more and more neoliberal social organization. As Lupton states: “apps are new digital technology tools, but they are also sociocultural products located within pre-established circuits of discourse and meaning” (Lupton, 2014, p. 610). Specifically, we are to show that some apps absorb, realize and encourage medicalization through quantification and gamification practices.

In order to examine these aspects, we carried out an analysis on six apps for mental health and wellbeing, all of them available on Google and Apple Store: MyMood, Headspace, SuperBetter, Habit RPG, WhatsMyM3, iMind and Mood. These apps are among the twenty most downloaded apps of their category. Our study examines two different kinds of texts: the apps’ commercial descriptions and the reviews provided by app users. For what concerns the market description, we focused on topics, approaches, use of text and imagery and details provided by the developer. Regarding the reviews, the focus is on the kind of language and tones used by the reviewers. As regards the methodology, the content analysis of documents on the web is still in its nascent stages. However, many methodological considerations have already been discussed (Murthy, 2008; Smith et al., 2012). The task of the discourse analysis is “to explore the relationship

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<sup>5</sup> As we will shortly reiterate, it is no accident that the QS slogan is “self-knowledge through numbers” and not “self-knowledge through relations”.

between discourse and the social construction of reality, or how discourse presents particular ideas that become dominant or taken-for granted” (Barker, 2013, p. 170).

Our study starts with the quantification theme, which is the important role of measurements on apps. Namely, the self-tracking modalities, the possibilities of analyzing data, the existence of different levels of difficulty or commitment, the production of number-based graphics and the building of rankings. Many mobile applications which can evaluate a lot of parameters linked to the wellbeing can be currently downloaded.

With MyMoodTracker app, you can judge your mood by using numbers (from 1 to 10), track how many hours you slept, your stress level, your energy, and write down the use of drugs and antidepressants and the physical activity performed. Moreover, you can save the collected data, export them in a spreadsheet and create graphics to summarize your psychophysical health. If one is afraid of forgetting to daily track the mood, MyMoodTracker allows to activate an alert to remind or a daily reminder. Some users consider this app – which was created with the aim of incentivizing people to track their well-being – as a real help for personality disorders. Analyzing the users’ reviews, it has been noted that the users master a biomedic language about mental disorders and that they highlight the great benefit of having the possibility to track the parameters through the numerical data: “Excellent good for bipolar. This does pretty much everything that a bipolar person needs in a tracking app. You can show mood via a wide range of emoticon and a 1 – 10 number. This is important because apps that give you 2 or 3 choices for mood are ridiculous; they’re simplistic rather than simple (...) I’m taking the app to my psych appointments” (Toofaboy, review from iTunes Preview). Furthermore, MyMoodTracker builds a “mood chart” (figure 1), the x-axis being the 24 hours in a day and the y-axis being the well-being level from 1 to 10. In order to better understand the histograms which show the bad and the good mood, the system builds some emoticons with sad or happy faces. Through this function – the so-called “History” – the QS can display the moments in which the mood has been up or down.

As already mentioned, the gamification practice consists in introducing some playful elements into monotonous activities so that these activities become easier to be carried on. A gamification example is the app for the “quantified meditation” Headspace (figure 2). This application encourages the user to take a meditation path – 10 minutes per 10 days with 10 total levels to be achieved – and monitors the results by verifying the gained benefits. Specifically, as understood by the commercial description of the

app, tracking one's meditation activities can bring immediate improvements to many aspects of life, including *relationships* ("People who practice mindfulness are five times more likely to behave compassionately towards others"), *health* ("Mindfulness was effective as anti-depressants in helping depression but with no side effects"); *lifestyle* ("Eating mindfully resulted in people eating 20% fewer calories"); *performance* ("Us study found that just four days of 20 minutes per day mindfulness training improved working memory and the ability to sustain attention"). On the website, many people share their stories about how mindfulness meditation has helped them to "jumpstart" their careers. Since "the practice of mindfulness calls for focused awareness in all one's daily activities" (Barker, 2013, p. 172), it proves to be an essential support in order to improve one's working efficiency. Users' language is ironic and caustic and, once again, rather biomedic. That is interesting since meditation is very often considered as an alternative to the official medicine: "I've always been the anti-hippy (...) Meditation, whether it wanted to or not, has been filed in my mind as 'hippy shit'. I realized that this advice is something I could apply to my anxiety" (Alison Stevenson, Headspace Blog: The guinea pig diaries).

Figure 1. App MyMood Tracker

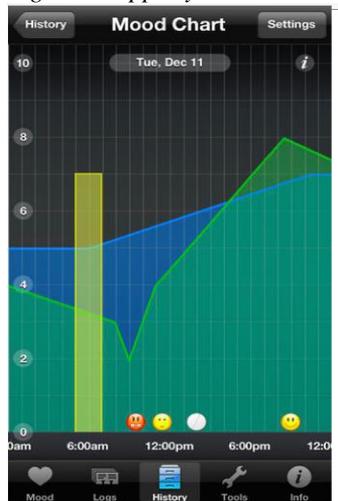


Figure 2. App Headspace



Gamification elements can be found both in the features and in the functions of this app. The meditation path includes interactive characters and the graphics is very functioning (figure 2).

Some reviews show, in addition to the already mentioned aspects, a tendency to prefer applications which, besides having curative aims, also present fun and pleasant features: "I bought this little app for my autistic child to use to relax (...) He thought it was just another game at first, BUT was pleased to discover basically something that he could use to help wind down from his day" (Vulnadia, review from Amazon.com). Moreover, if the user succeeds in meditating for many days in a row, it gains a reward. For instance, for 15 days streak on Headspace, you got a voucher for 1 month free access.

There are also apps which can motivate the users to increase their productivity, improving health and individual performances, by taking advantage of playful and recreational stimuli: SuperBetter and Habit RPG. Through SuperBetter we can choose a goal we want to work towards. As claimed in the commercial description, SuperBetter "Is just an awesome tool created by game designers who take the best of games and apply it to your real life so you can get stronger, happier, and healthier." This app encourages the users to break the bad habits (e.g. smoking) and get into good ones (e.g. physical activity). The users state how it is easier to complete certain practices with the help of gaming simulations: "Self-motivation is hard, but playing a game is easy." (superbetter.com player, from iTunes Apps store).

Habit RPG promotes and tries to make users develop new habits by presenting the real life as it was a game. Many areas can be managed through this application, such as health, work, school, household chores and many other aims. Furthermore, an avatar allows you to create a fantasy parallel world in which you can collect animals as a reward for achieving a goal, obtain random rewards which work as a stimulus and cast spells to challenge other users. Competitiveness among friends is also stimulated and if you forget a daily you lose points on the rankings (figure 3).

As regards *medicalization* - that is to say language extension and biomedic frames used for areas of interest which were not pertaining to the medicine beforehand - it concerns every analyzed app. Among the most popular and downloaded apps, many devices which can "diagnose" a mental disorder can be found.

Using WhatsMyM3, we can get, in just three minutes, a test about our level of depression, anxiety, bipolar disorder and Post-Traumatic Stress Disorder. By answering to a series of 29 questions, each question having 5

answer options<sup>6</sup>, you can calculate a score on your M3<sup>7</sup> value (figure 4) and keep a diary to monitor your improvements or your worsenings over the time.



iMind & Mood also allows users to obtain a feedback to find out how stressed they are and how likely they are to suffer from certain disorders (Anxiety Disorders, Depressive and Bipolar Disorders, ADHD (Attention-Deficit/Hyperactivity Disorder). Even in this case, quantification and medicalization go at the same pace: minimum number of symptoms per minimum number of weeks. This is a matter of the medicalizing look of the last three versions of the Diagnostic and Statistical Manuale of Mental Disorders which “today acts as the ‘psychiatrich bible’ by defining the criteria for an ever-increasing number of mental illness and disorders” (Rimke & Broch, 2011 p. 185).

In this way, the subjective perception of discomfort (illness) is medically recognized as an objective pathology (disease) (Maturo, 2010). The commercial description shows the attempt to label as pathologic

<sup>6</sup> Not at all/Rarely/Sometimes/Often/Most of the times.

<sup>7</sup> My Mood Monitor.

actually common feelings: “Does your attention wander frequently? Have others commented on your ability to focus your attention?”. Our mental life, considered before as a very complicated mass of deep impulses, repressed childhood traumas and failed sublimations, is represented through a comprehensible and ready-to-use format: “Tracking your mental health with iMind & Mood is as easy as answering nine mental health questions”. Due to the childhood ethos with which the neoliberal economy is identified, the patients-consumers cannot stand complex explanations and slow solutions (Barber, 2007). Therefore, the check-list stands in for the psychoanalyst’s couch.

There is no doubt that the implications connected to the new technologies on the mental health sphere are very deep “because these devices, the apps and related software (...) offer not only ready access to medical and health information on the internet but also new ways of monitoring, measuring, visualizing, and experiencing the human body” (Jutel & Lupton, 2015, p. 1). This is about a quantified body represented through statistics and algorithms which allow you to plan strategies, increase the performance and assess the results as if the subject was an enterprise. Therefore, a body which is built as if it was an enterprise, or rather an “embodied enterprise”, in which the mental health and the well-being are easily evaluated.

Thanks to the apps, or maybe due to them, the user is in charge of monitoring his own sense of normalcy (Horowitz & Wakefield, 2009). Moreover, this form of self-monitoring can be shared on the social networks, thus overturning the Foucauldian panopticon idea: the subject does not want to watch over everyone, in fact he demands that he is monitored and evaluated by everyone, not only as regards his external behaviour but also his mental states and physiological data. The intimacy becomes the extimacy: the panopticon becomes endopticon (Maturo, 2015).

## **Conclusion**

Having stressed the characteristics of wellbeing and mental health which in our opinion are the most significant as regards medicalization, quantification and gamification, as well as their contribution to the construction of the subject as entrepreneur of himself, we would now like to use this final section to briefly discuss a further, more general aspect of these devices, one which directly impacts the issue of social justice and health education.

Aiming at a detailed self-knowledge made up of numbers, backed up by a medical-scientific language and made fashionable through gamification, self-tracking applications hand us an individual self-image from which any kind of social-awareness-generating mould has been systematically erased. As we suggested in the first section, self-tracking leads to a kind of self-knowledge which we could say has been removed from our relationships with significant others. Similarly, the empirical analysis performed on the textual properties of the apps allowed us to show that, in the world they portray, the conditions of personal wellbeing and health depend entirely on the individual's agency and therefore become entirely their own responsibility. Nothing is more distant from these concepts than the idea that there could be a cause outside of the subject, out of his/her control. From this point of view, the apps are particularly instructive. As we observed earlier, by using them all that happens is that a problem of an eminently social nature is reconfigured as a medical-biological problem (Rose, 2007) – one which the market has a quick-fix solution to, whether a drug or perhaps a new app to help us manage our anxieties. It is not by chance that: “the increasing focus on individual responsibility and accountability has been occurring simultaneously with the dismantling of public services, including health care” (Rimke & Brock, 2012, p. 197). To put it under a social justice and health education perspective: “From the 1970s onward, the rise of both neoliberalism and the culture of therapy had a common theme: a focus on the “I” over the “we.” (Rimke & Brock, 2012, p. 197).

However, by shifting the load of responsibility from the way in which society organizes public life to the way in which individuals organize their own lives, the neoliberal ethos is carrying out a highly depoliticizing operation<sup>8</sup>. As Brown notes (2006, p. 704), “as neoliberal political rationality devolves both political problems and solutions from public to private, it further dissipates political or public life: the project of navigating the social becomes entirely one of discerning, affording, and procuring a personal solution to every socially produced problem”. In this manner, not only is the market confirmed as the only category which can be used to interpret and experience social relations, but all issues regarding social justice are swept away, thus denying any form of legitimacy to the analyses which place social organization as the defining element at the root of various forms of inequality and, more especially, of their replication.

Building on our theoretical and empirical analyses, conducted on digital mental health and social justice, we think that the following observations can be drawn:

1. apps for mental health outline an individualised subject, that is separated from any social determinants of health;
2. apps for mental health confirm the “quantitative” and reductionist approach to mental illness (that is, mental illness as a syndrome based on quantity and duration of symptoms), as advanced by the last three versions of the DSM;
3. apps promote medicalisation, thus fostering an important component of psychocentrism, that is individualistic and psychologistic explanations of social phenomena;
4. apps for health can work as self-help devices (e.g. My Mood Tracker) which favor therapy culture and an ambiguous health self-education (Furedi, 2004) and a tendency to pathologise normal aspects of everyday life (sadness, mood swings, anxiety);
5. health education is restricted to a relationship between quantified targets and individual ‘psymotivations’;
6. it follows that these apps act as professionals of the self, with the task to strengthen the integration and productivity of self in the neoliberal society.

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While this article is the result of several discussions between the authors, Antonio Maturo has written the sections *Introduction* and *Medicalization, quantification, gamification*; Luca Mori has written *Forms of neoliberal reflexivity*; while Veronica Moretti has written *Apps and the self as an enterprise* and *Conclusion*.

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## References

- Adams, M. (2003). The reflexive self and culture: a critique. *British Journal of Sociology*, 54(2), 221-238. doi: 10.1080/0007131032000080212
- Austin, J.L. (1962). *How to do things with words*. London: Oxford University Press.
- Bandura, A. (1977). Self-efficacy: toward a unifying theory of behaviour change. *Psychological Review*, 84(2), 191-215. doi: 10.1037/0033-295X.84.2.191

- Barber, B.R. (2007). *Consumed. How Market Corrupts Children, Infantilize adults and swallows Citizens Whole*. New York: Norton.
- Barker, K.K. (2014). Mindfulness meditation: Do-it-yourself medicalization of every moment. *Social Science & Medicine*, 106, 168-176. doi: 10.1016/j.socscimed.2014.01.024
- Becker, G. (1976). *The Economic Approach to Human Behaviour*. Chicago: University of Chicago Press.
- Bellah, R., Madsen, R., Sullivan, W. M., Swidler, A., & Tipton, S. M. (1985). *Habits of the Heart. Individualism and Commitment in American Life*. Berkley-Los Angeles: University of California Press.
- Binkley, S. (2011). Happiness, positive psychology and the program of neoliberal governmentality. *Subjectivity*, 4(4), 371-394. doi: 10.1057/sub.2011.16
- Brown, W. (2006). American Nightmare. Neoliberalism, neoconservatism, and de-democratization. *Political Theory*, 34(6), 690-714. doi: 10.1177/0090591706293016
- Bryman, A. (1984). The Debate about Qualitative and Quantitative Research. A Question of Methods or Epistemology. *The British Journal of Sociology*, 35(1), 75-92. doi: 10.2307/590553
- Clarke, A., & Shim, J. (2011). Medicalization and Biomedicalization Revisited: Technoscience and Transformations of Health, Illness, and Biomedicine. In B.A., Pescosolido, et al. (Eds.), *Handbook of the Sociology of Health, Illness, and Healing* (173-200). New York: Springer.
- Conley, D. (2011). Learning to Love Animal (Models) (or) How (Not) to Study Genes as a Social Scientist. In B.A., Pescosolido, et al. (Eds.), *Handbook of the Sociology of Health, Illness, and Healing* (527-542.) New York: Springer.
- Conrad, P. (2007). *The Medicalization of Society: On the Transformation of Human Conditions into Treatable Disorders*. Baltimore: J. Hopkins University Press.
- Dardot, P., & Laval, C. (2009). *La nouvelle raison du monde. Essais sur la société néolibérale*. Paris: La Découverte.
- Dean, M. (1999). *Governmentality: Power and Rule in Modern Society*. London: Sage.
- Delbaere, M. (2013). Metaphors and myths in pharmaceutical advertising. *Social Science & Medicine*, 82, 21-29. doi: 10.1016/j.socscimed.2013.01.020
- Desrosiers, A. (2011). Buono o cattivo? Il ruolo del numero nel governo della città neoliberale. *Rassegna Italiana di Sociologia*, LII/3, 373-397. doi:10.1423/35257
- Erikson, E.H. (1963). *Childhood and Society*. New York: Norton.
- Espeland, W.N., & Stevens, M.L. (2008). A Sociology of Quantification. *European Journal of Sociology*, 49(3), 401-436. doi: 10.1017/S0003975609000150
- European Commission (2014). *Green Paper on Mobile Health*.
- Foucault, M. (1976). Crisis de un modelo en la medicina? *Revista centroamericana de Ciencias de la Salud*, 3, 202-19.
- Foucault, M. (1977). *Discipline and punish. The Birth of the Prison*. New York: Random House.
- Foucault, M. (1997). The Ethics of the concern for self as a practice of freedom. In id. *Ethics. Subjectivity and Truth* (pp. 280-301). New York: The New Press.
- Foucault, M. (2008). *The Birth of Biopolitics. Lectures at the Collège de France*. New York: Palgrave.
- Fourcade, M., & Healy, K. (2013). Classification Situations: Life-chances in the Neoliberal Era. *Accounting, Organizations, and Society*, 38, 559-572. doi: 10.1016/j.aos.2013.11.002

- Freud, S. ([1920], 1991). Beyond the Pleasure Principle. In A., Richards (Ed.), *On Metapsychology: The Theory of Psychoanalysis* (275-338), London: Penguin.
- Furedi, F. (2004). *Therapy Culture*. London: Routledge.
- Gane, N. (2013). The emergence of neoliberalism: Thinking through and beyond Michel Foucault's lectures on biopolitics. *Theory, Culture & Society*, 31(4), 3-27. doi: 10.1177/0263276413506944
- Gershon, I. (2011). Neoliberal agency. *Current Anthropology*, 52(4), 537-555. doi: 10.1086/660866
- Honneth, A. (2004). Organized self-realization: Some paradoxes of individualization. *European Journal of Social Theory*, 7(4), 463-478. doi: 10.1177/1368431004046703
- Horwitz, A.V. (2010). Pharmaceuticals and the Medicalization of Social Life. In D., Light (Ed.), *The risks of prescription drugs* (pp. 92-115). New York: Columbia UP.
- Horwitz, A.V., & Wakefield, J. (2009). The medicalization of sadness. *Salute e Società*, VIII(2), 49-66.
- Illich, I. (1973), *Limits to Medicine – Medical Nemesis: The Expropriation of Health*. London: Marion Boyars Publisher Ltd.
- Jagoda, P. (2013). Gamification and Other Forms of Play. *Boundary 2*, 40(2), 113-144. doi: 10.1215/01903659-2151821
- Jutel, A. (2009). Sociology of diagnosis: A preliminary review. *Sociology of Health and Illness*, 31(2), 278-99. doi: 10.1111/j.1467-9566.2008.01152.x
- Jutel, A., & Lupton, D. (2015). Digitizing diagnosis: a review of mobile applications in the diagnostic process. *Diagnosis*, 1-8. doi: 10.1515/dx-2014-0068
- Light D. Maturo A. (2015), *Good Pharma. The Public Health Model of the Mario Negri Institute*, New York, Palgrave.
- Lupton, D. (2014). Apps as Artefacts: Towards a Critical Perspective on Mobile Health and Medical Apps. *Societies*, 4, 606-622. doi:10.3390/soc4040606
- Lupton, D. (2015). *Digital Sociology*. London: Routledge.
- Maturo A., Setiffi F (2016). The Gamification of Risk: How Health Apps Foster Self-Confidence And Why This Is Not Enough. *Health, Risk and Society*, 17(7-8), 477-494. doi: 10.1080/13698575.2015.1136599
- Maturo, A. (2012). Social Justice and Human Enhancement in Today's Bionic Society. *Salute e Società*, XI(2), 15-28.
- Maturo, A. (2014). Fatism, Self-Monitoring and the Pursuit of Healthiness in the Time of Technological Solutionism. *Italian Sociological Review*, 4(2), 157-171.
- Maturo, A. (2016). Doing Things with Numbers. The Quantified Self and the Gamification of Health, *in Journal of Medical Humanities & Social Studies of Science and Technology*, 7(1), 87-10.
- McGonigal, J. (2011). *Reality Is Broken. How Games Are Making Us Better and How They Can Change The World*. New York: The Penguin Press.
- McLellan, F. (2007). Medicalisation: A Medical Nemesis. *The Lancet*, 369, 627- 628.
- McNay, L. (2009). Self as Enterprise. Dilemmas of Control and Resistance in Foucault's The Birth of Biopolitics. *Theory, Culture & Society*, 26(6), 55-77. doi: 10.1177/0263276409347697
- Mead, G.H. (1932). *Mind, Self, and Society*. Chicago: Chicago University Press.
- Miller, D. (2005). Materiality: An Introduction. In D., Miller (Ed.), *Materiality* (1-50). Durham: Duke University Press.
- Miller, P. (1992). Accounting and Objectivity: The Invention of Calculating Selves and Calculable Spaces. *Annals of Scholarship*, 9(1/2), 61-86.

- Mori, L. (2014). A momentary lapse of the reason. Neoliberal subjectivity and recreational drug use. *Italian Journal of Sociology of Education*, 6(3), 70-103. Retrieved from [http://www.ijse.eu/wp-content/uploads/2014/10/2014\\_3\\_5.pdf](http://www.ijse.eu/wp-content/uploads/2014/10/2014_3_5.pdf)
- Moynihan, R., & Cassels, A. (2005). *Selling sickness. How drug companies are turning us into patients*. New York: Nation Books.
- Murthy, D. (2008). Digital Ethnography. An Examination for the Use of New Technologies for Social Research. *Sociology*, 42(5), 837-855. doi: 10.1177/0038038508094565
- Neresini, F. (2015). Quando i numeri diventano grandi: che cosa possiamo imparare dalla scienza. *Rassegna Italiana di Sociologia*, LVI 3-4, 405-431.
- Nicoli, M. (2012). Io sono un'impresa. Biopolitica e capitale umano. *Aut-Aut*, 35(6), 85-99.
- Olsen, W., & Morgan, J. (2005). A Critical Epistemology of Analytical Statistics: Addressing the Sceptical Realist. *Journal for the Theory of Social Behaviour*, 35, 255-284. doi: 10.1111/j.1468-5914.2005.00279.x
- Porter, TM. (1996). *Trust in Numbers: The Pursuit of Objectivity in Science and Public Life*. Princeton, NJ: Princeton University Press.
- Read, J. (2009). A genealogy of homo-economicus: neoliberalism and the production of subjectivity. *Foucault Studies*, 6, 25-36. Retrieved from <http://rauli.cbs.dk/index.php/foucault-studies/article/viewFile/2465/2463>
- Rimke, H., & Brock, D. (2012). The culture of therapy: Psychocentrism in everyday life. In M., Thomas, R., Raby & D., Brock (Eds.), *Power and Everyday Practices* (pp. 182-202). Toronto: Nelson.
- Rose, N. (2007). *The politics of Life Itself. Biomedicine, Power, and Subjectivity in the Twenty-First Century*. New Haven: Princeton U.P.
- Rose, N., O'Malley, P., & Valverde, M. (2006). Governmentality. *Annual Review of Law and Social Sciences*, 2, 83-104. doi: 10.1146/annurev.lawsocsci.2.081805.105900
- Rushkoff, D. (2009). *Life Inc*. New York: Random House.
- Sauder, M., Wendy N.E. (2009). "The Discipline of Rankings: Tight Coupling and Organizational Change." *American Sociological Review* 74(1):63-82.
- Smith, A. et al. (2012). Body Perceptions and Health Behaviors in an Online Bodybuilding Community. *Qualitative Health Research*, 22(7), 971-985. doi: 10.1177/1049732312443425
- The Quantified Self. Counting every moment. (2015, June 5). *The Economist*. Retrieved from <http://www.economist.com/node/21548493>
- Timmermans, S., & Epstein, S. (2010). A World of Standard but not a Standard World: Toward a Sociology of Standards and Standardization. *Annual Review of Sociology*, 36, 69-89. doi: 10.1146/annurev.soc.012809.102629
- Walters, W. (2012). *Governmentality: Critical Encounters*. New York-London: Routledge.
- Weber, M. (1992). *The Protestant Ethic and the Spirit of Capitalism*. New York: Routledge.
- Whitson, J. R. (2013). Gaming the quantified self. *Surveillance & Society*, 11(1/2), 163-172. Retrieved from: <http://library.queensu.ca/ojs/index.php/surveillance-and-society/article/view/gaming/0>
- Williams, J., Seale, C., Boden, S., Lowe, P., & Steinberg, D.L. (2008). Waking up to sleepiness: Modafinil, the media and the pharmaceuticalisation of everyday/night life. *Sociology of Health and Illness*, 30(6), 839-855. doi: 10.1111/j.1467-9566.2008.01084.x
- Wolf, G. (2010, May 2). The Data-Driven Life. *The New York Times – Sunday Review*, May 2nd: MM38. Retrieved from [http://www.nytimes.com/2010/05/02/magazine/02self-measurement-t.html?\\_r=0](http://www.nytimes.com/2010/05/02/magazine/02self-measurement-t.html?_r=0)