commons. In short, the open productive communities, which create and add value into the shared resource pools, are at the core of such an economy. Moreover, the entrepreneurial coalitions, which create added value for the market, are around the digital commons. Further, the infrastructure of cooperation is often managed and maintained by for-benefit associations, such as the free and open-source software foundations. Changing the relationship between the creative communities and the market players is arguably key for an alternative, sustainable model for the commons economy.

In this new alternative model, the extractive nature of netarchical capitalism is replaced by ethical entrepreneurial coalitions. The latter create livelihoods around the commons in ways that enable contributors and these firms to co-create commons. ‘Open cooperatives’ have been proposed as a generic concept for different forms of ethical businesses that are mission-oriented, multi-stakeholder governed, and are committed to the co-creation of commons (Bauwens and Kostakis 2014). Such post-corporate entrepreneurial forms are also sometimes called ‘phyles’; i.e. business eco-systems which sustain communities and their commons. Amongst the examples that can be cited are the Enspiral network based in New Zealand; the Las Indias community based in Spain; the Sensorica open scientific hardware community based in Canada; Ethos in the UK; and Fora do Eixo in Brazil. These new coalitions are often marked by a desire to combine three characteristics, i.e. the sharing of knowledge (openness), the sustainability of their physical production processes, and the fairness of the reward systems. Therefore, these new forms of the commons economy are inventing not only new practices which do not enclose knowledge (open business models), but also open value systems that can distribute value fairly in contribution-based systems.

Further, the great potential of this emergent system arguably lies in the four characteristics of its production methods (Kostakis, Roos and Bauwens 2015). First, by avoiding planned obsolescence in the design of the product; second, by sharing its technical and scientific knowledge for open innovation; third, by mutualizing physical infrastructures for manufacturing and relocating production through distributed microfactories/makerspaces; fourth, by using open supply chains and open accounting mechanisms for mutual coordination of prod-user communities; an open source circular economy may emerge which could contribute to the fight against climate change and ecological destruction. At the very least, this activity makes an important contribution to the ongoing dialogue on the potential challenges for the incumbent system by providing a commons-oriented vision for radical change emerging from the bottom.

See also Capitalocene and Chtulucene; Commons, the; Digital Citizenship; Digital Philosophy; Hacking Habitat; Resilience

Michel Bauwens and Vasilis Kostakis

PILL, THE (POSTHUMAN ICON)

We propose the oral contraceptive pill as one of the posthuman icons of the twentieth century. It may be easy to forget in contemporary times, where young women in the West have not lived with the fear of unwanted pregnancies, but the classic metal strip supplying three weeks of tiny white pills has had and still has a revolutionary impact on women’s lives all over the world. In fact, this small piece of
devote a substantial part of her family fortune to subsidize the bio-medical research necessary to develop the first birth control pill. The research was carried out throughout the 1950s by biologist Gregory Pincus and was eventually finalized, patented and sold under the name of Enovid.

From the very beginning of its mass adoption, the Pill became one of the major symbols of second-wave feminist movements in the West. The control of reproduction was seen as a vital means to restore women’s ownership over their own bodies, to freely enjoy sexual relations, and to improve their social status. Liberal feminist Betty Friedan – co-founder in 1966 of the National Organization of Women and author of *The Feminine Mystique* (1963) – was a passionate campaigner for women’s access to free and full contraceptive rights. Radical feminist Shulamith Firestone, in *The Dialectic of Sex: The Case for Feminist Revolution* (1970), highlighted the role of reproductive freedom and the struggle for free contraception in the liberation of women. Anticipating later developments, Firestone argued that a shift of social priorities from reproduction to contraception and the full development of reproductive technologies constituted the core elements of a feminist revolution.

Politically, the most important contribution of the Pill was to materialize and represent publicly the categorical distinction and separation of sexuality from reproduction. Instigating twentieth-century sexual liberation movements in the West, the Pill de-naturalized reproduction and enabled women to become heterosexually active without the danger of unwelcome pregnancies. Moreover, as a form of contraception it offered many advantages over previous methods: it was convenient, highly effective, female-controlled, separated from the act of intercourse, and it did not require the consent – or even awareness – of a male
sexual partner (Gordon 2007; Kline 2010; Oudshoorn 1994).

The isolation and synthesis of female sex hormones that led to the development of the contraceptive pill also prepared the ground for modern reproductive technologies such as in vitro fertilization. Moreover, by opening the possibility of motherhood to single and lesbian women (Rich 1995), the Pill paved the way for the rejection of compulsory heterosexuality through the promotion of alternative kinship systems outside the patriarchal constraints of the nuclear family.

The radical sting of the Pill is that, by making it possible for women to choose whether to have children or not, it facilitated their rejection of traditional family structures (Diepenbrock 1998). Domestic life in the patriarchal family presents clear disadvantages for women by confining them to the role of caretaking in the private sphere at the cost of exclusion from the economic sphere. It isolates men from the lives of their children, and institutes a gendered economy that segregates reproductive labour and family life from wage labour (Labora Cuboniks 2015). The Pill supports a radical sexual politics for alternative family arrangements. This has not escaped the attention of organized religions and conservative political parties, which have waged an all-out war against it. Up until today, the Pill is not easily available in Catholic countries or in countries with a strong Christian fundamentalist presence.

The Pill’s detractors have historically offered counter-arguments to stress its mixed blessings. In the 1970s eco-feminists adhered to authentic notions of female nature resulting in the rejection of any scientific manipulation of female bodies. This resistance evolved into the idea that bio-chemical contraception is politically dangerous, because it inserts women’s bodies into institutionalized practices of both liberation and control (Warren 1994). Following Foucault’s bio-political analysis of the management of reproduction and sexuality in the 1980s (Foucault 2003, 2010), the radical feminist claim of liberation via technology was disputed. Throughout the 1990s feminist studies of science and technology pointed out the dangers as well as the advantages of working within bio-political systems of hormonal, bio-chemical and genetic management of bodies in a social order based on disciplining and punishing (Oudshoorn 1994; McNeil and Franklin 1991; Haraway [1985] 1991; Roberts 2008).

Queer critiques of naturalized and essentialized gender identities and norms radicalized these critiques. On the one hand Preciado (2013) emphasized the normalizing power of the Pill that builds upon and endorses the underlying hormonal and endocrinological design of ‘normal’ female bodies. In this framework, the Pill is taken as a ‘chemical panopticon’, that is to say a micro-instance that reflects macro-power formations – such as medical-legal institutions, the nation-states and global networks of bio-genetic capitalization of life (Cooper 2011). On the other hand, with the privilege of hindsight, it has become manifest that the hiatus between reproduction and sexuality that was introduced by the Pill in the 1960s marked not only a scientific change of paradigm, but also a profound fracture within patriarchal family power formations and the perpetuation of compulsory heterosexuality. It was, therefore, a watershed moment for the feminist movement.

In the light of this rich and complex history, of all the advantages and challenges it represents, as well as its huge impact upon the lives of millions, we wonder why the Pill is not more widely celebrated as the icon of a posthumanist subject position that emancipates women.
from a naturalized regime of subjugation. Why are other images so hastily embraced as posthuman icons, like the destructive image of the mushroom cloud of a nuclear bomb, for instance, or the over-exposed mix of metal and wires in robotics? Instead of these rather overbearing images we suggest the humble Pill as one of the posthuman icons. The more modest ‘wetware’ of the Pill should be recognized for its revolutionary impact: it is a frontal attack on the naturalization of gender inequalities. The Pill testifies to the visceral call that, if nature is unjust, then we must change nature (Xenofeminist Manifesto 2015).

See also Bodies Politic; Geo-Hydro-Solar-Bio-Techno Politics; Pregnant Posthuman; Xenofeminism; Placenta Politics.

Anneke Smelik and Elisa Fiore

PLACENTA POLITICS

Placenta politics is a term that I coined to indicate the materialist feminist biopolitics of the relation between the material maternal body, the placenta and the foetus. I transpose this maternal-placental-foetal connection into a nomadic frame so as to argue that it composes a generative assemblage. The placental assemblage raises key issues of relationality, immunity and auto-immunity, which are best served by a neo-materialist philosophy of becoming and affirmative ethics within a monistic understanding of matter. I draw on the work of French feminist biologist Hélène Rouch (1987), who was inspired by the philosopher Luce Irigaray (1985a, 1985b) and by Lacanian psychoanalysis to propose the biological entity of the placenta as a third party that redefines the relationship between the maternal body and the other body, the foetus, in immunological terms. The placenta splits the subject from within, in a non-dialectical process of internal differentiations that predicates the primacy of the ‘other within’. Yet, this highly significant configuration has remained unrepresented within phallo-logocentric logic.

Therefore, I suggest moving placenta politics centre stage, but into a different theoretical direction. Firstly, placenta politics upholds an affirmative and non-aggressive bio-politics that opposes the military terminology and concepts that are customary in scientific discussions of immunology. The immunization process is usually formulated in terms of the individual and collective bodies’ struggle for homeostatic stability and protection against external aggressive forces. Secondly, this approach to immunology has been taken as an analogy for politics and governance. For instance, Esposito’s work on bio-politics (2008b) explores the immunological political economy of hospitality and hostility. I find it disappointing that what was originally a politics of life – bio-politics – which also included a reappraisal of the politics of dying and letting die, has become almost exclusively focused on thanato-politics, to use Foucault’s term (1977). In contemporary discussions, this issue blends with necro-politics (Mbembe 2003), that is to say extermination and extinction. Bio-politics should not position life only on the horizon of death, but also as the generative force of both human and non-human organisms (Braidotti 2006b). In terms of the immunological debate this means that the question is not that and how the organism is capable of self-preservation at the expense of some of its weak or diseased parts, but rather that in most cases it actually does not attack them. And I would like to add that, specifically in pregnancy, the organism does usually not expel the foetal other, but rather hosts it and nurtures it.