



Bioeconomic governance in the EU after the molecular revolution: An introduction

Andrea Rossi
Lancaster University

Modern configurations of power have established a necessary bond between species life and political economy. This paper provides an initial theorisation of the field of bioeconomy in the context of biopolitics literature and an account of its empirical significance through a preliminary analysis of the European Union (EU)'s recently-launched 'knowledge-based bioeconomy' (KBBE) programme. In the first two parts of the paper, I work out Michael Foucault's notion of biopolitics through Bazzicalupo's account of bioeconomy, outlining some of the core features of the contemporary bioeconomic *dispositif*. In the third part, I briefly illustrate how the EU has historically represented a privileged site of bioeconomic relations of power. I finally introduce a number of questions concerning the relationship between the governance of the KBBE and the wider EU's bioeconomical project, focusing, in particular, on the biopolitical implications emerging from the capitalization of biotechnologies.

This paper is part of an ongoing project aimed at investigating the extent and nature of the intersections between political economy and biopolitics in contemporary Western societies. More specifically, it delineates the broad theoretical framework within which the project will be developed, further explaining how the empirical object of the research – i.e. the European Union (EU) and its recently-launched ‘knowledge-based bio-economy’ (KBBE) programme – fits in this framework. This paper therefore offers what might be called a preliminary cartography of the field of bioeconomy, as defined by the EU’s KBBE programme and further elaborated in the work of Bazzicalupo¹. The paper provides an initial theorisation of the field of bioeconomy in the context of biopolitics literature and an account of its empirical significance. In that way it provides some of the ground for a more sustained critical engagement with the newly emergent problematic of ‘bioeconomy’ in general, and that of specific aspects of the EU’s KBBE in particular. Hence the sub-title to the paper ‘An introduction’.

In the first two parts of the paper, I work out Michael Foucault’s notion of biopolitics through Bazzicalupo’s account of bioeconomy. I thus illustrate the intimate relation between biopolitics and political economy established by political modernity, further outlining some of the core features of the contemporary bioeconomic *dispositif*. In the third part, I briefly illustrate how the European Union has historically represented a privileged site of bioeconomic relations of power. I then introduce a number of questions concerning the relationship between the governance of the KBBE and the wider EU’s bioeconomical project, focusing, in particular, on the biopolitical implications of the capitalization of biotechnologies.

¹ For a definition and an extensive analysis of bioeconomy see Bazzicalupo, 2006a.

The biopolitical paradigm

Seeking to transcend traditional understandings of power anchored to the juridical model of sovereignty – and thus formulating an analytics of the ‘extremities of power’ (Foucault 2003: 27) – Michel Foucault famously came to individualize disciplines and biopower as two of the major *dispositifs* of political modernity (Foucault, 1977, 1998, 2003, 2007, 2008). Suffice it to say that disciplinary technologies – emerging in the eighteenth century in institutions like prisons, mental hospitals, armies, schools, universities and factories – are power/knowledge assemblages addressing the individual body so as to extract time and labour from it and promote its docility through surveillance, according to strategies quite foreign to the sovereign model of power (see Foucault, 1977). Biopolitics, which came into being at around the same period, also addresses the body, but not in its immediate individuality. Biopolitics is ‘the set of mechanisms through which the basic biological features of the human species became the object of a political strategy’ (Foucault, 2007: 1): biopolitics takes man as species-being, in its biological futures, as its referent object. In so doing, it comes to design a set of techniques and regimes of knowledge starkly contrasting those traditionally employed by the sovereign *dispositif* (even though, as we shall see, the two formations of power will long exist alongside one another).

The power of the king might be reduced, in its essential outline, to ‘the right to decide life and death’ (Foucault, 1998: 135). Such right of death and life is however dissymmetrical: ‘the sovereign exercised his right of life only by exercising his right to kill, or by refraining from killing... “power over life and death” was in reality the right to take life or let live’ (ibid.: 136). The ratio of this matrix of power is to be found in the sovereign’s will to retain control over his territory – the ultimate political end of the

king. Its function ultimately consists in 'a right of seizure: of things, time, bodies, and ultimately of life itself' (ibid.).

Biopower does not aim at securing the prince's territories or power. On the contrary, its objective is foreign to the self-referentiality of the sovereign paradigm, it being organized around an exogenous goal, i.e. the well-being of the population. Biopolitics substitutes a governmental style designed to manage biological and economic phenomena according to their immanent normativity – their natural, irreducible 'thickness' – for the obtrusiveness and arbitrariness of the sovereign intervention. Its ratio is incrementative rather than conservative, as it was in the case of sovereignty: 'making life live' – the landmark of biopolitics – means securing, but above all *increasing*, species life.

The emergence of this power over life was not, however, the result of a sudden breakthrough which, in the eighteenth century, utterly disrupted the sovereign assemblage. Rather, it is to be seen as the outcome of a steady shift which occurred in the Western world starting from the sixteenth century, when the problem of *government* first entered the space of sovereign rule. Here, the notion of government refers to the meaning the term had until the sixteenth century, when it indicated not only the political management of the state, but, more generally, 'the control over oneself and others, over someone's body, soul or behaviour' (Foucault, 2007: 122). Its matrix dates back to the development of the pastorate, introduced and institutionalized by the Christian Church in the third century: a form of power mirroring the flock-shepherd relationship, where a 'beneficent' power is exercised over a multiplicity of people in order to guide and lead it to salvation (Foucault, 2002: 301-303). Government, accordingly, is 'an activity that undertakes to conduct individuals

throughout their lives by putting them under the authority of a guide who is responsible for what they do and for what happens to them' (Foucault, 2007: 363).

The government of men is, according to Foucault, the focal point of political modernity (and, as we shall see, of modern biopolitics). Its centrality is shown by the process Foucault refers to as the *governmentalization of the state*, i.e. 'the tendency, the line of force, that for a long time, and throughout the West, has constantly led to the pre-eminence over all other types of power – sovereignty, discipline and so on – of that type of power that we can call 'government'' (ibid.: 108).

Leaving aside all the questions concerning the ambiguities of the concept of governmentality – which have been extensively discussed elsewhere (see, for example, Gordon, 1991; Dean 1999; Senellart 2007) – it is crucial to stress how this notion allows a sheer reappraisal of modern politics, traditionally interpreted according to the sovereign paradigm. By getting round issues of legitimacy, natural rights, social contract, delegation of power etc, governmentality refocuses political analysis upon the mundane techniques of government, upon 'how this way of governing develops, what its history is, how it expands, how it contracts, how it is extended to a particular domain, and how it invents, forms and develops new practices' (Foucault, 2008: 6). That is, governmentality is a theoretical device specifically meant to unveil the multiple dimensions of state government (Foucault, 2007: 120). The investigation of its historical development is, in this respect, crucial to pinpoint the location of biopolitics within the arena of modern politics.

The first governmental assemblage, irreducible to the mechanisms of sovereign power, to become an object of systematic theoretical reflection emerged out of theories of *raison d'état* in the seventeenth century. What is involved in *raison d'état*

'is essentially identifying what is necessary and sufficient for the state to exist and maintain itself in its integrity' (Foucault, 2007: 258). The goal of the state, accordingly, is 'everything from being to well-being, everything that may produce this well-being beyond being and in such a way that the well-being of individuals is the state's strength' (ibid.: 328). Its ratio, then, is foreign to the sovereign's absolute self-referentiality (i.e. its concern with retaining power over its territory and subjects), as it is from its modalities of intervention. *Raison d'état* is grounded more on a (over-)regulatory type of government and a detailed administration of individuals' activities rather than on judicial forms of power: by means of a 'technological assemblage' called police, it comes to regulate issues concerning the number of citizens, the necessities of life, health, occupation, the coexistence and circulation of men, etc. – that is, it explicitly addresses itself to the government of men.

Yet, however much *raison d'état* might have reconfigured and undermined the power of the sovereign, it still stood in a relation of continuity with the latter: 'the postulate of police regulation was... that things were indefinitely flexible and that the sovereign's will, or the rationality immanent to the ratio, to *raison d'état*, could obtain what it wanted from them' (ibid.: 343). The new form of governmentality arising in the eighteenth century – liberalism – will just call into question this latter assumption, positing that 'a regulation based upon and in accordance with the course of things themselves must replace a regulation by police authority' (ibid.: 344). New knowledge apparatuses – which first formulated the concept of population as an autonomous object of knowledge and thus turned the study of wealth into political economy – will be deployed so as to provide the principle of legitimation of this new type of governmentality, whereby an art of government could finally acquire 'its full scope and consistency' (ibid.: 101).

To be sure, the problem of population was not absent from doctrines of *raison d'état* altogether. For the latter, however, population was not an objective in itself: police regulation was concerned with population only inasmuch as it was a key variable for the growth of state's energies (ibid.: 351). With the rise of liberal governmentalities, the 'perspective of population' will appear as an 'end in itself'. For the first time, the specific, dense reality of population will be acknowledged. From now on, population will be conceived of as a phenomenon governed by spontaneous, thick processes, which could by no means be subjected to the obtrusive regulation of police (ibid.: 104-5).

In the field of economics, this will imply a shift from the analysis of wealth to the emergence of political economy. Political economy 'develops when it is realized that the relationship between population and resources can no longer be managed through an exhaustive regulatory and coercive system that would strive to increase the population by increasing resources' (ibid.:77). Henceforth, economic processes will be conceived of – much like the dynamics of population – as natural or quasi-natural phenomena which have to remain untouched by state regulation. Adam Smith's 'invisible hand' may be considered as the original paradigm of this analytical perspective. Any direct intervention into the economy – Smith claims – would be disruptive, as it would interfere with the working of the 'invisible hand'; the device ensuring that the myriad of contrasting private interests are turned into the collective good (Foucault, 2008: 278-80).

New instruments and techniques of government (what Foucault calls 'apparatuses of security') will thus be devised, which will no longer seek to control human activities by means of a detailed and intrusive regulation. The imperatives of liberalism will be to 'facilitate, laiser faire, manage' (Foucault, 2007: 352-3). Whereas police sought to

intervene upon economic and social processes by inhibiting those phenomena considered dangerous for the ordered growth of state's forces, security apparatuses will seek to work in accordance with the natural development of such processes. An internal (rather than juridical or regulatory) criterion for constraining sovereign interventions will thus be established. The activity of government will no longer be assessed in terms of its origins, legitimacy, or justice, but chiefly in terms of its success (ibid.: 16-7). Under liberal governmentalities, the market will come to constitute a 'site of veridiction', the 'supreme judge' of governmental practices. A successful government will now function according to the truth of economic processes and of the market (ibid.: 31-2).

It is within this framework – the advent of political economy and of the 'perspective of population' – that biopolitical apparatuses will first be deployed: 'liberalism [is] the general framework of biopolitics' (Foucault, 2008: 22). The discovery of the 'thickness' of population and economic dynamics will allow for the rationalization of 'the problems posed to governmental practice by phenomena characteristic of a set of living beings forming a population: health, hygiene, birth rate, life expectancy, race' (ibid.: 317). Under liberal regimes of government, as we have seen, population appears as a specific and 'dense' reality, subjected to specific laws, and 'dependent on multiple and artificially modifiable factors' (Foucault, 2007: 366): biopolitical governance will just analyze and intervene upon these variables in order to govern the 'natural' phenomena inherent to the biological features of a population, so as to promote its life.

Biopolitics as bioeconomy

The close relationship between biopolitics and political economy is hinted at throughout Foucault's work on power (see especially Foucault, 2007, 2008). His genealogy of the governmentalisation of the state is, after all, founded on the intuition that government is the result of the 'introduction of economy into political practice' (Foucault, 1991: 92). Furthermore, with the advent of liberalism, the nexus government-economy will appear in all its strength: political economy is no less than the 'truth' according to which liberal governments have to regulate their own intervention into society. Also, considering the relation Foucault ascertains between liberalism and biopolitics, it is possible to detect an implicit triangulation between economy, liberalism and biopolitics, which is in itself revealing about the relation economy-bios. Such a link is all the more obvious in the account of mechanisms of security, where, for example, the problem of the scarcity of grain is at the same time both a biopolitical and an economic issue – or, better said, a matter of biopolitics managed through the techniques and knowledge apparatuses provided by political economy (Foucault, 2007: 29-49).

And yet, Foucault never fully explicates the nature of the link biopolitics-economy, which simply remains in the background of his analysis, the explicit objective of his investigation being 'the emergence of [the] regime of [economic] truth as the principle of the self-limitation of government' (Foucault, 2008: 19). Foucault's genealogy of government is in fact mainly concerned with the *anti-governmental effects of economic regimes of knowledge*, rather than with the power relations engendered by economics and economic practices (Bazzicalupo, 2006a: 39-47). This is also proved by the analysis of the crises of governance carried out in *The Birth of Biopolitics*. Here Foucault aptly points to how the ordoliberal and anarcholiberal regimes of

knowledge have reduced, in the twentieth century, the range of legitimate governmental interventions, while expanding the powers of the economy. His account of American neoliberalism unambiguously points to how the economical grid (that is, the analysis of market relations) has become 'a principle of intelligibility and a principle of decipherment of social relationships and individual behaviour', while the market itself is nowadays thought of as a 'permanent economic tribunal confronting government' (Foucault, 2008: 243, 246).

Even more revealing appears the description of the ordoliberal regime, according to which the proper management of the economy ought to be regarded as the only criterion for creating political legitimacy and, ultimately, political sovereignty (ibid.: 75-95). Addressing the situation of 1948 Germany – which, after the two World Wars and the failed experience of the Weimar Republic could no longer claim a right to political legitimacy or representativeness – the ordoliberals saw in the creation of a space of freedoms – economic freedoms – 'a point of attraction for the formation of a political sovereignty' (ibid.: 83). In this, the role of government would merely be that of creating the institutional framework needed for the formation of a free market, out of which social and political bonds would subsequently stem.

Here an artificialist idea of the market comes to supersede liberalism's naturalist conception of economic phenomena: the market is something to be carefully designed, and this is precisely the task of politics. This implies – Foucault notices – an epochal shift in the relation between sovereignty and economic freedoms. Whereas, according to the liberals, political economy was simply expected to limit the sovereign's abuses, according to the ordoliberals, economy becomes the one apparatus upon which the state can found its legitimacy. From a biopolitical perspective, this might be regarded as a convincing description of how the economy,

by virtue of its 'wise' management of life, has become the major site of contemporary biopolitics. It is not primarily politics, but *economy*, that is to be in charge of population's life: government has to restrict itself to making the bioeconomic play possible.

In other words, Foucault has convincingly shown how economy has become, throughout the course of modernity, both the *modality* of political power (the strategic logic of the economy is the only principle able to legitimize the activity of government) and the main *object of power* (governing means primarily governing through the economy, however 'distant' and unobtrusive such government might be). However, his analysis has somehow neglected a crucial aspect of modern biopolitics, that is, 'the strategic governing on the part of the economy... those praxes of subjectification, those economic institutions and organisms which are themselves government and powers, often anti-statist and antagonistic to political power but, however that may be, still powers' (Bazzicalupo, 2006a: 44)². What Bazzicalupo here points to is, in particular, the need to follow a path of research concerned more with the governmental effects of economic theories and praxes (i.e. how these have come to know, shape and control our lives) than with the (centralized) government of the economy.

Modern economy appears as the key point of articulation between politics and life: 'Economy represents the most extrinsic linkage between politics and biological life... It is internal to life because it concerns that set of needs, necessities, desires rooted in the biological constitution... It is internal to politics because... every politics works

² All translations from the original Italian are my own.

on economic matters – even more so when it fully turns into biopolitics’ (Esposito, 2006: viii).

Every regime of economic knowledge presupposes a theory of human needs and desires. Economy just works by objectivising (thus reducing and stabilising) the vital exigencies of the human, presenting them as necessary and natural. It is by virtue of this naturalization of life that the economy takes on a necessary, undisputable – scientific – aura. However, every economic theory is necessarily rooted in a ‘non-scientific’ conception of life and human existence, which is somehow subsequently concealed so as to make it appear as the only legitimate, objective description of life. Economy authoritatively ‘dictates’ what we are, what our vital needs are and what we ought to desire to be - what we should become (Bazzicalupo, 2006a: 17). This implies that modern economy is not only a mechanism of self-preservation, of self-defence from natural accidents, but implies – aims to – an ‘endless increasing of life’: modern economy ‘is obsessed by that *surplus of profit*, that makes the productive cycle possible and thus aims at a spiral of growth, and by that *surplus of need*, that triggers the spiral of consumption... a surplus that always becomes the basis for further exigencies’ (ibid.:48).

The biopolitical dimension of modern economy is already apparent in such a conceptualization. But how does economy exercise its power over life? It is precisely in that surplus of life, in the hiatus between what we are and what we could be (i.e. what we are asked, urged to be by economic discourses) that the economy deploys its governmental power, which ‘opens life up and subjects it to a norm of development, imposing an incrementative process on it’ (ibid.: 50). It is by means of such subtle, non-coercive intervention that the economy gets a grip on life, moulds and controls human needs and desires.

The economic *dispositif*, in this respect, seems to employ the same ratio, the same devices described by Foucault as the classical tools of biopolitics. First, economy purports to manage life according to its 'internal normativity', to the intrinsic laws of life (laws which, however, as we have seen, are arbitrary, the product of the very same process of objectification/subjectification sustained by economic discourses themselves) so that 'our complying conduct appears spontaneous' (ibid.: 53). Thus, the 'incrementation process' that bears down on life is not an imposition in actuality: there is nothing here of the fearsome, coercive power of the sovereign's sword. Rather, this is something closer to Deleuze's picture of a widespread, modular control (Deleuze, 1995), where we are constantly stimulated to cooperate with the system – a system which, in turn, promises to indefinitely ameliorate our life conditions (Bazzicalupo, 2006a: 51). This represents a second point of intersection between bioeconomy and Foucault's account of biopolitics, namely, their common pastoral matrix. Economy is a sort of secularized pastorality, whose authority stems from the discourses of truth it circulates, from the goodness of its aim ('every economy is an economy of salvation') and, finally, from its knowledge of the means necessary for us to get hold of that surplus of life it promises to deliver (ibid.: 53). Here, ultimately, lies its appeal: it is nearly impossible to resist a power which promises to indefinitely take care of and ameliorate your life conditions.

Yet, there is no single strategy employed by economy to govern our lives. The nexus life-economy has been thought of and articulated differently by different regimes of knowledge. Following Bazzicalupo (ibid.), it is worth introducing a suggestive genealogy of modern economy, through an account of three of its main apparatuses of knowledge: pre-classical, classical, and marginalist.

Pre-classical economy (i.e. pre-Smith economy) may be said to work primarily with 'empirical phenomena and its observation which let them be in their reality, in their disordered concreteness' (ibid.: 61). Here subjects are thought of in a 'radically empirical way, emergent from the [economic] praxis in which they reveal themselves, in opposition to any transcendental deduction or psychological genesis' (ibid.: 62). Subjectivity is investigated in its immanency, in its adherence to the 'mass of the productive vitalistic demands which are the core of the economic' (ibid.).

With the emergence of *classical economy* (Smith, Ricardo, Marx), however, the economic discourse will seek to reduce such 'multiplicity of life's demands to a unitary bios of the society' (ibid.: 69). For pre-classical economy, exchange-value was essentially use-value, this meaning that the value of a commodity was fixed by the utility it represented for a potential buyer, so that such value was substantially subjected to the 'disordered flow of individual needs-desires'). For classical economy, value was *labour-value*, meaning that labour – the amount of physical work and vital energies spent for making a commodity – was the key variable to determine the price of a good: 'attention is turned away from the unpredictable and subjective disorder of consumption towards the objectivity and inter-subjectivity of production and thus of labour, much easier to foretell and to govern' (ibid.: 70). This, in turn, carried three main consequences. First, with the emphasis on production and increment, the concept of surplus – central to modern economy, as we have seen – made its first appearance. Second, the classical theory came to 'think the living not as an agent of choice, driven by the desire of things and satisfaction, but as the mortal who spends his life wasting his energies to earn his living, to survive, under the aegis of necessity' (ibid.: 72). Third, the focus on labour and production entailed the introduction of the economic into the complexity of society and thus of politics: 'society lives in the

socializing order of the market inasmuch as there is cooperation, that is, labour division' (ibid.: 73-4). For Hegel, labour is precisely the medium term between the society of nature and civil society: 'the latter introduces an element of cohesion and education in the sphere of natural needs; it introduces life in the political realm', thus unifying and organizing the plurality of interests (ibid.: 74). A firm link between economy and politics was thus established: economy is intrinsically political, while politics is articulated around economic relations: up until the dismantling of the welfare state, 'labour will continue to be the 'pass' for social participation' (ibid.: 76-77).

With the advent of the *marginalist school of economics*, the classical synthesis between politics and economy will nonetheless be disrupted (ibid: 82-88; see also Bazzicalupo, 2006b). Apparently, marginalism seems to recuperate the pre-classical emphasis on the irreducibility of individual needs-desires to any transcendental-political synthesis. Labour loses its political function and, as any other enterprise, is reduced to a cost-benefit calculus, while social bonds are turned into the quantum of utility an economic exchange can provide, this entailing the fall of any common, overarching political end. The anarchy of subjectivity and the disordered flow of individual desires (*desires* rather than needs) come to represent the only criterion of value, and everything, as Foucault (2008) had already noticed, can be economically valued in a neoliberal regime.

And yet, such emphasis on the ungovernable, anarchical nature of desire is only the starting point of marginalism: 'regimes of knowledge cannot describe life without organizing it in forms, which are the vehicle of apparatuses of control and power: in this case in the idea of the rational will of the action' (Bazzicalupo, 2006a: 88). The rational will is here supposed to turn desire into choice and preference, thus

subjecting choice to the economic-strategic rationality of the economic actor. It is precisely the intrinsic rationality of the economic actor to provide power with a steady foothold: by rendering the action predictable (because its logic is known – it is the rational calculus of utility), the anarchy of desire becomes somehow controllable and pliable. This, in particular, carries a crucial consequence: the circularity between the rational action of the single individual and that of everyone (each of us has different desires, different goals, but everybody acts within a rational-strategic framework) leads to price equilibrium: ‘one can always find someone willing to buy, if what you supply is proportional to your will to sell,’ this meaning that prices will be fixed ‘at a level which is convenient for each and everyone.’ (ibid.: 90). Thanks to the common rationality of economic actors, order will be created out of the disorder of individual desires. Subsequently, econometric and statistical sciences will attempt to further reduce the unpredictability of desires. Through the study of the reaction on the side of the demand to changes introduced in some features of a commodity, for example, economic knowledge will be able to determine an objective measure of utility thanks to which it will be possible to create, influence and control the demand (ibid.: 91-92).

Even if many other themes and theoretical angles crowd the economic debate (and it is fair to mention here, in passing, how the very assumption of the perfect rationality of choice is questioned by many, including the ordoliberal Hayek), the marginalist framework can be said to still largely influence the contemporary economic scenery. And yet, however influential marginalism might still be, it cannot account by itself, in its theoretical formulation, for the complexity of the contemporary bioeconomic assemblages. As Esposito (2006: x) points out, every economy is, by definition, always in crisis, due to its pretension to ‘govern what it is radically ungovernable – i.e. the impulses, needs and irresistible powers of bios’; all the more so in the case of

neo-liberal theories, which (at least in their classical formulation) strive to reduce the complexity of the social to the rational character of economic actors. A more nuanced account of the contemporary bioeconomic regime is then necessary if we are to overcome the dry portrait of the economic drawn by marginalism.

In late modernity, bioeconomy has become the dominant configuration of Western politics: economy has utterly taken on itself the task of managing life, its needs, desires, impulses and transformations. Following the dismantling of the welfare state (which used to represent the political government of life *par excellence*) and the above-mentioned explosion of the nexus economy-politics, economy appears nowadays as the only legitimate power over life. In the process, life – the body and its ‘reasons’ – has become the central – maybe the only – hinge of political legitimation (Bazzicalupo, 2006a: 111-12; see also Rose, 2008).

It is the economy, by virtue of its utilitarian logic, which is the only institution deemed capable of looking after life. Politics, accordingly, finds its only *raison d’être* in its capacity of sanctioning, coordinating or solving the aporia of the economy and of its social implications: its role is above all technical and cannot prescind from the power of the economy to legitimately ‘make life live’ (Bazzicalupo, 2006a: 58). Labour today is nothing but human capital, it has lost its political meaning, its capacity to create a socio-political bond. Accordingly, production is not anymore the hinge of economy – consumption has taken its place. Consumption (i.e. our desires, our ability to choose between commodities) is the driving force of the economy and economic power-knowledge just seeks to act upon our desire for consumption, by indicating what we could/should become, what in us is transformable and perfectionable and what kind of items (material and immaterial ones – consider the industry of leisure time) could ameliorate our life conditions (Bazzicalupo, 2006a: 118-125).

In such a scene – where political power is subjected to the whims of the economy, unable to indicate a communal, social horizon (beyond the individual self-satisfaction through consumption) – power becomes extremely widespread and dispersed throughout society: a mass of contradictory, antagonist micro-powers with no common direction or purpose beyond the empowerment of our lives. There is nothing here of the panoptical model of surveillance described by Foucault: ‘myriads of agencies... oversee our responsible and reliable conduct as consumers’ (ibid.: 119). It is a ‘multifarious and diffused power, unarmed but extremely strong which... directly penetrates our lives and, in so doing, takes on unpredictable forms through contamination by the energies, the influences that differentiate each of us’ (ibid.: 125).

This is arguably why the formalism of marginalist theories is not able to grasp the complexity of the economic, and neoliberalism is always in a state of quasi-crisis, in a state of perpetual transformation meant to overcome – or, at least, postpone – the crisis. Economy is crossed and ‘destabilized by myriads of heterogeneous and unpredictable thrusts’ (ibid.: 60) which create a ‘surplus of meaning’ irreducible to any theory of rational action: while economic knowledge seeks to name and control individual desires and aspirations, the latter, in turn, ‘modify the economic reality and provide the market, apparently linear, with a symbolic substance’ (ibid.: 149).

The ‘knowledge-based bio-economy’: the EU as a bioeconomic polity

The rationality of a bioeconomical order of government has substantiated the EU integration process since its inception. Governing the EU essentially means governing through the economy. The Union has never been reluctant to present itself as governing through the aseptic principles of a scientific management of the

economy, as a 'pure' technocracy – a regulatory state (Majone, 1994). It is in this perspective that the institutionalization of the European Economic Community (EEC) and its following developments may be analyzed in terms of the organization of bioeconomic relations of power on a European scale.

Despite the formulation of a number of federalist projects aiming at the creation of a European centre of sovereign authority, the functionalist thesis – positing that integration was to be pursued through a step-by-step process starting from the integration of the economy (see Haas, 1958) – finally prevailed. The EEC objective was then to 'constitute a European regional economic space as an independent and autonomous arena of economic activity' (Beeson and Jayasuriya, 1998: 316). The problem of government in the ECC was not about sovereign order, but just about the instrumentalization of economic freedoms: 'Freedom of movement for persons, services and capital' (TEC art 3) was deemed to promote 'a harmonious development of economic activities, a continuous and balanced expansion, an increase in stability, an accelerated raising of the standard of living and closer relations between the states belonging to it' (TEC art 2). The abolition of internal border controls unmistakably reflected a strategy where freedom – the unrestrained pursuit of self-interests across the ECC territory – was thought of as optimizing economic processes across the European territory (see Huysmans, 2005: 94). It is through a number of economic *dispositifs* – first of all the institutionalization of a space of economic freedom – that life in the European arena has been traditionally governed and secured. EU governance is primarily deemed to provide economic actors with an institutional framework able to secure their interactions and competitive interplay.

Seen from this perspective, the influence of the ordoliberal political-economic order is apparent. The European Market is not conceived of as a natural sphere with its own

immanent dynamics. It is rather an artificial construction, the product of conscious institutional and legal decisions (Walters and Haahr, 2005: 42-64). The case of competition policy is instructive: the EC set up a number of principles – prohibition of practices like the abuse of dominant position, the fixing of prices or the limitation of production – meant to ensure the proper functioning of the market. In this, the Common Market clearly mirrors the ordoliberal ratio, according to which government is meant to create ‘the legal, institutional and cultural conditions that will enable an artificial competitive game of entrepreneurial conduct to be played to best effects’ (Burchell, 1996: 27).

All the subsequent developments of the ECC buttress this governmental rationality, founded on the primacy of the economic over the political. The completion of the Single European Market (SEM) in the late 1980s/1990s did not only aim at removing all the barriers to the free circulation of persons, services and capital. It further adjusted national monopolies so as to guarantee the full access of both consumers and suppliers to the Common Market. The SEM ‘extends the requirements to public tendering into several new major sectors: energy, transport, water, telecommunications and public services’. Thus, ‘activities previously conducted under the auspices of the public sector, and governed through bureaucratic mechanisms are now to be exposed to market rationality’ (Walters and Haahr, 2005: 61).

If the SEM further expanded the market’s powers to decide upon sectors strategic for the government of life (energy, transport, water, telecommunications and public services), so did the latest attempts to rearrange the EU economic space according to the imperatives of competition and innovation. Aimed at making the European Union the most competitive knowledge-based economy in the world by 2010, the 2000 Lisbon Agenda (European Council, 2000, 2005; European Commission, 2005a,

2005b, 2005c, 2007) is primarily based on an economic pillar meant to help the economy 'adapt constantly to changes in the information society and to boost research and development' (European Council, 2000). Through a mechanism of soft governance, the Lisbon Programme seeks to strengthen the competitiveness of the (both private and public) research and education sectors, so as to enhance the economic profitability of knowledge – the driving force of post-Fordist economies, according to the neoliberal dogma (see OECD, 1996, 1997). The upgrading of human capital and innovation – two landmarks of the American anarcho-liberalism – are here conceived of as key variables for the EU 'to maintain its economic dynamism and social model' (European Council 2000). In this, the role of the Union is 'to act as a catalyst... by establishing an effective framework for mobilizing all available resources for the transition to the knowledge-based economy' (ibid.). As a number of social theorists have suggested, the blunt introduction of knowledge into the economic calculus of productivity is one of the cornerstones of contemporary biopolitical regimes – the most recent manifestation of capitalism's tendency to include within itself more and more portions of human life (see Hardt and Negri, 2000, 2004; Virno, 2004).

A bioeconomic rationality of government – the increase of the powers of the market coupled with the capitalization of more and more sectors of life – has thus steadily made its way into the EU. If since its inception the EU has assigned to economy a key (if not exclusive) role in the management of life, the domains where the bios has been knotted to the economic have relentlessly increased. The attempt to capitalize molecular life through the 'knowledge-based bio-economy' (KBBE) programme is just the more recent – and arguably more revealing – chapter of this trajectory. Janez Potočnik, the EU Science and Research Commissioner, has voiced this clearly: 'As

citizens of planet earth it is not surprising that we both turn to 'Mother earth,'- to life itself - to help our economies to develop in a way which should not just enhance our quality of life, but also maintain it for future generations' (Potočnik, 2005: 2).

Presented as 'one of the most important components of the EU's efforts to forge the world's most competitive knowledge-based economy'³, the KBBE programme aims at setting up a number of governmental mechanisms meant to enhance the innovativeness and competitiveness of the European biotech sector (i.e. research institutes, biotech companies, etc.), thus incrementing its economic exploitability (European Commission, 2002, 2005e, 2005d). Here, more than anywhere else, the bioeconomic ratio, the nexus bios-economy, appears in all its strength, amplified by a sort of endless cross-reference game between life and capital. On the one hand, life is thought to be endlessly translatable into economic value, and to be always potentially productive of a surplus of life. On the other hand, economy is believed to naturally tend toward an ever-increasing growth, while promising to indefinitely produce 'more life', that is, ameliorate our life conditions. That obsession with the 'incrementation of life,' with 'forcing life open' so as to produce a 'surplus of life', is here, more than anywhere else, apparent. This is, after all, what the biosciences unequivocally attempt to do – consider, for instance, stem cell technologies (see below): bioeconomic power/knowledge act upon the gap between what life – molecular, but also human life – is and what could/should become.

Such 'remaking of life and death' (see Franklin and Lock, 2003) inexorably prompts a number of questions as to the status of contemporary bioeconomy and, more specifically, to the entangled relationship between molecular life and capital it has

³ http://ec.europa.eu/research/biosociety/kbbe/basics_en.htm (EU 'Biosociety and Knowledge-based Bio-economy' website).

engendered. Starting from the assumption that biotech is today one of the main drivers of 'economic development, inward investment, and international competitiveness' (Rose, 2008: 44), the scholarship on biocapital has by now extensively investigated the material and epistemological dimensions of the alliance formed between capitalism and biosciences (see, for a review, Helmreich, 2008).

This body of literature has forcefully pointed to the 'coproduction of the life sciences with political economic regimes' (Sunder Rajan, 2006: 4). If, on the one hand, the programme of financial deregulation initiated in the 1970s has been the necessary precondition for the massive flow of investments in basic and applied research in biotechnologies, on the other hand, biotechnologies have provided a fertile ground for the kind of financial speculations upon which the current global capitalist system is founded. And, more importantly, investments in the biosciences have allowed overcoming the decreasing rates of growth and production characterizing Fordist economies in the late 1960s and 1970s. Biotechnologies have, in this respect, contributed to the shift toward post-Fordists, knowledge-based economies. They have done so through defining a new 'finance-dominated regime of accumulation' in which 'the evaluation of future profits becomes the decisive factor in determining price' and where 'promise' becomes 'the fundamental of ... production: it enables production to remain in a state of perpetual self-transformation, to anticipate and escape the possible limit to growth long before it has even actualized' (Cooper, 2008: 23). In short, a regime that 'installs speculation at the very core of production,' relying on 'pre-emption, the ability to anticipate the next wave [and] to capture production itself, in its emergent possibilities, the variable code source from which innumerable life forms can be generated' (ibid.: 10, 23).

A case in point of such 'a tight institutional alliance between the arts of speculative promise and risk taking and actual culture of life experimentation' (ibid.: 142) is the economic assemblage installed around research on stem cells and – more generally – regenerative medicine. Whereas reproductive medicine (such as in vitro fertilization) aims 'to culture the fertilized eggs to terms... in the form of future individual organisms', stem cells research does not aim 'to produce the potential organism, but rather biological promise itself, in a state of nascent transformability... the biological promise becomes self-regenerative, self-accumulative and self-renewing. It wants to culture the [embryonic stem] cells in such a way that is able to perpetually regenerate its own potentiality, in a form of not-yet realized surplus of life' (ibid.: 140). And such scientific enterprise is incorporated in a specular 'economic structure founded on the highly financialized, promissory forms of accumulation... a market in embryonic futures, one that brings the promise of capital together with the biological potentiality of cell lines and attempts to conflate the two' (ibid.).

In the midst of this synthesis between bioscientific and economic regimes of knowledge, our very understanding of life has undergone major transformations. Sunder Rajan (2006: 136) sees a 'reconfiguration of ideas of life itself, that leads to the implosions of the valuation of life with valuations of the market' where life becomes 'something that can be invested in.' In particular, 'promissory futures change the grammar of life, which now gets transformed into a calculable market unit' (ibid.: 34), while genomics 'allows us to conceive of life in informational terms... that can be packaged, turned into a commodity and sold as a database' (ibid.: 16). Bioeconomy and the molecularization of biopolitics have decomposed vitality 'into a series of distinct and discrete objects that can be rendered visible, isolated, decomposed, stabilized, frozen, banked, stored, commoditized, accumulated,

exchanged, and traded across time and space, organs and species, and diverse contexts and enterprises, in the service of bioeconomic objectives... molecularization is conferring a new mobility on the elements of life, enabling them to enter new circuits – organic, interpersonal, geographical, and financial’ (Rose, 2008: 46).

Also, by pointing to the calculability of life, biocapital has engendered new kinds of subjectivity. The ‘grammar of promissory articulation that concern facts about life itself’ reconfigures ‘subject categories away from normality and pathology toward variability and risk’ (Sunder Rajan, 2006: 167). The articulation of a twofold discourse of risk at play in biocapital – which, ‘on the one hand, concern[s] the probability of future disease that genomic technologies can foretell and, on the other hand,... concern[s] the high-risk, capital intensive process of drug development that biotechnology and pharmaceutical companies are involved in’ – configures the subject as a ‘patient-in-waiting’ and as a ‘consumer-in-waiting’ (ibid.: 35). A ‘neoliberal medical subjectivity’, ‘oriented toward the entrepreneurial maximization of future health’, is the upshot of this ensemble of tendencies (Waldby and Mitchell, 2006: 129; see also Novas and Rose, 2000)

Conclusion

Having outlined the general domain of the contemporary bioeconomic regime, I would like to conclude by outlining some possible lines of analysis and interpretation for future research in this field. The scholarship on biocapital has aptly mapped the field that emerged out of the economic exploitation of molecular life, singling out a number of key themes for a biopolitical reading of the same: coproduction and epistemological superimposition between financial capitalism and biosciences, reconfiguration of our understanding of life, effects of subjectivation etc. Yet, this

body of literature seems to overlook the crucial fact that modern economy has historically been charged with the government of life. That is why, for example, Rose (2008: 41) can claim that 'in an era in which biotech enterprises such as Genentech proclaim that they are 'in business for life', biopolitics has become bioeconomics.' But, as Bazzicalupo (2006a) have convincingly shown, modern economy has always been 'in business for life'.

As we have seen, economy has persistently provided modern politics with the knowledge and techniques meant to govern life. Not only have economic theories historically purported to assert the ultimate truth about life and its needs, but the concrete practices of economic actors and institutions have appeared unquestionable in their power to wisely – i.e. scientifically, objectively – 'make life live'. In this perspective, the capitalization of biotechnologies is not to be thought of as a strategy merely meant to find new sources for the extraction of economic value, but, more generally, as a *new way to govern a new understanding of life by means of new economic dispositifs*. The reduction of molecular life to marketable economic value is not to be seen as an end in itself – molecular economy is not just about capitalists' cynical exploitation of life – but as a biopolitical technique inherently meant to secure life. Liberal governmentalities are, after all, rooted in the assumption that life is to be optimized through the installation of a space of economic governance.

The line of analysis I propose to develop is thus concerned with the understanding of the contemporary bioeconomic regime in relation to the role economy has historically played in shaping modern governmentalities. What power-knowledge apparatuses have been devised to govern life economically, when life itself has been transformed by the molecular revolution? What transformations has the coupling of bioscience and finance produced, as far as the management of life is concerned?

The evolution of contemporary economic regimes might, in this perspective, be productively analyzed, at the empirical level, in relation to European mechanisms of governance. As we have seen, the entire history of the Union can be read as an instance of the progressive absorption of life into the economic grid of the market. Its governmental *dispositifs* have been transformed accordingly and, as such, they can provide a privileged entry point for identifying the transformations brought about by the capitalization of biotechnologies. How – through which governmental mechanisms and on the basis of which regimes of knowledge – has the EU built a market for biotechnologies? How has the KBBE organized a space of bioeconomic power relations so as to ‘make life live’? Towards here, finally, is this ensemble of processes pushing modern bioeconomy?

Bibliography

Bazzicalupo, Laura. 2006a. *Il Governo delle Vite. Biopolitica ed Economia*. Rome: Editori La Terza.

Bazzicalupo, Laura. 2006b. "Politico e Sociale: Su una Dicotomia Arendtiana da Ripensare". Società Italiana di Filosofia Politica, Seminari on-line: Centenario della nascita di Hannah Arendt - 05/12/2006. Available at http://www.sifp.it/seminari-e-convegni-seminars-and-conferences/centario-della-nascita-di-hannah-arendt-05-12-2006/politico-e-sociale-su-una-dicotomia-arendtiana-da#_ftnref2 . Accessed 15 September 2009.

Beeson, Mark and Jayasuriya, Kanishka. 1998. "The Political Rationalities of Regionalism: APEC and the EU in Comparative Perspective." *The Pacific Review* 11(3): 311-336.

Burchell Graham. 1996. "Liberal Government and Techniques of the Self," in *Foucault and Political Reason: Liberalism, Neo-liberalism and Rationalities of Government*, ed. A. Barry, T. Osborne and N. Rose, pp. 19-35. London: UCL Press.

Cooper, Melinda. 2008. *Life as Surplus: Biotechnology and Capitalism in the Neoliberal Era*. Seattle: University of Washington Press.

Dean, Mitchell. 1999. *Governmentality: Power and Rule in Modern Society*. London: Sage Publications.

Deleuze, Gilles. 1995. "Postscript on Control Societies", in G. Deleuze (ed.) *Negotiations 1972–1990*. New York: Columbia University Press.

Esposito, Roberto. 2006. "Prefazione," in Bazzicalupo L., *Il Governo delle Vite. Biopolitica ed Economia*, pp. v-xii. Rome: Editori La Terza.

European Commission. 2002. *Life sciences and biotechnology — A strategy for Europe*. COM (2002) 27. Luxembourg: Office for Official Publications of the European Communities.

European Commission. 2005a. *Working Together for Growth and Jobs. A New Start for the Lisbon Strategy*, COM(2005) 24 final. Brussels, 2 February 2005.

European Commission. 2005b. *Common Actions for Growth and Employment: The Community Lisbon Programme*, COM(2005) 330 final. Brussels, 20 July 2005

European Commission. 2005c. *Strategic Objectives 2005 – 2009. Europe 2010: A Partnership for European Renewal: Prosperity, Solidarity and Security*, COM(2005) 12 final. Brussels, 26 January 2005.

European Commission. 2005d. *Life Sciences and Biotechnology – A Strategy For Europe. Third Progress Report and Future Orientations*. COM(2005) 286 final. Brussels, 29 July 2005.

European Commission. 2005e. *Document de Travail de la Commission. Annex to the Communication: Life sciences and biotechnology — A strategy for Europe. Third Progress Report and Future Orientations*. SEC(2005) 850. Brussels, 29 July 2005.

European Commission. 2007. *Recommendation on the Broad Guidelines for the Economic Policies of the Member States and the Community*, COM(2007) 803 final. Brussels, 11 December 2007.

European Council. 2000. *Presidency Conclusions*, Lisbon European Council, 23-24 March 2000.

European Council. 2005. *Presidency Conclusions*, Brussels European Council, 22-23 March 2005.

Gordon, Colin. 1991. "Governmental Rationality: An introduction," in *The Foucault Effect: Studies in Governmentality* ed. G. Burchell, C. Gordon and P. Miller, pp. 1-52. Chicago, IL: University of Chicago Press.

Foucault, Michel. 1977. *Discipline and Punishment: the Birth of the Prison*. Allen Lane: London.

Foucault, Michel. 1991. "Governmentality." In Graham Burchell, Colin Gordon and Peter Miller, eds, *The Foucault Effect: Studies in Governmentality*, pp. 73-86. Chicago, IL: Chicago University Press.

Foucault, Michel. 1998. *The Will to Knowledge. The History of Sexuality Volume 1*. London: Penguin Books

Foucault, Michel. 2002. *Power. Essential works of Foucault 1954-82, Volume 3*. London: Penguin Books.

Foucault, Michel. 2003. *Society Must Be Defended*. London: Palgrave Macmillan.

Foucault, Michel. 2007. *Security, Territory, Population*. London: Palgrave Macmillan.

Foucault, Michel. 2008. *The Birth of Biopolitics*. London: Palgrave Macmillan.

Franklin, S. and Lock, M. (Eds). 2003. *Remaking Life and Death: Toward an Anthropology of the Biosciences*. Santa Fe: SAR Press.

Haas, Ernst B. 1958. *The Uniting of Europe: Political, Social and Economic Forces 1950-57*. London: Steven and Sons.

Helmreich, Stefan. 2008. "Species of Biocapital", *Science as Culture*, 17(4): 463-478.

Hardt, Michael and Antonio Negri. 2000. *Empire*. Massachusetts: Harvard University Press.

Hardt, Michael and Antonio Negri. 2004. *Multitude: War and Democracy in the Age of Empire*. New York: Penguin.

Huysmans, Jef. 2005. *The Politics of Insecurity. Fear, Migration and Asylum in the EU*. London: Routledge.

Majone, Giandomenico. 1994. "The Rise of the Regulatory State in Europe." *West European Politics*, 17 (3): 77-101.

Novas, Carlos and Nikolas Rose. 2000. "Genetic risk and the birth of the somatic individual." *Economy and Society* 29(4): 485–513.

OECD. 1996. *The Knowledge-based Economy*. Paris: OECD.

OECD. 1997. *National Systems of Innovation*. Paris: OECD.

Potočnik, Janez. 2005. *Transforming life sciences knowledge into new, sustainable, eco-efficient and competitive products*, SPEECH/05/513. Conference on Knowledge-based Bio-economy, Brussels, 15 September 2005.

Rose, Nikolas. 2008. "The Value of Life: Somatic Ethics & the Spirit of Biocapital." *Daedalus*, Winter 2008, 137(1): 36-48.

Senellart, Michel. 2007. "Course Context." In Michel Foucault, *Security, Territory, Population*, pp. 369-401. London: Palgrave Macmillan.

Sunder Rajan, Kaushik. 2006. *Biocapital: The Constitution of Postgenomic Life*. Durham: Duke University Press.

Virno, Paolo. 2004. *A Grammar of the Multitude*. New York: Semiotext(e).

Walters, William and Jens Henrik Haahr. 2005. *Governing Europe. Discourse, Governmentality and European Integration*. London and New York: Routledge.

Waldby, Catherine and Robert Mitchell. 2006. *Tissue Economies: Blood, Organs, and Cell Lines in Late Capitalism*. Durham: Duke University Press.