

# Following ‘Fosfo’

Synthetic phosphoethanolamine and the transfiguration of immunopolitics in Brazil

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## Abstract

The chemical substance synthetic phosphoethanolamine (*fosfoetanolamina sintética*) was developed at the University of São Paulo (USP) in Brazil at the beginning of the 1990s and, until 2014, was tested on and distributed to cancer patients by members of USP’s Chemistry Institute (IQSC) in the city of São Carlos. That year, the production and distribution of ‘Fosfo’, as it became popularly known, was forbidden by IQSC’s director with the support of USP’s rector and the Brazilian National Sanitary Surveillance Agency (ANVISA). Shortly after this first prohibition, however, Fosfo gained popularity and became a national symbol of local scientific innovation and hope for a cancer cure. Likewise, it became an object of regulatory disputes involving multiple sectors of Brazilian society. Despite several further efforts by some scientists and patients to legitimate Fosfo as a pharmaceutical, ANVISA never authorized it. Nevertheless, at the same time as parts of Brazil’s established medical communities were becoming suspicious of Fosfo, its informal production and dissemination were increasing surreptitiously, with many Fosfo users and stakeholders questioning the legitimacy of conventional cancer therapies. In this article, I aim to understand the impact of Fosfo as a biotechnological innovation in terms of the ‘transfiguration’ of the physical and juridical persons involved in this controversy. Through the lens of transfiguration, the engagement and therapeutic-regulatory experiences of Fosfo users and stakeholders appear as deviant journeys that introduce discontinuities into established biomedicine and imply radical transformations at multiple levels, ranging from individuals to larger institutional environments.

## Keywords

synthetic phosphoethanolamine controversy, regenerative medicine, transfiguration, life assemblages, Brazil

Nobody joins the voice of a sheep with the shape of a horse, nor the colour of lead with the weight and fixedness of gold, to be the complex ideas of any real substances; unless he has a mind to fill his head with chimeras, and his discourse with unintelligible words. (Locke [1693] 1995, 369)

And yet there are others, who, 'losing their way, prefer to remain lost for ever'. This end of unreason, elsewhere, is transfiguration. (Foucault [1961] 2006, 530)

## Introduction

Developed at the University of São Paulo (USP) in Brazil at the beginning of the 1990s, synthetic phosphoethanolamine (*fosfoetanolamina sintética*) was tested on and distributed to cancer patients by members of USP's Chemistry Institute (IQSC) in the city of São Carlos.<sup>1</sup> In 2014, the production and distribution of 'Fosfo', as it became popularly known, was forbidden by the IQSC's director with the support of USP's rector and the Brazilian Health Regulatory Agency (ANVISA). Shortly after this first prohibition, however, Fosfo gained popularity and became a national symbol of local scientific innovation and hope for a cancer cure. Likewise, it became an object of regulatory disputes involving multiple sectors of Brazilian society. Despite several further efforts by scientists and patients to legitimate Fosfo as a pharmaceutical, ANVISA never authorized it. Nevertheless, whilst parts of Brazil's established medical communities were becoming suspicious of Fosfo, its informal production and dissemination increased surreptitiously, driving many Fosfo users and stakeholders in turn to question the legitimacy of conventional cancer therapies. In this context, how do scientists, patients, and their respective relatives and friends mobilize to promote Fosfo in public spaces (including the internet) and in private spheres as a legitimate medical future? How, and to what effects, do they rethink and deal with regulatory agents and the biomedical establishment in Brazil and their use of global immunosuppression-based therapies? Not least, what role does Fosfo play in these struggles for therapeutic legitimacy?

Unequal access to healthcare in Brazil remains highly prevalent, a symptom of deep historical socioeconomic inequalities. For this reason, especially since 2003, the Brazilian government

1 All translations from Portuguese and German to English in this article were made by the author.

has reformulated and increasingly invested in Brazil's publicly funded Unique Healthcare System (SUS). This has led to substantial growth in the poor classes' ability to access healthcare (Landmann-Szwarcwald and Macinko 2016). According to Vera Coelho (2018), around 65 percent of the Brazilian population access healthcare through SUS. In addition, as João Biehl (2016) argues, several Brazilian middle and low-income patients have brought lawsuits to justice courts in an attempt to get access to medications, in a twin phenomenon that implies the judicialization of healthcare and the pharmaceuticalization of socioeconomic rights. However, after the fall of the Worker's Party government in 2016, a radical neoliberal politics of dismantling SUS was launched (Soares 2018). The Fosfo controversy rose and, apparently, disappeared within this period, having affected access and regulation of scientific innovation significantly. Yet, although now silent, the controversy continues at this very moment.

My aim is to anthropologically understand the impact of Fosfo as a biotechnological innovation in terms of the transfiguration of physical and juridical persons involved in this controversy. I understand 'transfiguration' as the re-foundational unfolding of a person, by which their internal constituents are rearranged so as to systematically affect both the person themselves and their surrounding world. This unfolding takes place as the result of experiencing a transgressive encounter between oneself and a utopic, wished-for other that can trigger a process of decolonizing reordering across several scales (Venn 2000, 50). From the perspective of the transgressed order, transfiguration appears as deviance. Consequently, in the context of the Fosfo controversy, the engagement and therapeutic-regulatory experiences of Fosfo users and stakeholders appear through the analytical lens of transfiguration, as I use it here, to be deviant journeys. These deviant journeys introduce discontinuities into established biomedicine and imply radical connected transformations at multiple levels, ranging from body cells to larger institutional environments. Despite their transgressive character, I argue, these changes might paradoxically help to paradigmatically renew biomedicine rather than undermine it.

In Brazil, people who have encountered the compound report experiences that have realigned and reorganized their bodies, minds, and worlds. This realignment has rendered them opposed to – and, yet, still networked with – disciplined physicians and cancer patients. Despite being developed by biomedical scientists, Fosfo emerges as a subversion and a rupture with established biomedicine instead of a logical consequence and extension of it. Yet, for the physicians and patients who use it, Fosfo is a biomedical entity that participates in the making of 'Fosfo worlds' and, as such, in the making of the contemporary life sciences. From an anthropological perspective, I am concerned with presenting and analyzing Fosfo worlds as informal circuits of pharmaceutical innovation, based on the experiencing of Fosfo as a biopolitical artefact. For this, I focus on the practices, moralities, and conceptualizations of people who have been affected by Fosfo and who, organizing themselves around it, are now

committed to its legitimization as an immunostimulant therapy for the treatment of cancer in contemporary Brazil. In so doing, I seek to situate the controversies about the use and regulation of Fosfo and other immunostimulants in Brazil mainly from the perspective of immunostimulants-users, as well as within broader debates regarding what counts as proof in science and medicine and for whom.

### *Theoretical-methodological background*

As a case study, I situate the Fosfo controversy within my broader research on how scientific innovation, established biomedicine, and informal healthcare co-exist and interface in contemporary Brazil, and how their relations are mediated by legal and other institutions. Within this research, I delineate 'life assemblages' (Sleeboom-Faulkner 2014) as collectivities comprising, among others, medical doctors and patients who refuse the use of conventional drugs based on immunosuppression to treat autoimmune diseases (such as lupus, arthritis, multiple sclerosis, and cancer), and who instead embrace therapies based on the opposite principle of immunostimulation. Examples of the latter include autohemotherapy, vitamin D3, stem cell therapies, and animal poison-based treatments (Vilar 2018a).

In my interpretation, life assemblages comprise flexible sets of associations and bionetworks that materialize a political economy of hope (Novas 2006). Their members 'share questions related to the definition of what is "a life worth living" [and] mindsets that assume moral change towards life as inevitable and experience the transgression of ethical boundaries as a normal result of developments in science and technology' (Sleeboom-Faulkner 2014, 2). While patients' families and friends may form part of these networks, networks can also include people who do not know each other personally. People who use or support Fosfo, in this sense, co-constitute themselves and are co-constituted as members of Fosfo assemblages, or 'Fosfo users' as I call them, through their personal immunological therapeutic experiences with Fosfo and their associations with related practices, knowledge, persons, and networks.

There seem to be at least three factors that entwine members of Fosfo assemblages as biological citizens (Rose and Novas 2005) and allow Fosfo worlds to arise: first, the effect Fosfo has on them; second, their commitment to promoting Fosfo and other immunostimulant therapies to treat autoimmunity as legitimate scientific innovations; and third, the recurrent contestations of authorized therapies. All in all, the processes through which Fosfo assemblages come into being are informed by modes of experiencing autoimmunity, scientific innovation, and the biomedical establishment in Brazil, as well as exclusion and the liminality which results from rejecting conventional treatments and crossing legal boundaries. As I understand it, it is through a particular way of constituting themselves as persons in relation to and with others that Fosfo users actualize an immunological sociality

as relational matrix (Ingold 2001; Long and Moore 2013). This, in turn, enables them to know and sociobiologically reproduce themselves and their Fosfo worlds in a distinct way (i.e., as dissidents who promote a cure for cancer as a realizable utopia after having experienced contact with unauthorized knowledge, practices, and feelings linked to Fosfo as a tabooed drug).

To analyze this experience in terms of transfiguration, I combine two notions of person: the person as fractal and the person as multiple. In line with this conceptual combination, just as *one* body is made from several interconnected bodies, their relationships to each other, and respective environments, I am assuming that every person is likewise multiply constituted (Schwartz 1987; Lorimer 2017, 32–36) and, by the same token, reproduces themselves in multiple forms as ‘different projections of its fractality’ (Wagner 1991, 163). In this sense, as actors, persons are also networks. Sociality, in turn, instigates the interconnectedness of potential actors who share certain longings, fears, moralities, and ethical imaginations, and points to ways in which these actors, who are also networks, relate with and enact parts of their constitutive multiplicities. Likewise, sociality – as a constantly actualized outcome of the experience of being-and-growing-in-the-world, to which becoming ill and healthy and encountering biomedical innovation belong – does not determine but, rather, pedagogically informs the organizing principles of life assemblages for Fosfo.

A central point that I explore here is whether and how the emergence and dynamics of Fosfo worlds, as one among further life assemblages which support immunostimulant therapies for autoimmunity in Brazil, provoke and, in turn, are reinforced by a transfiguration of established biomedicine. My hypothesis is that life assemblages arise along the contradictions of established biomedicine itself and that, in the case of Fosfo and other immunostimulant therapies, the bionetworking practices of their members as biomedical dissidents converge to transfigure established biomedicine based on immunosuppressant pharmaceuticals. By following Fosfo and the people and institutions it has affected, I learn about the making of contemporary medico-legal orders as they responsively unfold through the transfiguration of related persons. These persons are involved in the disputes over legitimacy between conflicting immunological therapeutic models that contrary immunological socialities validate.

Inspired by actor-network theory (Latour 1987), I sought to apprehend the Fosfo controversy as science in the making. Methodologically, I identified and traced key moments in the trajectory of Fosfo, drawing on a broad set of materials including media coverage, scientific articles, internet reports, websites and blogs, as well as official political, medical, and legal documents. These materials were collected on the internet using digital methods (Rogers 2013) as a way to combine online research and actor-network theory. First, to reconstitute the Fosfo controversy, I organized these materials into chronological order. Second, I identified multiple

actors engaged in co-administering cancer treatment, including scientists, laboratories, and health professionals, but also patients, their relatives and friends, judiciary officers, politicians, diverse associations, and private, State and Federal institutions. Third, I adapted grounded theory to set limits in my search; that is, when the statements and practices of Fosfo co-regulators became repetitive and assumed a more crystallized form, I formulated them as theoretical constructs, changed my direction, and kept moving.

Analytically, I consider the internet both as an archive (where one can find what exists outside it and what migrated to it) and as a set of mappable-mapping webs (through which one co-produces realities but which also frame how users participate in this co-production of realities). I take the multiple practices of this myriad of actors towards Fosfo as co-constituting Fosfo itself in its many aspects – as a biotechnology, an object of legal dispute, a symbol of disillusion or of hope, etc. Hence, exchanges on the internet (e.g., on Facebook and personal blogs) between established authorities and a wide range of Fosfo stakeholders are central to my analysis. Because I am mainly concerned with the advent of Fosfo worlds, I focused on those exchanges that comprise unauthorized knowledge, legal documents and guidance about how to deal with law and legal authorities, therapeutic reports and recipes of how to self-produce Fosfo at home, personal experiences, and educational practices among people engaged in promoting the compound. By following and describing the bionetworking activities of Fosfo users and the trajectory of Fosfo, I seek to reassemble the biomedical world that members of immunostimulants-assemblages recreate. When taken as a set of effects related to biotechnological innovation as deviant journeys, this trajectory – including the re-appropriations and multiple transformations that Fosfo both undergoes and provokes – implies what I call transfiguration.

Finally, as a non-health professional, my analysis and personal position in relation to Fosfo are informed by participant observation conducted in the context of my research on other immunostimulant therapies, which includes autoethnography and membership in related networks. I elaborate and discuss my research and methods elsewhere (Vilar 2018a, 2018b). Because of my experience with immunostimulants – I recovered from psoriasis arthritis by using a stigmatized immunostimulant therapy – and due to a probable ongoing paradigm shift in the life sciences (CRC/IMPATH n.d.; Silva et al. 2015; Lorimer 2017; Vilar 2018a), I see the administration of immunostimulant therapies for autoimmunity conditions as, in principle, promising. Overall, while the Fosfo controversy contributes to current debates about the role of patients in the adoption of new biotechnologies into healthcare systems, an analytical perspective that focuses on transfiguration also helps to consider the position of biomedicine, along with non-biomedical actors, as an essential part of the renewal of and resistance to biomedicine itself.

*Structure of the article*

This article is divided into two main parts. In the first part, I follow Fosfo from the moment it began to gain national prominence through mass media and on the internet in Brazil. I move with Fosfo from the laboratory to the bodies of cancer patients, and from there to private homes, the police, and justice courts, medical, regulatory and political institutions, and the informal sector. In the second part, I seek to turn transfiguration into a manageable anthropological tool, since its place within medical anthropology and science and technology studies is still not clear. To analyze Fosfo's controversy through the lens of transfiguration, I experimentally transpose this concept from the context of transformation processes in religion, philosophy, and art to transformations in medical therapy involving biotechnological innovations. I conclude that, if sociality as a relational matrix informs the responsive coming together of actors into Fosfo assemblages on the basis of their shared experiences with conventional and unauthorized therapies, transfiguration may be used to denote the multiple changes in how these assemblages are composed; that is, the transformation and repositioning (or transformation through repositioning) of involved actors and their respective practices, minds, bodies, and worlds that take place through contact with unauthorized desired innovation as unpredictable other.

## The Fosfo controversy: Bringing science home, or give me a kitchen and I will manufacture the cancer cure

In August 2015, journalist Stefhanie Piovesan (2015a) published an online article that sparked a long and heated public controversy concerning Fosfo. The article told the story of Mrs. Witthoeft, an eighty-two-year-old woman living in Santa Catarina State who, in March 2007, was diagnosed with cancer. Two months after the diagnosis, her son Carlos was told that there were scientists at USP who distributed a medication against the disease. He decided to investigate this and contacted the chemist and research coordinator Professor Gilberto Chierice, who provided him with pills that went by the name 'Fosfo'. Eighteen days after his mother had taken the treatment, Carlos considered her 'cured'. Mrs. Witthoeft was well known in her village, and as her neighbors and friends registered her recovery, they asked Carlos whether he could provide them with the same pills too. Although Carlos tried, Professor Chierice explained to him that the laboratory at USP did not have the capacity to produce enough pills for everybody. Carlos then asked him whether it was possible to learn how to produce Fosfo himself and kept insisting on the matter until Professor Chierice invited him to São Carlos.

During his short stays over the following four months, Carlos received intensive training in basic chemistry and learned how to synthesize Fosfo. Subsequently, he began to produce Fosfo

pills at home and distribute them for free with his wife Rita, who was responsible for receiving calls and comforting patients. This Fosfo assemblage flourished further. For half a year, Carlos continued to produce and distribute Fosfo while working as a re-seller. As he told it, demand kept increasing: 'Each person who was cured would bring three or four more people' (quoted in Piovesan 2015a). Many people began to help and, at some point, Carlos and Rita began to dedicate themselves exclusively to the production and distribution of the pills. In parallel, over the ensuing years, Professor Chierice and his team published at least ten articles in internationally renowned scientific journals in Europe and the USA reporting on their experiments with Fosfo.

### *The interdiction of Fosfo and its image in mass media*

On 10 June 2014, the IQSC's director stated that the production and distribution of Fosfo and any other drug at the IQSC could only be realized after registration with ANVISA and subsequent approval by the IQSC's board of directors (USP/IQSC 2014). As Fosfo was not registered, Professor Chierice and his team had to stop its production and distribution immediately. Due to this interdiction, many patients, including those who were undergoing treatment with Fosfo and others who wished to start taking it, began to judicialize their access to Fosfo by going to the local public defender's office to apply for injunctions. Eventually, through these lawsuits, they received permission from the justice courts to resume or commence their treatment with Fosfo (Piovesan 2015b; Marcio 2015).

One year later, the police appeared at Carlos's door and ANVISA confiscated all his materials. His production of Fosfo was stopped and he was accused of 'pharmaceutical falsification', ultimately spending seventeen days in jail. ANVISA justified its actions by stating that Fosfo was not officially registered. In the reportage on this incident published immediately after his imprisonment (G1 2015a), Carlos's name was not mentioned; instead, he was portrayed as 'a man' suspected of cheating people with his self-produced drugs. This news story was almost entirely based on an interview given by the director of the regional ANVISA office. According to her, 'the producer' prescribed his patients with three pills to be taken daily and promised recovery within six months (ibid.). Furthermore:

the same patient should not consume chemical medicines which were scientifically attested. He also used to forbid radiotherapy [and] chemotherapy, given that these treatments would significantly reduce the effects of his medicine, and he also used to forbid the use of antibiotics. (ibid.)

Nevertheless, one month after that reportage, ANVISA's portrait of Carlos was radically reshaped through subsequent news that showed him as a Prometheus-like character, struggling



to give people with cancer access to a drug that, despite all controversies, represented a hope for a cure. When Carlos was released from jail, his wife Rita unexpectedly died of an aneurism. This case was published in newspapers, on the internet, and on television, provoking great commotion.

Coverage of this story made not only the ‘cancer pill’ public, but also the struggles among scientific authorities and between non-scientists, ANVISA, and further legal agents (G1 2015a). An unanswered question arising from the debates concerning Fosfo, which helps to put the legitimacy of regulatory science in Brazil into question, is: why was Fosfo forbidden at that time, even though it has been distributed for over twenty years with the consent of the authorities? It was at this time that, having previously remained unnoted, the narratives of people who had posted their therapeutic stories of being cured by Fosfo on different internet blogs, discussion forums, and in personal videos on YouTube began to be taken seriously, amplified, and reproduced. At the same time, it also became clear that many people had achieved access to Fosfo through lawsuits at justice courts following the prohibition on Fosfo production at USP. With the publicization of Fosfo, the number of such injunctions multiplied (Piovezan 2015b).

### *Engaging the immune system*

To understand the adoption of Fosfo by Fosfo users and their disapproval of conventional therapies such as chemotherapy, radiotherapy, and antibiotics, it is necessary to understand the ways in which conventional therapy and Fosfo mutually exclude each other as incommensurable therapeutic models. Cancer is usually not referred to as an autoimmune disease within biomedicine. Nevertheless, it is, in principle, a disease provoked by regulation problems of the immune system rather than by organic pathogens such as a virus or bacterium. According to the US National Cancer Institute:

Cancer can start almost anywhere in the human body, which is made up of trillions of cells. Normally, human cells grow and divide to form new cells as the body needs them. When cells grow old or become damaged, they die, and new cells take their place. When cancer develops, however, this orderly process breaks down. As cells become more and more abnormal, old or damaged cells survive when they should die, and new cells form when they are not needed. These extra cells can divide without stopping and may form growths called tumors. (NIH NCI 2015)

The uncontrolled, incessant reproduction of dysfunctional cells which characterizes cancer occurs because the immune system fails to distinguish them as damaging anomalies from healthy cells. Unlike diseases such as arthritis and lupus, which are identified through

exacerbated autoimmune reactions against healthy cells, cancer presents an absence of immunological reaction, or neglect, towards unhealthy cells. In both cases, however, the immune system acts inappropriately. Correspondingly, people with cancer and other autoimmune diseases are conventionally treated by physicians with immunosuppressants to palliatively *turn off* the patient's immune response. That is achieved by artificially damaging the patient's metabolism to slow down cell production, thereby slowing down the disease's progress so as to avoid further damage.

In contrast, Fosfo stimulates immunity and the production of antibodies in those who take it. As one of the Fosfo scientists, Renato Meneguelo (quoted in NSC Total 2015), summarizes:

Once in the body, the substance [Fosfo] hits the mitochondria and signals the cancer cells. Through the body's own defense, the marked cells go through the process of apoptosis ('programmed death cell'), decreasing its multiplication and thus preventing the cancer from evolving or going to other tissues.

Metaphorically speaking, Fosfo can be thought of as a pair of 'spectacles' that help the immune system to once again 'see' abnormal cells and so respond accordingly, in that it stimulates a sort of immunological awareness. Thus, instead of being considered as the problem and something that needs to be punished, the cancer patient's immunity is re-validated, enhanced, and re-committed through didactic stimulation; it is taken as the main part of the solution (Napier 2012). As with other immunostimulants, Fosfo can be grouped into the category of regenerative medicines, as a biotechnology 'involved in the collective project meant to coax the body to repair itself and potentially to extend the lifespan' (Hogle 2007, 859). Hence, Fosfo users do not recommend immunosuppressive therapies.

The apparent incommensurability – and, therefore, the disputes for therapeutic legitimacy – between Fosfo (as a biomedical innovation based on immunostimulation) and conventional therapies (based on immunosuppression) became manifest through different encounters that take place at clinic offices, justice courts and governmental institutions. Here, I would like to return to the judicialization of Fosfo as an act of co-regulation of immunity and cancer treatment.

### *Judicial actors and regulatory science*

Because Fosfo was not registered at ANVISA as required, the injunctions to obtain Fosfo were mainly based on three legal assumptions. First, the Brazilian Federal Constitution of 1988 assures the 'right of patients to health' as universal. Second, law n. 6.360 (art. 24) states that new medicines, exclusively for experimental use and under medical control, are exempt from

registration. And third, it takes the ‘Extraordinary Appeal Nr. 657.718 MG’ (STF 2011) as a legal precedent (in this case, a patient with chronic kidney disease successfully requested the Brazilian Federal Government for access to a medication that had been prescribed by a physician but, at that time, could only be found outside Brazil and consequently was not officially registered with Brazilian regulatory institutions). Additional arguments were made that patients with cancer had no time because ‘cancer does not wait’, that conventional treatments have not been successful, and that terminal patients have nothing more to lose after they had passed through conventional therapy.

As reports of people managing to get access to Fosfo through the judiciary continued to emerge, people from across the country went to the Public Defender’s Office in the city of São Carlos or began to employ local lawyers to obtain Fosfo (STF 2015a). Successful models of legal claims, provided by lawyers of the Public Defender’s Office and by successful claimants, began to circulate on the internet, where interested people could download and adapt them. Favorable sentences were also publicly exchanged, to serve as templates for judges who were in favor of Fosfo (e.g., Rocha 2016; da Silva 2015; Tarabori 2015). On social media, the number of narratives reporting a cure through Fosfo increased.

In September 2015, the president of the São Paulo State Court contested more than 360 injunctions, which had been granted by the justice court in São Carlos (G1 2015b). Beyond the fact that ‘the referred substance is not among the commercialized drugs’ and ‘it is not registered by ANVISA’, he defended that ‘it could not even be argued that health protection prevails over the formal registration of the drug, because there is no evidence that the required substance, which is not a remedy, has any effect in humans’ (TJ-SP 2017, 6–7). One person whose injunction was blocked was the mother of a lawyer, who subsequently brought her case to the Brazilian Supreme Federal Court (STF) in Brasília, the highest judicial court in the country. The petition was judged in their favor (Knoploch, Brigido, and Souto 2015). This decision set another legal precedent on the federal level, leading to more injunctions being granted by justice courts outside São Paulo State across the country (STF 2015b). After that, the president of São Paulo State Court withdrew his prohibition of Fosfo.

### *Fosfo at the Brazilian Senate*

As required by senators, a public hearing with live transmission took place on 29 October 2015 at the Brazilian Senate to debate the ‘discovery and development of pharmaco-medical-clinic research with the drug phosphoethanolamine’ (Senado Federal 2015; TV Senado 2015). During the hearing, the main actors involved in the controversy expressed their respective positions. A statement from USP’s rector was read out, which emphasized that USP was inappropriately obligated to provide Fosfo for those who require it by force of law (TV Senado

2015, from 31:20). It argued that Fosfo was not a pharmaceutical, but a chemical product without clinical evidence for its therapeutic efficacy. Furthermore, it was neither registered nor authorized by ANVISA, and 'the manufacture of this substance, being handmade, does not fulfil the international and national requirements for the medicament production' (ibid.). The statement concluded with a warning that the USP was investigating 'the possibility of informing on the professionals who are benefiting from the despair and fragility of the families and the patients to the prosecution authorities' (ibid.). After the reading, the senator suggested that the USP's note may frame the debate which should follow.

Despite this menacing tone, the following presentations from Fosfo users took place unintimidated. According to Professor Chierice (TV Senado 2015, from 37:20), in 1995 USP had made an agreement with a hospital, through which it became a research hospital and received support from the Ministry of Health. Because ANVISA did not exist at that time, research on Fosfo was initiated 'per the rules of the Ministry of Health' (ibid.). With this, all necessary authorizations had been achieved and tests were conducted with ministerial authorization. However, the agreement was not renewed by the hospital in the year 2000, meaning that patients who were taking the pills could no longer receive them at the hospital and had to seek them at USP's laboratory in São Carlos. The number of patients seeking Fosfo at USP increased 'in an uncontrolled manner, but we [as chemists and university researchers] never entered into the medical field, because all the recommendations came from the hospital' (ibid.). Stating that there were several cases of cured people over twenty years, Professor Salvador Claro Neto, a key member of the team responsible for synthesizing Fosfo at USP summarized their moral dilemma: 'How can a person in full recovery process, suddenly, have no further access to Fosfo? That is not even human! [...] Fosfo is, nowadays, a reality for the cancer cure' (ibid., from 52:50). Later in the hearing, additional members of the USP research team explained how Fosfo works, why it has no side effects, and why it is affordable. They further discussed the experiments they had conducted (partially enabled through cooperation with other renowned institutions such as the Butantan Institute and São Paulo State University) and their published results. They emphasized that their work was financially supported by national research agencies and showed images of experiments with Fosfo in animals and humans. Among them, one stated that he had been taking the substance himself. Another, Professor Marcos de Almeida, appealed for a conciliation, which was noteworthy in that it did not exclude established therapies, arguing for the approval of Fosfo for patients in terminal stage. He further noted that the statements of patients who had used Fosfo should be seriously considered 'even without the due clinical control for its liberalization' (TV Senado 2015, from 1:01:00). Almeida's main argument was based on the number of people who had accessed Fosfo through injunctions and whose health has subsequently improved. Speaking as a member of Professor Chierice's team, he stated that they would give up the patent rights of Fosfo provided that it begins to be distributed through SUS and at a low cost. After Professor Chierice's team, ANVISA's president explained ANVISA's role in a didactic fashion

and stated that evaluating a formal application for Fosfo's approval was a matter of high priority, affirming that ANVISA would help scientists to organize the missing clinical tests (TV Senado 2015, from 2:31:00). He emphasized, however, that nobody had entered with a request to approve Fosfo until that moment.

In their turn to speak, Fosfo users underpinned the Fosfo scientists' statements. One user, Ms. Cioffi, presented herself as a 'carrier of metastatic breast cancer with bone metastases' (TV Senado 2015, from 3:06:30). As she stated, no conventional therapies had shown any efficacy during her palliative treatment, but with Fosfo, everything had changed:

When I looked for the phosphoethanolamine, I had, as all patients have, numerous doubts. It is not easy for a patient to obtain a medication through an injunction, through a lawsuit, to receive in their house a transparent envelope without a label, without an expiration date, without terms, without a manufacturing batch, without prescription, with nothing, having to believe [...] that there is a chance. I have been using phosphoethanolamine since 23 September. [...] If it is effective, I do not know. I only know that my tumor markers, for the first time [...] have gone down. [...] It is also true that since the fourth day of use I no longer use any analgesic. And the cancer patient knows what I'm talking about (ibid.).

After having reported on further radical health improvement through Fosfo, Ms. Cioffi asked to continue using it, at least to avoid having to return to the use of analgesics and morphine. Likewise, Mr. Vilson reported that since taking Fosfo, he no longer needed to undergo chemotherapy, which he was very afraid of (TV Senado 2015, from 3:16:00). Moreover, he presented himself as evidence for Fosfo's efficacy. He explained that he had built a network around Fosfo, stating 'I am helping as many people as possible [with Fosfo]' and asking 'Does one have to enter the judiciary to become healthy?' (ibid.). He then warned: 'The ANVISA's president may have, tomorrow, a relative diagnosed with cancer just as it may happen to each one of you [in the audience]. Therefore, let's solve this problem' (ibid.). Towards the end of the hearing, a federal public defender also presented a lawsuit initiated by the Federal Public Defender's Office (TV Senado 2015, from 5:00:30). It aimed to ensure the continuity of Fosfo's production and distribution on the national level within sixty days. The defendants in this lawsuit were the Federal Government of Brazil, ANVISA, São Paulo State, and USP, all of whom were given seventy-two hours to respond.

As an outcome of the hearing, the government committed itself to fully support Fosfo scientists and financially enable the final clinical tests. Several commissions bridging different ministries were assigned the responsibility of forming a work group with a network of hospitals, clinics, and universities. Furthermore, through a Bill, Fosfo's production would be

resumed to meet the injunctions and be given to patients in terminal stages who would take the drug at their own risk.

### *Immunopolitics in trance*

In February 2016, São Paulo's governor designated the PDT Pharma laboratory as an authorized place for the production of Fosfo, under the supervision of Professor Chierice and Professor Claro Neto. Planned clinical tests were to be coordinated by the São Paulo Institute of Cancer with authorization from the National Research Ethics Commission. After being synthesized at PDT Pharma, Fosfo would be encapsulated at the official São Paulo State laboratory. On 8 March, the Chamber of Deputies approved a Bill for the liberalization of Fosfo. One week later, the Federal Pharmacy Council (CFF) published a 'technical note' advising that 'the use of this substance, empirically and without sufficient scientific support for safety and efficacy, exposes its users to possible damage and creates false expectations of cure that may not be confirmed' (CFF 2016). On 17 March, partial results of pre-clinical tests were published claiming that Fosfo contained much less phosphoethanolamine than expected and was of low efficacy, although it did not appear to be toxic.

After Fosfo users and stakeholders officially contested the proceedings of the ongoing pre-clinical tests, new meetings were scheduled. On 22 March, the Senate approved the Fosfo Bill sent by the Chamber of Deputies. However, one week later, USP denounced Professor Chierice for 'healerism' (*curandeirismo*), and he was required to attend an interrogation by the police (G1 2016a; Boehm 2016) while USP's rectory publicly reaffirmed its position and closed the IQSC's laboratory (USP 2016). On 5 April, at the Federal Senate, the debate on the partial results of the pre-clinical tests was resumed (TV Senado 2016). Afterwards, a prosecutor who accompanied the debate stated during an interview that:

A wrong methodology [to scientifically evaluate Fosfo efficacy] was used [...]. They [the scientists who were conducting the tests] have stated that Fosfo has low therapeutic purpose. This is not true. We have documents in the opposite direction and, unfortunately, this issue, which should be resolved by science, will have to be resolved in the judiciary. (G1 2016b, from 1:49)

Eight days later, the Presidency approved the PLC 3/2016, turning it into Law 13.269, liberalizing Fosfo. At this point, the impact of Fosfo on ordinary dying cancer patients and the people who support them seemed to have repositioned the very sources of legitimate knowledge and authority. In April 2016, the liberalization of Fosfo was sanctioned by the Brazilian president (Presidência da República 2016). Although this law was programmed to lose its validity when all necessary clinical tests were concluded, it implied that the official

criteria of established biomedicine to verify and affirm the truth about any substance could be (and, indeed, were) transfiguratively subsumed into the set of evaluation criteria used by Fosfo assemblages' members. Between the public hearing at the Senate and its legalization, Fosfo continued to move along different scrutinizing paths of innovation and contestation in world-making entanglements between different parts of Brazil's economic, judicial, pharmaceutical, political, and media systems.

In this sense, the combined impacts of new media technologies, economic and health demands, legal dispositions, and innovative biotechnologies appear as a succession of transfiguration processes, since the changes in the scope of what is to be trusted and envisioned, and of valid risks, belong to the main effects that characterize transfiguration. As part of these processes, Fosfo assemblages' members, as those who co-produce contesting medical evidence in favor of Fosfo, unfold themselves as persons capable of systematic evaluation and, hence, as reliable witnesses of the healing powers of Fosfo as an innovative substance. At the same time, the claims of established biomedicine are eclipsed by suspicions of scientific misconduct.

Again, however, the tide turned. Three days after Fosfo was legalized, the Brazilian Medical Association entered a judicial action against it at the STF, arguing that Law 13.269 was unconstitutional. On 17 May, a seminar to discuss preliminary studies on Fosfo took place, this time without the presence of Fosfo users and stakeholders (INCA 2016). On 19 May, one week after the Brazilian President was deposed through a parliamentary coup (Jinkings, Doria and Cleto 2016), the STF suspended the Fosfo law (STF n.d.). Furthermore, in March 2017, the clinical tests were interrupted. According to Natália Caetano et al. (2017, 111), because most of the tests with Fosfo 'did not show any clinical efficacy in preliminary trials and clinical trials supported by São Paulo Cancer Institute, studies were suspended with the agreement of [...] ANVISA'. Yet, the conduct of these clinical tests was also contested, and in October a Parliamentary Committee of Inquiry (CPI) was formed at the São Paulo Legislative Assembly to investigate why São Paulo State was not supporting clinical studies for the liberalization of Fosfo.

Despite its legal suspension, Fosfo reappeared as an authorized drug for the treatment of cancer in January 2018. In April of that year, the members of the CPI recommended in their final approved report, among other proceedings, that new tests should be conducted, and pointed out that the principal investigator of the interrupted studies was suspected of misconduct (ALESP 2018). In July, Professor Chierice entered a judicial action against PDT Pharma requiring the interruption of its Fosfo production, arguing that the drug was being inadequately produced without Professor Claro Neto's supervision. The following year, however, Professor Chierice died unexpectedly due to an infarction.

Overall, the last interdiction of Fosfo did not prevent people from seeking access to it by diverse means. Fosfo assemblages proliferated through unregulated paths of scientific innovation in response to the prohibitive actions of established biomedicine. In a systematic search carried out on Facebook in September 2017, I found over one hundred regional, national and other self-defined groups of Fosfo supporters whose sizes ranged from thirty-five to 47,000 members. Criticism against the use of immunosuppressive palliative therapies and the mainstream media was expressed in a confrontational fashion. Different recipes for producing Fosfo at home circulated among subscribers of blogs in favor of Fosfo and other immunostimulant therapies. Moreover, explanations about how to encapsulate Fosfo at home and other tutorials were made available on YouTube. In 2017, 2,889 lawsuits were brought to São Paulo state courts. These, and further practices described throughout this article, reveal and reinforce a detachment of medical science from established biomedicine. This duplication of biomedicine co-produces a shadow economy within which Fosfo users connect to each other and continuously deal with regulatory authorities, without necessarily being mediated by these authorities. How can this dynamic be understood? What happens to a person who gets in touch with Fosfo and becomes enmeshed in the controversy surrounding it?

Apparently, focusing on the Fosfo case as a transfiguration process of established biomedicine in Brazil highlights aspects of how biomedicine resiliently regenerates itself through experiences of dissidence and, in particular, how this self-regeneration takes place through bionetworking activities. Nevertheless, is it possible to relate transfiguration to Fosfo? If so, how? What is transfiguration after all? In what follows, I explore these questions by experimentally using transfiguration as an analytical tool to understand Fosfo as a scientific controversy.

## Transfiguration: Bringing heaven to earth, or from a biblical narrative to a mundane experience

The quintessential example of transfiguration is the biblical episode of the illumination of Jesus, when his appearance radically changes into a luminous form on a mountaintop as witnessed by three of his disciples (Matthew 17, 1–8). In his interpretation of Raphael's painting of this episode, Friedrich Nietzsche (1872, as discussed in Strong 2010, 52) considers not only Jesus to be transfigured but also the 'earth' (i.e., the world around him). In so doing, Nietzsche not only expands transfiguration from the one who experiences it as an individuation process to the people around the transfigured person, but also contributes to dechristianizing transfiguration as a confessional phenomenon, while maintaining its religious character (Strong 2010). After bringing to life the notion of transfiguration as an existential experience, Nietzsche then compares it with the potential effects of how people deal with the work of art – an analytical tactic that, according to Venn (2000, 163), became 'central to



modern aesthetics'. In *The Birth of Tragedy*, Nietzsche ([1872] 1993) addresses tragedy as a spectacle capable of provoking transfiguration by those who witness it, the spectators. According to Tracy Strong (2010, 54), for Nietzsche, 'the experience of tragedy is paradigmatic of the experience of transfiguration'. Correspondingly, Nietzsche stimulates three conceptual displacements at the biblical narrative of transfiguration. First, Nietzsche anticipates the foundational character of modern understanding of transfiguration as a relational process, given that it may be understood as a radical mutual transformation that takes place between an individual and other individuals who compound one's surroundings (see also Howie 2013, 161). Second, he democratizes transfiguration as a phenomenon that occurs not only among holy entities but also among ordinary human people. Third, Nietzsche democratizes transfiguration as a phenomenon that can occur in ordinary situations too (Strong 2010, 57–58). Contemporary examples provided by *Oxford Dictionary Online* (n.d.) illustrates that, such as: 'if you thought Celtic music was fiddles, jigs and reels, this extraordinary album will be a platform for your transfiguration'. In this sense, transfiguration might refer to the effect of a transformation which takes place in daily life by an ordinary human person, and to a change not only of form but also of ways of feeling and perceiving which brings one to participate in a world re-ordering related to a dislocation of perspective.

Might Fosfo act as a platform or catalyst for one's transfiguration? Is that not what occurred when Carlos's family and Fosfo came across each other? Not only did Carlos claim that his mother was cured by Fosfo, but also that other members of his family experienced radical life changes. They stopped waiting for an expected death after being told about an unexpected but wished-for possibility of cure. Moreover, they both adopted this possibility and propagated it, just as other Fosfo users did. Carlos's family members and other Fosfo stakeholders began, as ordinary people, to feel, perceive, believe, and live differently, while they repositioned the status of conventional therapies and their associated regulatory institutions, and transgressed their norms. Hence, transfiguration as a process does not occur and spread without further concerns. There seem to be at least two complementary basic conditions for transfiguration to take place, if one understands it as the product of an encounter.

### *Transfigurative numinous as storytelling materials*

In all examples of transfiguration that I have found in related literature, there is always something, normally a force, which meets the person who becomes transfigured. It is often described as light form. For example, in the German *Wiktionary* (n.d.), 'Transfiguration' is described as the 'process by which Jesus's mind was filled with higher, godly thoughts'. In the examples of transfiguration mentioned above, this holy/healing force appears as the unknown music album, and as a compound. Both come from somewhere else. The radiation of the album's songs, and Fosfo's biochemicals, draining *into* the listeners' mundane body, actualizes

their body and their reality. What kind of force is that without which no transfiguration takes place?

Apparently, this force becomes itself relationally materialized through the very encounter that produces transfiguration. In the description of Jesus's transfiguration in *Wiktionary* (n.d.), for instance, 'godly thoughts' are designated as substances that can 'fill' the 'mind' of Jesus. Here, both 'mind' and 'thoughts' assume a material character, such as the image of a cup of water. This image, however, should not be taken as corresponding to Descartes' dichotomy between body and mind, whereby the former is seen as a vehicle rationally driven by the latter. The point is that there is no Jesus's mind without its divine thoughts. It is the connective, communicative, and productive aspects of the meeting between transfigurative force and transfiguring person that I want to emphasize. Likewise, music is often evoked as capable of triggering transfiguration (Gilroy 1993; Mbembe 2005; Strong 2010). As Achille Mbembe (2005, 72) puts it:

The aesthetic signification of a musical work is revealed through that which links the work to a world of sensations. Musical beauty therefore has meaning in – and through – its effects, through the feelings and passions that the musical work produces in the subject who is listening to it, is present at its performance or is dancing in accompaniment of it.

By the same token, as a biotechnological work and a biosocially constituted hope to cure cancer, Fosfo has meaning through its effects on cancer patients; there is no Fosfo user without Fosfo as 'the cancer pill' and vice versa.

Thus, the transfigurative force tells a story, a narrative. It transmits a new frequency or melody and provokes new sensations. Mostly, it is an unknown outsider and, therefore, what it tells does not necessarily belong to the here and now – it is mostly unpredictable. It comprises signs that, in the context of transfiguration, may be seen as 'numinous' (Otto [1917] 1936) and, thus, have a mythological property. As signs, these transfigurative substances are not only objects of interpretation but are themselves already interpretations (Foucault [1967] 1998, 277) that intervene on already circulating, established ones. In this sense, these signs are semiotic materials and material semiotics at once (Miller 2010). Hence, what the transfigurative numinous substance as storyteller material has to offer is what Venn (2000, 177), calls a 'renarrativization' of one's life as one knew it until that moment. Is that not what Fosfo as a medical future promises?

Fosfo reminds those cancer cells that persist to live that they forgot to die, and chronic patients that they are not chronic at all. In this light, the affectivity of Fosfo as unauthorized biopolitical artefact in building life assemblages which seek to promote a transfiguration of cancer

treatment and the established medico-legal regime in Brazil becomes clearer. As a travelling medico-technological artefact, Fosfo disseminates a particular biopolitical agenda, which is simultaneously an object to be appropriated, a message, and an intervening practice (Lakoff 2007; Foucault [1967] 1998). Hence, if understood as a numinous storytelling material that comes from the world of unauthorized therapies, the recovery process through Fosfo improves immunological awareness as the body's capacity to know and properly deal with *other* constituents of *oneself* (Napier 2012). This is true at least according to many available Fosfo users' narratives (Cura do Câncer n.d.). Maybe it could be seen as a storyteller's gift, one that may or may not be properly accepted by those who encounter it, from Fosfo users' cells to authorities at governmental, educational, and private institutions. Here, I come to the second condition of transfiguration: the creative receptivity of cancer patients as spectators, without whom there is also no tragedy.

### *Active receptivity and transgression of legal norms*

To experience transfiguration, one must have a willingness, a longing, and the appropriate receptivity to allow the forces that might trigger it to act. At the corporeal level of the Fosfo controversy, transfiguration might take place as the immune systems of Fosfo users read the message printed on cancer cells by the drug and re-learn their role as a fundamental actor within the healing process. The wish to become part of and/or immersed in the story, which materials of transfigurative numinous tell, belongs to this inclination. One might say that one's predisposition to experience transfiguration is mainly based on the Nietzschean assumption that:

the self is not found at home [...] but achieved. The picture is not of turning around but of a path, a kind of growth [...]. Successful tragedy for Nietzsche constitutes the sealing of a change not so much in what one is but in the naturalness by which one is able to deal in one's life and history with the historically evolving conditions that affect a culture. (Strong 2010, 56)

Similarly, Foucault ([1967] 1998) conceives the person who can reproduce or actualize themselves as a work of art as potentially characterizing a mode of emancipation. As Venn (2000, 155) explains: 'Foucault summarizes his approach in the concept of a "critical ontology" that inscribes a being for whom autonomy and freedom are the conditions for the "complex and difficult elaboration" through which it transforms itself into a "work of art"'. Following that, both Nietzsche and Foucault divide the spectators of the tragedy, or the beings who recreate themselves aesthetically, between those who gather these conditions (i.e., those who cease to 'rationalize' and instead have a Dionysian attitude towards tragedy as 'true aesthetic listener') and those who, in contrast, belong to the 'community of Socratic-critic persons'

(Strong 2015, 55). That is why, for Nietzsche, the 'true listener' is 'capable of understanding *myth* [the transfigurative numinous] as a concentrated image of the world that, as a condensation of phenomena, cannot dispense with miracles' (Nietzsche 1872, cited in Strong 2010, 55). Therefore, the creative receptivity of the spectator co-produces them as *true*. Accordingly, the subject Foucault envisions,

who has returned with an 'attitude', is not to be confused with the self-present, imperial subject of logocentric Reason, for it is now an anxious figure haunted by the idea of its finitude, compelled by the task of 'inventing itself' but within 'the limits that are imposed' on it [...]. [The one who transfigures is rather] a Dionysian being whose will to power seeks not dominion over others but a form of plenitude – epiphanic perhaps – through the ecstatic and sublime experience of the artistic, inventive transfiguration of oneself. (Venn 2000, 155)

Both Dionysian and Apollonian spectators are incarnated by different people who, for instance, accompany, discuss, and dispute the interpretation of the results of clinical tests with Fosfo on the internet (VK n.d.; AMUCC 2016). However, what is important to emphasize here is that, if one assumes the Foucauldian condition that transfiguration does not take place within the limits imposed on it by modernity, then a self-reinvention process does not necessarily characterize or provoke transfiguration. One must go beyond it.

In my opinion, patients with autoimmunity that seek to re-create their lives through unconventional and unauthorized immunostimulating therapies, while wishing to abandon immunosuppressive therapies, are on the same trail. From the perspective of Fosfo users, a substantial part of the limitations that cancer patients encounter comprises legal norms that act as counterforces that prevent transfiguration from taking place and keep cancer patients under therapeutic oppression. Another substantial part of these limitations relates to the non-communicable disciplinary inconceivability linked to the dogmas of immunosuppression as a hegemonic therapeutic model, as taught in Brazilian medical schools. Given that, what do immunostimulant therapies have to offer to people with autoimmunity? Which story does Fosfo have to tell?

Fosfo also speaks through its users and stakeholders. In the context of pharmaceutical prohibition, to carefully listen to and participate in a forbidden narrative is an act of transgression linked to the pursuit of freedom that qualifies one's self-reinvention and opens up the possibility of transfiguration. Thus, on the one hand, accepting miracles or utopias (which are not motivated by biomedically accepted evidence as reported by transfigured Fosfo users and stakeholders) as a condition for transfiguration implies the transgression of boundaries that were established to prevent one's self-reinvention. On the other hand, since transfiguration only takes place through transgression of established boundaries, legal norms

are necessary. In this way, one's self-reinvention as transfiguration journey inevitably becomes an expression of, and therefore a means to produce, deviance as a potential groundbreaking innovation.

### *Ethical imagination and medical futures*

Established biomedicine locks cancer patients, like other people with symptoms of autoimmunity, into chronicity. The term has an ambiguous meaning; sometimes being a chronic patient means being forever ill, whereas other times it refers to the unpredictability of their illness. Biomedical chronicity appears, in this sense, as a particular temporal frame within which chronic patients not only wait for a cure that established biomedicine promises to provide in the future, but also within which they adaptively co-generate the appropriate consciousness and affects which help them to live as chronic patients. Hence, while the hegemonic therapeutic model of immunosuppression currently offered by biomedicine (as well as the newest biotechnological innovations based on the same principle) stand for a politics of fulfilment, Fosfo and other marginalized immunostimulant therapies figure as utopias. For Fosfo users and stakeholders, undergoing chemotherapy and radiotherapy is useless and somewhat disturbing, if one knows of another therapeutic possibility that may even cure. The idea of this possibility alone, supported by evidence created as much by scientists as by patients through their bionetworking activities, is very powerful, even when contested by medico-legal authorities. This is because it portrays conventional treatments not only as medically outdated and inappropriate but also as morally unsustainable.

In this scenario, the true spectator's longing to transfigure concomitantly seems to be associated with an impulse to embrace and participate in the making of another possible future that produces a rupture with the known present as an 'effect of a curative renarrativization of what has come to pass' (Venn 2000, 50). In consonance with the shared openness to accept miracles on the stage, the predisposition to embark upon a new story, or the attitude of searching for plenitude, Paul Gilroy (1993) writes about how conceiving utopias of emancipation emerge as parts of the 'politics of transfiguration' – a concept that he borrows from Seyla Benhabib (1985), together with that of 'fulfilment'. By 'transfiguration', Benhabib (1985, 84–85) explains:

I mean that the future envisaged by a theory [or, a story] entails a radical rupture with the present, and that in such a rupture a new and imaginative constellation of the values and meanings of the present takes place. The concept of fulfilment, by contrast, refers to the fact that the society of the future executes and carries out the unfinished tasks of the present, without necessarily forging new, imaginative constellations out of this cultural heritage.

Both concepts of fulfilment (associated with norm) and transfiguration (utopia) address complementary and distinct modalities of emancipation which are analogous to the Apollonian-Dionysian tension, with which Nietzsche and Foucault worked. Gilroy (1993) adopts them to address the ambiguous conditions and belongings of slave descendants within the context of the African diaspora in Europe, while he refers to their co-existence within the same person as implying a 'double consciousness'. This duplicity may be viewed as similar to the status of cancer patients who are aware of navigating through and between the formal Brazilian private and public healthcare system and its shadow by engaging in informal bionetworking activities to promote unauthorized biotechnological innovations.

### *Transfigured person, transfigured world*

When the conditions for transfiguration to occur are met (i.e., there is an exogenous transfigurative element that meets a proper receiver who wishes to experience a new story by which one inevitably participates in a transgression of norms), a proliferation of bodies and consciousnesses begins. This can be understood as a numinous experience (i.e., the way people experience their own existence and modes of feeling themselves as being alive through their encounters with the unknown as other). As Nietzsche (1872, cited in Strong 2010, 53) puts it, transfiguration takes place at a first moment as 'one's own [transformation] experience, to which, however, one is a witness'. When one experiences a tragedy *properly*, one undergoes an 'internal bifurcation' that provokes a state of ecstatic 'doubleness': 'one is literally besides oneself' (ibid., 54). As the two features of the now 'self-uninstalled' (Vilar 2018b) spectator – the Dionysian and Apollonian – are complementary facets which get along with each other dialectically, the process of transfiguration, for Nietzsche (1872, cited in Strong 2010, 55), goes on:

In this enchanted state, the dionysian reveler sees himself as a satyr, and as a satyr, in turn he sees the god, which means that in his transformation he beholds another vision outside himself, as the apollonian perfection to his own state. With this new vision, the drama is complete.

By evolving within the person, who has accepted it in a proper way, the storyteller material as the transfiguration trigger unwinds this up to a further existential potentiality, so much so that the transfigured person becomes something else or a new entity assigned with differentiated power, and it remains the same.

From a Cartesian perspective, this appears to be a flagrant contradiction. However, if one considers persons as being made of further persons, or actors that are also networks, then it appears an issue about which aspect of oneself is in charge or becomes dominant in a given

entanglement. Then transposed to the context of disputes between immunosuppressive and immunostimulant therapies, this transfiguration is the unrolling of biomedicine from inside out, through its contact with immunostimulants. So much so that biomedicine, at least partially, re-organizes itself by overlaying its current established model of immunosuppression with that part of itself which promotes its opposite principle of immunostimulation as a potential legitimate medical future to tackle autoimmunity.

Likewise, disputing a legitimate ethical position within contemporary biopolitical regimes of self and self-monitoring (Rose and Novas 2005, 441–442), immunostimulating therapies present themselves as new medical narratives capable of providing technologies and knowledge that enable the patients to recognize, validate, and recommit specific parts that co-constitute themselves (such as their immune systems), instead of suppressing them as conventional treatments do. Through contact with Fosfo, immunostimulant-users demonstrate that the self-regeneration of a person – or *cure* as transfiguration – is reached through its adequate interaction with and assimilation of an other (i.e., of non-selves within its immediate environment). However, a whole set of others belong to one's environment.

At least to some extent, one cannot change one's own reality, or self-reinvent through unauthorized treatments, without affecting the reality of others. Moreover, others may also act as sources or mediators of transfigurative storytelling materials. As Strong (2010, 54) resumes: 'The dionysian excitement can communicate this artistic gift to a multitude, that of seeing themselves surrounded by such a host of spirits, knowing that one is inwardly one with them'. When patients with autoimmunity transgress institutional borders by embracing immunostimulant therapies so as to become who they are as healthy people, they are crossing the same borders which co-organize the world of other people who are witnessing their transgression. The testimony of a forum participant, during a discussion about the results of Fosfo tests on the internet, illustrates this point:

I just met a girl who had breast and liver cancer. She has exams before and after [Fosfo]. She used Fosfo for one year and a half. Healed!!! Yes... She did not have chemo and radiotherapy. And it's not just her... It's a lot of people. [...] I met a doctor who [...] did not even want to listen [about Fosfo]. Suddenly, my uncle, one of his best friends, had cancer. Do you know that he did research on the topic and changed his mind about Fosfo? (AMUCC 2016)

Just like fear, hope can be contagious too. Hence, as other people in the Witthoeft family's village wished to know more about Fosfo and how to obtain it, one's own transfiguration directly affects other surrounding persons, while one might be transfigured through other persons' transfigurations (Howie 2013, 161).

## Conclusion

In this article, I sought to anthropologically understand the emergence of Fosfo worlds, in the context of institutional crisis and increasing judicialization of life in Brazil, in terms of transfiguration. To achieve this, I followed Fosfo as a travelling biotechnological and political artefact that circulates through and between the internet, medical offices, laboratories, ambulatories, universities, courts, advocacy offices, associations, and family homes. In so doing, I observed that, while Fosfo spreads an immuno-political agenda at multiple levels and co-generates life assemblages, those who allow themselves to be affected by it and become Fosfo users and/or stakeholders engage in practices to promote the treatment as a scientific innovation for health as acts that imply a deviant co-regulation of immunity. Paradoxically, the coming-into-being of Fosfo worlds through transfigurative encounters between Fosfo and potential life assemblages' members occurs only as entangled with innovative developments in and their regulation by established biomedicine. In this sense, Fosfo worlds responsively unfold as aligned processes of transformation, or infrastructuring, that take place by re-coding and co-opting already existing infrastructures (e.g., juridical, communicational, and scientific).

Correspondingly, by focusing on how Fosfo assemblages' members evaluate and act towards competing therapeutic models to treat cancer, it becomes possible to apprehend aspects of an immunological sociality that informs the conceptualization of persons and moralities and which are mostly not taken into account by established biomedicine. Thus, to apprehend the transfiguration of juridical and physical persons involved in Fosfo's controversy as effects of Fosfo, and through the engagement of Fosfo users, might help to understand how the materials, knowledge, legal resources, and health and moral values that they circulate and assemble – including substances, laboratory instruments, ideas of scientific innovation, online and offline exchanges, cure and necessary transgression – are repositioned through their bionetworking activities as to regenerate biomedicine. Mainly, as a science that seeks to heal.

## Acknowledgements

I would like to thank Dominik Mattes, Brigit Obrist, and Bernhard Hadolt, the editors of this Special Section, for their invitation to participate in it and for their professional revision work, patience, and friendly support during the whole peer review process. Likewise, the manuscript grew significantly through the discussion with two anonymous peer reviewers under supervision of Erin Martineau, former *MAT* managing editor. I am also in debt to Harriet Gardner, who proofread different versions of this article, and to Leah Eades, who copy-edited it. The picture that illustrates this article was taken by Fábio Queiroz (Agência AL) on 26 July 2016 in Florianópolis, Brazil. A Visiting Research Fellowship at the School of Global Studies at the University of Sussex, funded by the Deutscher Akademischer Austauschdienst (DAAD, German Academic Exchange Service), further allowed me to dedicate myself to a significant



revision of this document. Finally, my research is funded by the Deutsche Forschungsgemeinschaft (DFG, German Research Foundation), research grant nr. 419940268.

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