

Planet-app: From Psycho to Neuropower. An Analysis of the Link Between Artificial Intelligence and Everyday Life

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Abstract

Digitization has become the new materiality of the 21st century, but we access it through small symbolic icons called "apps", which constitute a new skin of the world and the main gateway for artificial intelligence into daily life. Despite its relevance, the social sciences have paid little analytical attention to this phenomenon. Our article fills this gap examining certain aspects of the implementation of apps in everyday life. First, we define what an app is and its relationship with artificial intelligence. We then offer methodological notes and an autoethnographic study of various apps, especially those related to health. Finally, we show that the transversal logic characterising these apps has one of its most important effects: the emergence of a new type of power and social control called "neuropower".

Introduction

We are witnessing the birth of a new materiality. Contrary to what has been argued (Hui 2016), this has less to do with information than with so-called "digitisation." This phenomenon has become so significant that some authors have suggested that we are already living in a new era of humanity: the digital condition (Suárez, 2023). There are two reasons for this. On the one hand, there are already demographic cohorts who have been born, raised and educated under the complete dominion of this condition. On the other, practically all our relationships seem to be mediated by some kind of element pertaining to this domain (Authors, 2024a). For Suárez (2023), digitisation is the greatest engineering achievement ever undertaken by humankind. It consists of a twofold operation: first, it involves the conversion of any format in which an object of our reality is constituted into a sequence of bits that can be stored and reproduced with ease; and second, it features the transformation of that material during use, thereby offering the ability to perform actions that were not possible in the original form. Hence, processes and phenomena that previously existed in isolation or distinctly are optimised, simplified and interrelated, leading digitisation to impose a materiality characterised by the miniaturisation and shrinkage of space and time.

However, this phenomenon remains invisible and inaccessible. Digitisation operates at a molecular level that slides beneath our feet or flies above our heads. It is elusive and ungraspable (Zuboff, 2019). No matter what the experts are saying on social media, and even contrary to what many scientists are warning, we do not manipulate data. We do not produce it, nor do we engage with it directly. There is no immediate access to the digital. Our relationship with this realm is mediated: between those sets of bits and our everyday activities there is an omnipresent yet invisible mediator, and one which represents, in its own right, the new skin of the world. We are talking about "apps": the myriad of applications that we have in our mobile phones, computers, watches, cars, airports, hospitals and more, and which modulate, influence and determine the sequence and flow of our day-to-day existence.

Social Sciences has begun to analyse this subject from various perspectives. Firstly, there are numerous analyses of the specific operational mechanisms of certain applications, such as Facebook, Instagram, TikTok, etc. (García-Mingo & Sádaba, 2023; Marcos Fernández et al., 2024; Authors, 2024b). Notable

among these are studies examining the link between “apps” and health (mental and/or physical) (Bittner, Highfield & Thompson, 2026; Ruse, Schraube & Rhodes, 2025) and those focusing on their use in emergency situations, such as the Covid-19 pandemic (Pandit, Radin & Quer et al., 2022). Secondly, in recent years there has been a proliferation of studies exploring the impact of “apps” on the definition of their users’ subjectivity and on the creation of sociocultural frameworks (Gandini, Gerosa, Giuffrè et al., 2023; Issenveler, 2023; Razinsky, 2026). Thirdly, there is a body of literature examining how non-digital elements are integrated and linked with digital ones (Natarajan, Li & Park, 2026; Weydner-Volkman, 2026). Finally, there is considerable interest in the economic impact of implementing “apps” across different sectors of the economy (Theisen, Kiesling & Munger, 2022).

Several common themes emerge throughout this literature. A fundamental aspect involves an interpretation of digital technologies (mental health apps, social media algorithms, generative AI, digital platforms, etc.) as more than mere passive tools. Instead, it is argued that they actively reshape practices, cognitive processes, social relationships and business models. A second aspect emphasises the tension between technical efficiency and human or contextual complexity. Thus, there is often a shared concern regarding the mismatch between algorithmic or digital logic (standardised, quantifiable, automated) and the complex, subjective, situated or unpredictable nature of human phenomena (mental health, self-awareness, early years education, business internationalisation, etc.). A third dimension highlights the user’s subjective experience as the focal point of analysis. In this regard, the focus is placed on the experience, perception or agency of users (patients, educators, consumers, developers) in relation to technology, whether to describe how they adopt it, how they resist it, or how they are shaped by it. Similarly, it is emphasised how “apps” give rise to new forms of inequality or exclusion. Finally, it should be noted that the literature pay attention to how interface designs, metrics and underlying logics promote certain values (individualism, efficiency or decontextualisation) whilst obscuring or discouraging others (interpersonal understanding, reflexivity or participation). In summary, the literature on ‘apps’ emphasises how they redefine key concepts (care, knowledge, education, the market, etc.) and how their social impact depends on a complex web of relationships between technical design, human subjectivity and sociocultural context.

Our article is situated within this interest in the redefinition of certain concepts and practices brought about by “apps”. Specifically, we present an autoethnographic study of health-related apps that examines how the logic imposed by “apps” on our everyday lives gives rise to a new type of power relationship. To this end, the first pages describe what apps are and how they are linked to artificial intelligence. The article goes on to present methodological notes on our work, outlines the logic of apps, and concludes by explaining how one of the most important effects of this logic is the emergence of a new kind of power and form of social control that, echoing the proposals of several authors, we have dubbed “neuropower.”

1. What is an app?

An app (short for “application”) is a neologism with two clear meanings. The first is an everyday definition: the word frequently alludes to an icon, a logo, a circle, perhaps a square, or a widget... whose interaction enables us to act or to carry out certain possibilities. In other words, we understand the term mainly in relation to pure action. These logos or icons therefore symbolise a point of contact on the surface of a screen, within reach of our finger or hand, or even of our voice. Behind this attractive interface there lies an immaterial commodity with a special characteristic: its consumption is governed not exactly by the laws and values of the economy, but instead by those of perception (Miller & Matviyenko, 2014). Thus, an app is something that operates within an economy that is more symbolic than material. The second meaning is a purely technical conceptualisation. An app is the structurally sophisticated outcome of the work of engineers and mathematicians who, since the Second World War, have been developing the possibilities of digital technologies to an unimaginable extent (Broganara, 2022).

However, from the perspective of Social Sciences, both responses are insufficient, for they are confined to contemplating the phenomenon in terms of its technical or economic condition and overlook the sociocultural and symbolic logics that its existence and use unfold. For this reason, and echoing the proposals of Bruno Latour, we define an app as a mediating mechanism: an operator that links our everyday actions and thoughts to an underlying world of hidden flows of bits; that is, to that new materiality that digitisation supposes. A mediator is an element that links entities to one another in a visible and tangible way, offering the chance for something unexpected to enter the relationship, modifying it and generating unpredictable effects (Latour, 2007). Hence, an app is clearly a mediator that has become hyper-developed, both in the number of objects that characterise it and in its use. It is estimated that even for a “young” technology like the iPad, more than 45 billion apps have been developed that can, in some way or other, operate on it. Another significant example is Google Android’s Play Store, which has registered more than 50 billion downloads of apps (Goggin, 2022).

Our analysis precisely concerns this widespread diffusion and social use of apps, which have become what Knorr-Cetina (1999) calls an “epistemic culture.” That is, through their mediating activity, they create and deploy sets of practices, knowledges, small tactics and everyday arrangements, ideas and symbolic loads through which we produce and validate knowledge about our reality and the way that it is defined. This infrastructure has at least four key characteristics. First, it exhibits limited functionality and high modularity. Apps are characterised by focusing their action on a specific task or activity. They operate by means of small modular programs designed for particular purposes. Some studies (Scolari, 2018) suggest that this modularity is one of the principal reasons for their success, as it allows users to personalise their experience according to entirely individual needs. Second, they offer an elegant interface and attractive design. The idea is to match the profile and experience of a particular user, making them appear intuitive and easy to use. User-friendliness is undoubtedly a key factor behind a successful app. Third, most apps depend on Internet connectivity and “cloud” infrastructures to function. This enables them to access large amounts of data and to offer more complex features than they would if depending solely on the possibilities of the local device. This clearly creates a dependency on third parties and entails a loss of exclusivity over the data being handled. Finally, apps compile large amounts

of information about users: from geographic location to leisure preferences and contacts on social networks. In other words, they *datafy* everyday life. This data is used for a highly specific purpose, and one that is characteristic of symbolic capitalism: to personalise the user experience, to offer targeted advertising and, in some cases, to create detailed user profiles that can be exploited for commercial or even political ends. More recently, app data has converged with a new technology that has made it possible to analyse such vast amounts of information through the correlated overlapping of all kinds of personal data: artificial intelligence.

2. Apps and Artificial Intelligence

Artificial Intelligence (AI) entered our everyday lives practically from the very first moment of its implementation, through the small icons we call apps and the various functions they perform on our devices. As a result, a closed and self-reinforcing circuit has been created between digitisation, app development and the implementation of AI. Google Earth is considered one of the earliest examples of this triad (Miller & Matviyenko, 2014). This app enables users around the world to access vast quantities of geographical data processed by an AI system in the digital cloud. Within this logic, we find personalisation and optimisation of the user experience that has grown to previously unimagined levels thanks to this new technology. Its use enables user preferences and behaviours to be learned and this, in turn, continuously feeds back into the configuration of the app. For instance, we observe that Tinder and other dating apps use machine-learning algorithms to determine which of a user's photos are most successful for the app's purpose and therefore placing them in the top positions in a kind of datafication of sexual-affective value (Duportail, 2019). A third example is the way AI boosts apps by enhancing their affordances. These functionalities extend and optimise human capabilities, as in the case of Amazon, which uses visual recognition to datafy our images, automatically categorising their content and linking them to users with similar interests.

These examples illustrate how the development of AI has boosted the mediating role played by apps. They are no longer mere iconic objects. They have come to be viewed as relational agents: they connect us with oceans of data stored in clouds both near and distant, and they modulate the action of our hands as well as the receptivity of our senses. Through such actions, the device that hosts the app becomes an extension of our body. Hence apps, enhanced by AI, redefine what a given device does and raise questions that warrant in-depth social analysis. These questions have to do with the new relationships between production, consumption, market governance and the validation of techno-scientific knowledge. Those small, *friendly* icons have become synonymous with mobility and digital ubiquity, linking our preferences in real time with those of millions of other people to deliver a subtle recommendation, whether on a map, in our social relationships or in the photos we are most likely to find pleasing. In fact, these relationships have extended beyond the devices that host them, insofar as they create networks of connections involving hundreds or thousands of such devices and, ultimately, have turned digitisation into a medium or ecosystem inhabited by people, technologies and other living beings.

In what follows, we will try to describe the main social consequences and effects arising from the intensive use of apps, paying a special attention to power relations.

3. Methodology

3.1 Autoethnography

The empirical material used for our analysis was collected through several autoethnographies conducted by the authors in 2025. Autoethnography is defined as a research procedure in which the researcher’s everyday experience is used as data to analyse and explain a specific phenomenon (Adams et al., 2015). The use of ethnography in our work served a dual purpose. On the one hand, the researchers sought to record personal experiences of using certain digital applications. On the other, special attention was paid to identifying behaviours that, in the aforesaid usage, are performed automatically and with little reflection. Our work also aligns with what some authors call “technography.” While it is widely accepted that ethnography, in any of its varieties, is concerned with how cultural, social and symbolic patterns shape and sustain human relationships and social life, technography addresses the same phenomena from the perspective of human–technology connections (Jansen & Vellema, 2011; Kien, 2008).

3.2. Data Collection

The apps were chosen for this study after interviewing various experts who, based on their professional experience, assessed which had been especially driven by artificial intelligence. Accordingly, the majority selected were those related to health matters. The reasons were as follows: a) these types of apps were among the first to become popular on the market several years ago and therefore have a long history in programming and user interaction, and have acquired considerable complexity due to the implementation of AI; b) they have a very high number of users; and c) research carried out on them employs vast economic resources and sector-specific expertise. Indeed, alongside military apps, they have the highest rates of innovation and annual updating. The following table presents some of the apps reviewed and shows how they are classified according to their functionalities:

Type of App	Specific Apps	Relevance for Selection
Voice Recognition Software	Dragon NaturallySpeaking, Speechnotes, Google Docs Voice Typing	Allow text or commands to be dictated without typing
Adapted Keyboards and Mice	Big Buttons Keyboard, for people with motor difficulties who require larger and more visible keys	Facilitate physical interaction with computers or mobile devices
Exoskeletons	Ekso Bionics, ReWalk Robotics	Enhance mobility
Augmented Reality (AR) Glasses	Google Glass Enterprise Edition, Vuzix Blade	Provide visual assistance
Smart Hearing Aids	Resound Smart 3D, Starkey Thrive	Improve hearing
Activity and Health Monitors (Wearables)	Fitbit, Apple Health, Garmin Connect	Detect signs of fatigue, stress or cardiovascular issues, and suggest breaks or exercise
Cognitive Training Programmes	Lumosity, Elevate, CogniFit	Mental agility

3.3 Analysis

Thematic analysis was applied to the ethnographic material (Braun & Clarke, 2006). This began with familiarisation with the material recorded in the field journal. From there, themes were constructed based on eight types of entry: a) description of the app; b) usage pattern; c) effects of its use; d) notifications received; e) observed effects; f) mechanisms for interaction with other users; g) expert knowledge provided by the app; and h) general thoughts and reflections during use. Analysis of the journal material was conducted collectively by all authors using the qualitative data analysis software Atlas.ti, version 24.

4. Planet App: from Psychopower to Neuropower

Our account is organised into four main sections. The first describes the basic and general characteristics of health apps, our main object of analysis. The second defines the common logic that characterises these apps. In the third, we show how this points towards a shift in the paradigm of power and control that defines our present. Finally, we describe the format this takes and its possible consequences.

4.1 The app-lication of health

As several studies point out (Miller & Matviyenko, 2014), apps supported by or developed within the field of health began to occupy an increasingly important place in our everyday lives thanks to their expansion in the sphere of care provision. These apps are usually classified according to a very simple criterion: those aimed at patients and those used by practitioners (Alonso-Arévalo & Mirón-Canelo, 2017). Among

the former we find tools: a) for the self-control of chronic diseases (diabetes, hypertension, obesity, etc.); b) for controlling the intake of medication; c) for planning medical appointments; and d) for promoting healthy lifestyle habits. Among the latter, we find mechanisms: a) for training and education (books, scientific journals and bibliographic searches); b) for use in consultation (medical calculators and apps related to preventive activities); and c) for comprehensive care (combining various utilities such as consultancy tools, calculators, health alerts and training).

Health apps represent a major change to the doctor–patient relationship. They tend to be oriented more towards the latter and enable near-total personalisation of their healthcare process. They are considered important because they have reduced individual healthcare costs; they offer greater control over personal health; they improve the quality of care offered by practitioners by enabling more individualised access to patient information; they enable more refined patient monitoring; they provide access to tools that support clinical decision-making; and, ultimately, create greater efficiency by reducing bureaucratic processes in care and treatment, optimising the follow-up of patients with chronic diseases, and intensifying communication with patients and other professionals.

Some authors (Menéndez, Arias & Haidar, 2020) argue that the expansion of app use in healthcare entails the transformation of certain control and power relations. The classical conceptualisation of these relations has been dominated by the Foucauldian notion of “biopolitics.” This concept arises from a very particular rationalisation of the problems that phenomena characteristic of a set of living beings constituted as a population pose for governmental practice: health, hygiene, birth rates, longevity, races, and so on (Foucault, 2010). Thus, birth and death statistics, early psychometric measurements, and calculations of risk were among the earliest control devices operating in a biopolitical register, seeking cheap, efficient management of the population and of individual behaviour. From this definition, which has been extensively analysed in the social sciences and humanities, we retain one very specific point: it is articulated around a central construct called “population.”

Apps, however, change this conceptual landscape. Their use shows that they no longer revolve around this cornerstone and that we are confronted instead with something new, as we will show in the following section. Nevertheless, the gradual disappearance of the “population” construct is not new. Apps appear to consolidate a development that, as suggested by Rose (2006), began with the rise of biomedicine. This emerged as an increasingly individualised form of medical practice that does not require a population-based categorisation of the individual or patient. With biomedicine came the first fully personalised vaccines and treatments that respected the somatic idiosyncrasies of the patient without considering variables correlated with similar patients. As Rose (2006) notes, the notion of population has gradually become obsolete with the rise of a new breed of medicine that establishes a direct equivalence between life and genetic code, operates from the epistemic foundations of genetics, and takes DNA as its primary reference or field of action. Given this identification, population becomes an unnecessary concept devoid of operational heuristic value. Apps have merely accelerated this process of decline.

4.2 App Logic

Apps share three common denominators:

a) They operate as a form of augmented reality. Any app, whether one of those listed in the previous sections or one that appears by default on a computer is an icon-device that augments a fragment or portion of some aspect of our most immediate reality. Its use resembles that of a microscope by allowing us to see things that are hidden from the normal perception of our senses. Some of the apps examined that very clearly illustrate this characteristic include Augmented Reality Glasses (Google Glass Enterprise Edition or Vuzix Blade) or specific applications such as Yuka, a free app used to scan any food or pharmaceutical product and decipher its labels. Its function is to reveal health benefits or risks and to recommend healthier alternatives. Also noteworthy are Smart Hearing Aids (Resound Smart 3D, Starkey Thrive), text-enlargement software (ZoomText, Big Launcher) and widely used applications such as Google Maps and Waze. All of these enable the creation of a type of artificial cognition with the following characteristics:

- Miniaturisation. An app enables access to minute details of that fragment of reality which would otherwise be inaccessible or unknown.
- Multiplication. Its connection with other devices multiplies its informational capacity and action. An app is, above all, a node of connections to other apps, databases, user experiences and so on.
- Multifactorial. It draws on and is enriched by many different sources.
- Real-time modulation. Apps, especially those dedicated to health, such as those designed to track the spread of the Covid-19 virus, receive information and update themselves almost in real time.
- An app is defined through an algorithmic operation that is designed to predict and alter the future course of an event: modulating the voice, improving vision, etc.
- As the previous point suggests, an app regulates and guides courses of action for the user. In other words, it becomes an assistant with an ethical function because it determines behaviours and thoughts.
- An app places heterogeneous areas of reality on the same plane. That is, it can connect the experience of someone working in a group at a given moment with that of someone driving through a far-off landscape or enjoying a leisure activity at home.

In short, apps provide access to a portion of reality that is augmented and enriched in its practical details for the person using it. They represent a window onto a part of something that would otherwise be hidden or simplified for the user. Good illustrations of this are Yuka and MyRealFood. Thanks to these apps, the labels or barcodes on the food we buy in the supermarket immediately connect us to health-related questions concerning ingredient quality, the types of macronutrient in each product, or the calories in them, based on databases that are continuously updated by developers, other users or food brands. With this emerging information, the consumer makes decisions in real time: buying the product, returning it to the shelf, or comparing it with an equivalent product from a competing brand to purchase the item that is best adapted to their nutritional health needs or preferences. In all three cases, the action taken is modulated by an event that did not exist seconds earlier: the rapid connection between the

consumer/user, the product and the app. Thus, the capitalist reality of the supermarket is augmented and intensified by the health-related reality that complements, frames and conditions the act of purchasing.

Figure 1: Yuka App

[insert image 1 here]

Source: Yuka, 2024

The screenshot from this app clearly shows how access to an extremely specific portion of reality is amplified, a portion that would otherwise be obscured. Such access brings us into the universe of cosmetic properties, such as endocrine disruptors, allergens and irritants, and others. Knowledge of these, together with the app's own assessment, guides our behaviour by either encouraging or discouraging consumption depending on their connection with health parameters.

b) The essential operation of every app is the creation of profiles. Today, this statement has become a systematic fact that anyone can observe. We experience it constantly when we log into Netflix, Amazon or any of the apps included in our analysis. Particularly striking examples include Muscle Booster and Plan Workouts, which are used to plan personalised training programmes for use at the gym or at home and are based on creating profiles according to weight, body type, available time, daily activity, and so on. Alongside these, virtual activity and health monitors stand out: Fitbit, Apple Health and Garmin Connect, and of course cognitive training tools like Lumosity, Elevate and CogniFit. Finally, albeit with no direct relation to the health or care context, apps such as Tinder, Instagram and TikTok, as well as adaptive online learning platforms like Coursera, Udemy and Khan Academy operate in a similar manner. Profiling differs from other types of social operations in three very evident dimensions:

- They are generated by algorithms or artificial intelligence. They do not use fixed categories to classify individuals; rather, they rely on the premise that an individual acting within an app will always share characteristics with another (Lury & Day, 2019). Hence, a profile is not the result of objective individual characteristics, whether measurable or not, but of the "relationality" established between individuals using a certain app. A profile therefore refers more to the interpersonal than to the intrapersonal dimension. It is not a substitution of the individual with something else, such as a statistical calculation, but a recombination of individual traces or fragments that we generate through daily use (Bruno & Rodríguez, 2022).
- To describe this individual conceptualised through their fragmentation, some authors draw on the notion of the "dividual" (Bruno & Rodríguez, 2022). While classical social and human sciences characterised the individual through elements of unity (social class, language, subjectivity and so on), the dividual emphasises fragmentation, which is no longer considered loss, deficiency or mutilation. The dividual is characterised by its divisibility and recombination.
- This profile, constituted from dividual fragments, can be used to evaluate the app user's assemblage as part of a broader system, one that ultimately defines the app in general (a specific job, the music

we want to listen to, the film or book we are searching for, or anything similar). This alignment is expressed through scores and rankings.

The generation of profiles produces individuals and, paradoxical as it may seem, these represent the highest degree of individualisation that can be attained in the health domain. The person using an app to deal with a particular health issue is not being assessed on the basis of a population-level statistic but through the recombination of their own data with that of other users presenting similar characteristics. A clear example can be seen in apps that monitor health parameters generated on the basis of the physical activity we do. Fitbit, Garmin Connect and Huawei Health are some of the most popular apps of this kind. These operate on the basis of the intensive and extensive accumulation of personal data, but only that relating to a specific aspect of physical fitness optimisation: heart rate, maximum oxygen uptake, weight, height, sports practised, duration, calories burned, and others. This personal information, in interaction with the app's activity, translates the movement of our body into data whose fragments, when grouped into clusters, generate individuals. Our identity or the reasons why we exercise matter for little. The app does not inquire about socioeconomic status or other socio-structural characteristics. Its interest lies exclusively in the agglomeration of partial, fragmented data about each user. It articulates these fragments and returns personalised messages of congratulations about our improved performance over the past week, all based on parameters such as the average for people of our age, gender or favourite sports. Figure 2 presents the Garmin Connect interface. This app is designed to interact with our body and datafy various parameters related to physical and psychological condition (calories burned, sleep quality, stress level and so on). As shown, this data, in combination with medical knowledge and statistics extracted by recombining data from multiple users, provide an assessment and evaluation of our mental and physical fitness and prescribe courses of action to optimise both aspects in the near future.

Figure 2. Garmin Connect App

[insert image 2 here]

Source: Garmin Connect, 2024

c) Apps operate in alignment with what Nikolas Rose (2006) calls "ethopolitics," in contrast to the Foucauldian notion of biopolitics. The former is a practice or exercise of government that focuses on regulating the behaviour of individuals or groups through the management of their values and ways of life. Instead of centring on the action and administration of biological life, ethopolitics is concerned with how people are governed and how they self-govern in terms of their moral and ethical conduct. This concept assumes that power is exercised not only through coercion and force, but also through the inculcation of certain values and norms that people internalise and reproduce in their everyday lives. For this author, there is an ethopolitical imperative linked to the rise of biomedicine that establishes the obligation to engage in permanent self-optimisation of our capacities as living organisms. This principle is claimed to have extended across the entire social fabric, such that self-optimisation of our capacities in any dimension has become a defining feature of our historical, political and social reality.

The apps of our research impose on the user a regime of self-management in which they learn to handle its functionalities, use it on a daily basis, solve problems that come up, or self-optimize some relevant function of their everyday life, such as choosing a book, buying an electrical appliance, managing their health, arranging work in groups, and so on. However, we describe this ethical principle as “weak” insofar as it establishes a line of action oriented towards the future, which is defined and imposed as the most desirable, but ultimately leaves its imposition subject to the user’s final and relative decision and their contextual characteristics. And the most significant aspect is that this exercise is performed without any explicit appearance or presence of an authority or power imposing the imperative of optimisation, as would be the case with biopower. We find examples of this in Calorie Tracker Planner, as well as the aforementioned Yuka. The logic underpinning these applications is to improve people’s diet on the basis of different goals set by the user (losing weight, gaining muscle mass, eating better and so on), until they gradually become quasi-expert nutritionists who are advised exclusively by the app. The ethopolitical principle appears in the very imposition of a health goal (in this case, specifically nutritional), which leads us to think, act and relate to food in highly specific ways that, *a priori*, appear to arise exclusively from our own criteria and decisions: the user chooses their diet, ponders whether to buy certain items, and decides whether to swallow nutrients in liquid or solid form to optimise their health in line with their chosen goals. Our ethos as a sporty, fit or healthy person thus emerges through small, subtle modulations that apps invite us to undertake at our own free choice.

Figure 3. Yuka App

[Insert image 3 here]

Source: Yuka, 2024

Again, the Yuka app is a good example of an exercise in guidance and advice concerning which products are, or are not, suitable for healthy living. This therefore entails an imposition of a health objective. However, as the app’s own blurb says, the idea is to help people “make the right choices”, and the final decision lies with them, thus constituting a weak ethical principle. Hence, apps guide the course of our actions without, apparently, limiting our freedom in the slightest.

Augmented reality, profile creation and the weak ethical principle are the main dimensions that characterise app logic and have profound sociocultural effects which point, for example, to the creation of new relations of control and power.

4.3 The Psychologisation of Power

The creation of profiles through the intelligent datafication by apps of our tastes, preferences, feelings and behaviours highlights the insufficiency of the notion of biopolitics for explaining how people and communities are currently managed. As a result, in recent years some authors have emphasised the role of this process in the “conduct of conduct”, an exercise that no longer operates through confinement but through open and interconnected spaces. Rather than resorting to punishment, this process encourages “free” exposure; and does not aim to shape and control bodies but instead acts upon the psyche

(Deleuze, 2025). Indeed, Han (2025) and Stiegler (2020) argue that we are living in the era of psychopower, which consists of a playing field in which struggles revolve around the management of mental processes such as memory, attention and imagination. Through various *psychotechnologies* (neuromarketing, coaching, emotional intelligence, positive psychology, and others), large corporations establish standards and new canons that govern our individual and collective behaviour (Stiegler, 2020).

Similarly, it may be argued that the apps we have examined present three major characteristics. First, they operate as appendages or end-stations of the major corporations that design them in order to directly and immediately access our everyday reality. Second, their functionality is designed to lock people into the webs of interests of these international actors. Third, this capture is not produced through direct access to the individual body (anatomo-politics) or the species (biopolitics), but through a mediator that acts on people's psychic processes. We are therefore witnessing the birth of a new neoliberal grammar in which the psyche is targeted as the last bastion accessible to economic exploitation for the extraction of capital (Han, 2025). This psyche is used to constitute individualised subjects who are guaranteed that happiness and freedom are found through a constant exercise of personal management, in the physical and mental exhaustion produced by the relentless pursuit of success, in frenetic and continuous consumption, and in these ceaseless efforts to optimise our psychic capacities (Han, 2025).

There is no doubt that the logic of apps contributes to the efficacy and functioning of this grammar. Indeed, we consider it to be its core logic. Apps offer an augmented reality that enables the generation of vast amounts of individualised data about countless aspects of our daily lives; they act across many platforms at the same time and leave traces everywhere; they generate elements for building profiles that feed large corporations; and they also offer weak ethical principles that users can access easily, fluidly and with almost real-time updates. The immediate consequence of all this is obviously the opening of a space of action in which, on the one hand, our psychic capacities are constantly at stake, and on the other, the continuous optimisation of those capacities becomes indispensable. However, though it might seem paradoxical, our inquiry suggests that app logic eludes, or is not fully encompassed by, the notion of psychopolitics or psychopower. There is no doubt that apps have become more widespread and have moved on from the sphere of health that is strictly centred on the body to a broader terrain that includes virtually all of our psychic potentialities: memory, stress, mental training, calculation and many others, as well as social relationships such as teamwork, friendship and love. However, we have detected something that escapes this new grammar of power, namely a tension that places us in the terrain of what we will call, in the following section, "neuropower."

5. The Emergence of Neuropower

As we have seen in the previous analyses, a common element across all apps is the emergence of an ethical principle of self-optimisation. This is not based simply on the idea that using an app allows more efficient or faster action. As illustrated directly by apps related to memory or teamwork, the initial premise is that the human being is a resilient and adaptable creature, capable of self-intervention in real

time and in any situation in order to reshape and improve themselves. The psyche guided by digital apps is thus assumed to be a ductile dimension.

The mediating nature of apps means in essence that they can intervene in and work upon this plasticity. This idea, in fact, comes from knowledge within the field of health. Without such plasticity, an app would be nothing more than a calculator. It is through its self-adjustment via AI architecture and design that this exercise of self-intervention appears. A clear example is found in the fitness apps offered on so many social platforms and as already mentioned: they accompany us at any time of the day, advise us, offer individualised plans and much more, and they do so for two reasons: a) their repeated use situates us permanently within the logic of self-adjustment, which seeks constant behavioural, affective and psychological optimisation; and b) we agree to enter this logic because we performatively confirm our ductility in such reiterated self-intervention. Thus, technology becomes necessary for our *improvement* as workers, patients, partners, students or whatever. This emphasis on the ductility and plasticity of psychological shaping is not a neutral conceptualisation. On the contrary, it is linked to a “neuro” culture that has taken root in the social mindset through the technological and digital expansion of expert knowledge from the health field via apps.

Several years ago, Rose (2006) analysed the image of the brain as the governing element of the organism in explaining societal behaviour. Gradually, with the massive development of the neurological sciences, this metaphor intensified and gave rise to that of the nervous system. This includes the encephalon but extends to the spinal column, neuronal circuits, axons and neurons, and areas such as the viscera. Generally, the focus on the *neuro* aspect relates to our network of nervous components, which have at least two essential qualities: on the one hand, they adapt and learn with relative ease; on the other, as a whole they are modifiable and changeable. From here, the idea of plasticity migrates to our entire understanding of the human being (Malabou, 2019). The formation of a “neuro” culture (Neidich, 2013; Sardamov, 2012) constitutes a new set of relations that constitute another kind of social management that we call “neuropower.” This concept reflects a new focus of sovereignty: neuronal plasticity. Health apps no longer normalise and govern populations and bodies, nor do they govern the psyche in a generic manner. Instead, they mobilise brains and nervous systems.

According to Neidich (2013), neuropower has three defining components: one refers to the notion of subjectivity, another to work and the third to action on the encephalon. Each of these corresponds to a relevant scale in the everyday life of the individual, and together they establish a coherent totality that characterises the experience of the twenty-first-century person. First, Neidich proposes that subjectivity, as we understand it, is a retrospective illusion that we build based on the establishment of a predetermined, or highly plausible, virtual future. In other words, through the principle of self-optimisation we can imagine diverse futures that allow changes and remodelling in our subjectivity, which is no longer defined by looking to the past, as in most classical approaches in the social and human sciences, but by looking to the future. Second, work, the most important activity in everyday life, is something that is commonly understood as a cognitive horizon and therefore plays a key role in the creation of these futures. It acts as a scenario of anticipation from which we can act. Finally,

neuropower, as a concrete governance technique, focuses on modulating the prefrontal cortex, acting upon our memory, planning and frontal-lobe attention by modifying their circuits through mere exercises of repetition. Thus, the aesthetic elements of apps are very important in this neural direction, since they generate effects in the form of perceptual habits that stabilise neural learning and synaptic connections. The aesthetic architecture of apps therefore normalises and homogenises sensory and perceptual experiences in large numbers of subjects. It is, therefore, an exercise in the distribution of the sensible (or perceptible), a kind of management or governance that divides places and forms of participation in a shared world by establishing modes of perception (Rancière, 2013). While in the classic biopower the notion of the norm was a very important one for its exercise, and in psychopower the notion of emotion appeared, in neuropower the pivotal idea is that of the mark or trace. The aim is to create lasting imprints in the nervous system. It is no longer a question of adapting the brain to the outside world, but rather for these marks to serve for the brain to become the outside world. Continuing this line of thought, authors such as Kroker (2023) speak of a vampiric metaphysics behind apps such as Yelp and Google Maps, which reduce the complex architecture of desire to a simple set of nodal sites, while others such as Camera + and Instagram mediate our aesthetic field through the possibilities offered via the small screen of the mobile phone.

However, our investigation shows that this definition needs to be corrected. Neuropower, *de facto*, refers to access to and permanent management of the plasticity of our nervous system, using app activity as the mediating mechanism. Thus, the management of this plasticity involves: a) adapting a behaviour or daily pattern of conduct to the feedback provided by an app; b) accessing an augmented reality that is packed with details and connections that interact with our nervous system and compel it to generate some form of response; c) operating according to a profile that we constantly modify, create and recreate, and which in turn offers models of activity to our nervous system; and d) acting with a future-oriented horizon for optimising our physical and mental potential. In other words, always defining our actions and thoughts in terms of a future that perfects the present and improves the past.

Evidently, apps are governed by algorithms. Therefore, this management of the nervous system's plasticity follows the rules established by this algorithmic reality. In other words: mathematisation, comparison between individuals, and the homogeneous projection of future courses of action. This means understanding that access to the aforesaid plasticity does not occur in a naïve or rudimentary manner, but on the basis of a specific logic. Consequently, the marks that are sought and the shaping of plasticity are carried out from that angle and not from any other. Thus, it is not too far-fetched to claim that neuropower entails two essential characteristics. First, it signals access to the plasticity of the nervous system and the attempt to create marks within it through the action of a specific mediator, namely apps. Second, this action presents a pattern or diagram of activity that is inherent to algorithmic logic.

Neuropower does not replace psychopower or biopower. It subsumes them. There is no denying that operations of psychopower and biopower still exist or can be defined. However, the key to our analysis lies in recognising that new technologies have emerged in the present which deploy everyday uses and

practices that configure new relations of control and power. We have argued that the first of these are apps, which reinforce a control device called neuropower. This raises the paradox that, if we want to understand how it operates, instead of looking directly at our nervous system, its ultimate arena of action, and examining the marks left there, we must look elsewhere, outward, and focus on the mediating mechanisms that make it accessible. In short, toward that new skin of the world that apps represent.

5. Conclusions

Apps are far more than an icon or symbol on the screens of our digital devices. The way they behave opens a space of symbolic economy and meaning that links a phenomenon as important to our present as digitisation with the immediacy of our everyday life. In this sense, they operate as mediators that incorporate, within a single reflex arc, the universe of our daily actions with the huge galaxies of corporate data and interests. Therefore, the interface of these devices is far more than a tool serving our personal motives or private desires. It constitutes an entire social space-time of movement, a new reality with which we are permanently entangled. That space-time deserves analysis in its most particular manifestations; that is, each app warrants in-depth sociocultural analysis in order to unravel how it operates, how it connects subjects with databases and huge corporate infrastructures, as well as with other apps and individuals, and how it positions the individual as a subject defined by all this activity. However, they also demand a global analysis that describes and interprets them as a meaningful and inherently idiosyncratic totality operating in the constitution of our social reality.

Our investigation has moved within this framework and concludes that apps deploy two dimensions that are unavoidable for Social Sciences. On the one hand, they entail the deployment of a whole new logic of interaction and connection between human beings and their surrounding reality. Within this logic we find three characteristics: a) the generation of an augmented reality, which intensifies our interaction with detail and the minute; b) the creation of profiles, which change the way we understand our positions as subjects in digital activity and platform-mediated interactions; and c) the configuration of a weak ethical principle, which formulates desirable futures through which we reinterpret our present and past. Apps therefore shun any understanding that characterises them simply as instruments or mere outcomes of the uses and practices of software fragments or algorithms. On the contrary, they open profound sociocultural effects that point toward the transformation of our everyday life. One of these effects is the emergence of new forms of control and power. Just as the icon of an app operates beyond the frame of the screen that contains it, we can now affirm that these relations of power are no longer limited to the logic defined by biopolitics or, more recently, by psychopolitics. They rightfully point toward the constitution of neuropower.

Declarations

Author Contribution

All three authors were involved in designing the research, analysing the data and drafting this text. The entire research project was coordinated by Francisco Tirado

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References

1. Adams, J., and C. Ellis. 2015. *Autoethnography*. Oxford: Oxford University Press.
2. Alonso-Arévalo, J., and J. A. Mirón-Canelo. 2017. Aplicaciones móviles en salud: potencial, normativa de seguridad y regulación. *Revista Cubana de Información en Ciencias de la Salud* 28(3):145–162.
3. Bittner, K., K. Highfield, and N. Thompson. 2026. Digital technologies for early childhood assessment and evaluation: emerging implications in a GenAI world. *AI Brain Child* 2(8). doi.org/10.1007/s44436-026-00032-8
4. Braun, V., and V. Clarke. 2006. Using thematic analysis in psychology. *Qualitative research in psychology* 3(2):77–101. <https://doi.org/10.1191/1478088706qp0630a>
5. Brognara, R. 2022. *How and What Marketing Algorithms Think*. Cambridge: Cambridge Scholars Publishing.
6. Bruno, F., and P. M. Rodríguez. 2022. The Dividual: Digital Practises and Biotechnologies. *Theory Culture and Society* 39(3):27–50. 10.1177/02632764211029356
7. Deleuze, G. 2025. *Desert Islands: and Other Texts, 1953–1974*. London: Semiotext(e).
8. Dillon, M. 2015. *Biopolitics of Security. A Political Analytic of finitude*. New York: Routledge.
9. Duportail, J. 2019. *El algoritmo del amor*. Barcelona: Contraediciones.
10. Foucault, M. 2010. *The Birth of Biopolitics: Lectures at the Collège de France, 1978–1979 (Lectures at the College de France)*. London: Picador.
11. Gandini, A., A. Gerosa, and L. Giuffrè et al. 2023. Subjectivity and algorithmic imaginaries: the algorithmic other. *Subjectivity* 30:417–443. doi.org/10.1057/s41286-023-00171-w
12. García Mingo, E., and I. Sádaba Rodríguez. 2023. Análisis de la realidad social digital: Hacia una metodología de la investigación social digital. *Teknokultura Revista de Cultura Digital y Movimientos Sociales* 20(2):159–164. 10.5209/tekn.88460
13. Garmin Connect. 2024. *Tu plataforma de seguimiento de actividad y rendimiento*. <https://connect.garmin.com/> (Accessed: 6 November 2024).
14. Geertz, C. 1973. *La interpretación de las culturas*. Barcelona: Gedisa.

15. Goggin, G. 2022. *Apps: From Mobile Phones to Digital Lives (Digital Media and Society)*. London: Polity.
16. Han, B.-C. 2025. *Psychopolitics: Neoliberalism and New Technologies of Power*. London: Verso.
17. Honorio, V., and Á.D. Rada. 1997. *La Lógica de la Investigación etnográfica*. Madrid: Trotta.
18. Hui, Y. 2016. *On the Existence of Digital Objects*. Minnesota: Univ Of Minnesota.
19. Işsevenler, T. 2023. Ashes to ashes, digit to digit: the nonhuman temporality of Facebook's Feed. *Subjectivity* 30:373–393. doi.org/10.1057/s41286-023-00173-8
20. Jansen, K., and S. Vellema. 2011. What is technography? *Life Sciences* 57(3–4):169–177. 10.1016/j.njas.2010.11.003
21. Kien, G. 2008. Technography = technology + ethnography: an introduction. *Qual Inq* 14(7):1101–1109. 10.1177/1077800408318433
22. Knorr-Cetina, K. 1999. *Epistemic Cultures. How the Sciences Make Knowledge*. London: Harvard University Press.
23. Kroker, A. 2023. *Technologies of the New Real: Viral Contagion and Death of the Social*. Toronto: University of Toronto.
24. Latour, B. 2007. *Reassembling the social. An introduction to actor-network theory*. Oxford: Oxford University Press.
25. Lury, C., and S. Day. 2019. Algorithmic Personalization as a Mode of Individuation. *Theory Culture and Society* 36(2). https://doi:10.1177/0263276418818888
26. Malabou, C. 2019. *Morphing Intelligence: From IQ Measurement to Artificial Brains*. New York: Columbia University.
27. Marcos Fernández, C. et al. 2024. Hacia la generación muda: Tendencias en el uso de WhatsApp por centennials, millennials y generación X. *Teknokultura Revista de Cultura Digital y Movimientos Sociales* 21(2):223–232. 10.5209/tekn.94858
28. Menéndez, N., C. C. Arias, and J. Haidar. 2020. ¿Sindicalismo 4.0? La organización de trabajadores de plataformas en Argentina. *Sociología del trabajo* 97:59–69. 10.5209/stra.71907
29. Miller, P., and S. Matviyenko. 2014. *The Imaginary App*. London: MIT Press.
30. Natarajan, S., Q. Li, and S. Park. 2026. Digital dampening and internationalization of digital firms. *Journal Of International Business Studies* 57:281–291. https://doi.org/10.1057/s41267-025-00835-6
31. Neidich, W. ed. 2013. *The Psychopathologies of Cognitive Capitalism*. Berlin: Archive Books.
32. Pandit, J. A., J. M. Radin, and G. Quer et al. 2022. Smartphone apps in the COVID-19 pandemic. *Nature Biotechnology* 40:1013–1022. https://doi.org/10.1038/s41587-022-01350-x
33. Ponterotto, J. 2006. Brief Note on the Origins, Evolution, and Meaning of the Qualitative Research Concept Thick Description. *The Qualitative Report* 11(3):538–549. https://doi:10.46743/2160-3715/2006.1666
34. Prummer Arabaolaza, B. et al. 2024. Investigación social en Twitch: Un análisis experimental de seis streamers hispanohablantes. *Teknokultura Revista de Cultura Digital y Movimientos Sociales*

21(2):211–222. 10.5209/tekn.89203

35. Razinsky, L. 2026. Self and Others in Algorithmic Governmentality: Between Hyper-Individuation and Disindividuation. *AI and Society* (Digital Human Twins – our future data selves). <https://doi.org/10.1007/S00146-025-02810-Z>
36. Ranciere, J. 2017. *The Politics of Aesthetics*. London: Bloomsbury Academic.
37. Remondino, G. 2012. Blog y redes sociales: un análisis desde las tecnologías de la gubernamentalidad y el género. *Athenea Digital* 12(3): <http://psicologiasocial.uab.es/athenea/index.php/atheneaDigital/article/view/Remondino>
38. Rose, N. 2006. *The Politics of Life Itself*. Oxford: Princeton University Press.
39. Authors. 2024a.
40. Authors. 2024b.
41. Ruse, J. N., E. Schraube, and P. Rhodes. 2025. Left to their own devices: The significance of mental health apps on the construction of therapy and care. *Subjectivity: international journal of critical psychology* 32(4):410–428. doi.org/10.1057/s41286-024-00195-w
42. Sardamov, I. 2012. From Bio-Power to Neuropolitics: Stepping beyond Foucault. *Techné: Research in Philosophy and Technology* 1(2):123–137. 10.5840/techne201216212
43. Saumyajee, D. 2023. A Comprehensive Review on Enhancing Daily Life through various Computer Applications and softwares (Computer Applications) Engineering. *Open Access I* 1:45–47. 10.33140/ea.01.01.09
44. Scolari, C. 2018. *Las leyes de la interfaz: Diseño, ecología, evolución, tecnología*. Barcelona: Gedisa.
45. Spiel, K. 2021. Why are they all obsessed with gender? (Non)binary navigations through technological infrastructures. *Proceedings of the ACM Designing Interactive Systems Conference* 2021, pp. 478–494. 10.1145/3461778.3462033
46. Stiegler, B. 2020. *Nanjing Lectures: 2016–2019*. London: Open Humanities.
47. Suárez, J. L. 2023. *La condición digital*. Madrid: Trotta.
48. Theisen, A., L. Kiesling, and M. Munger. 2022. From Airbnb to solar: electricity market platforms as local sharing economies. *Public Choice* 193, 141–162 (2022). <https://doi.org/10.1007/s11127-022-00985-3>
49. Weydner-Volkmann, S. 2026. Commodification in academic writing: a comparative analysis of two LLM apps. *AI & Soc* 41:307–320. <https://doi.org/10.1007/s00146-025-02446-z>
50. Yuka. 2024. *Tu guía de alimentos y cosméticos*. <https://yuka.io/es/> (Accessed: 6 November 2024).
51. Zuboff, S. 2020. *The Age of Surveillance Capitalism*. PublicAffairs.

Figures

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Mediocre - 31/100

1 disruptor endocrino potencial

5 alérgenos

4 irritantes

Figure 1

Yuka App

Source: Yuka, 2024

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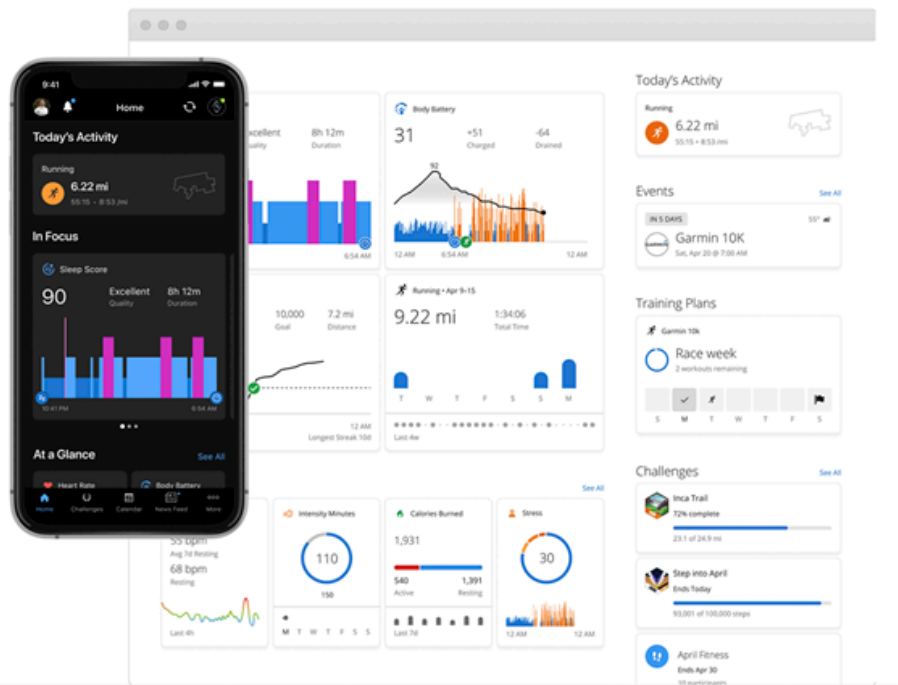


Figure 2

Garmin Connect App

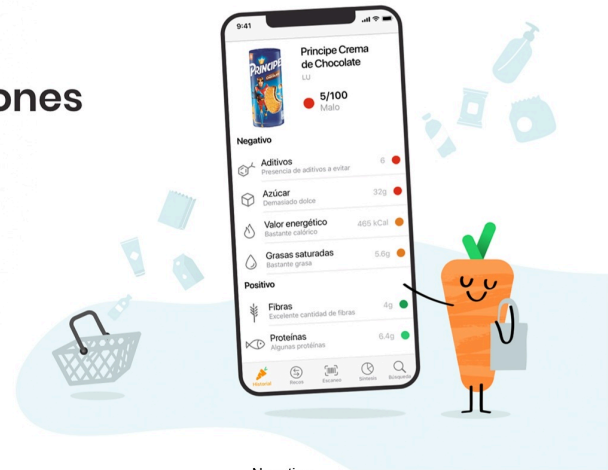
Source: Garmin Connect, 2024

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Negative:
 Additives
 Sugar
 Energy value
 Saturated fats
 Positive:
 Fiber
 Protein

Figure 3

Yuka App

Source: Yuka, 2024