
The biopolitical production of the city: urban political ecology in the age of immaterial labour

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Abstract. This paper explores the potential of immaterial forms of work for a renewed politics of urban metabolisms where the production of emancipatory subjectivity is recast as a crucial moment in the process of making urban space. Through a critical engagement with the works of Michael Hardt and Antonio Negri, it will be argued that their investigations of the current condition of labour provide a powerful toolkit to get a glimpse of the dense, intricate entanglements between human and nonhuman worlds that emerge from science, innovation, affects, arts, and so forth, in the constitution of radical political ecologies. The paper then analyses the case of the struggle for water in Bucaramanga, a city in Colombia threatened by a large-scale mining project, which illustrates how collaborative engagement, communicational strategies, technoscientific debates, and legal action—among others—can produce political solidarities and social subjects that enhance the democratic and socioecological content of contemporary urban worlds.

Keywords: immaterial labour, urban political ecology, Michael Hardt, Antonio Negri, urban metabolism, biopolitics

“A metropolis can ignite overnight, and the blazes stubbornly refuse to be extinguished.”
Hardt and Negri (2009, page 212)

“Labour is the living, form-giving fire; it is the transitoriness of things, their temporality, as their formation by living time.”
Marx (1973 [1939], page 361)

1 Introduction

The metropolis, Michael Hardt and Antonio Negri suggest, “is to the multitude what the factory was to the industrial working class” (2009, page 250). Not only has the city become the site of capitalist production, exploitation, and oppression under contemporary work conditions, but it is increasingly where political organisation, along with its concomitant expressions of antagonism and rebellion, takes place (Hardt and Negri, 2009). For them, the common⁽¹⁾ that serves as the basis for biopolitical production—languages, images, codes, habits, affects, and practices—runs through the metropolitan territory and constitutes the very fabric of the modern city (2009, page 250). Although the field of urban studies has been increasingly turning its gaze towards the biopolitical city (see Adams, 2014; Braun, 2014; Ekers and Loftus, 2008; Gandy, 2006; Kraftl, 2014; Wakefield and Braun, 2014), the notion of biopolitics has usually been construed in terms of disciplinary apparatuses or *dispositifs* that exert top-down, actuarial governance and regulation of urban populations. A biopolitics from below, which would consist in struggles over the production of new urban commons and revolutionary subjectivities through collaborative engagement and

⁽¹⁾Hardt and Negri (2009) distinguish between a ‘natural commons’, embedded in the material elements of land, minerals, and water and an ‘artificial commons’, which is produced by networks of interaction, is intangible, and constitutes the foundation for immaterial labour.

sensuous practice—which according to David Harvey (2009; 2012) is fundamental to the aims of a politically progressive urbanism—has lacked further development.

To the extent that it foregrounds human labour as the fundamental analytical category for making sense of the production of urban environments (see Heynen et al. 2006; Holifield, 2009; Kaika, 2005; Loftus, 2006; 2009; 2012; Swyngedouw, 2004; 2006; Swyngedouw and Heynen, 2003), the notion of ‘metabolic urbanisation’ developed by the Marxist School of Urban Political Ecology (UPE) may offer key elements to realise Hardt and Negri’s view of the city as the ‘factory for the production of subjectivity’. Although UPE’s research agenda has focused on the uneven production of socioenvironmental landscapes, the extent to which these urban metabolisms can also translate into the production of urban subjectivities has not yet been fully developed. Furthermore, the issue of labour has aroused considerable academic interest lately, with scholars arguing for the need to focus on concrete labour histories and geographies (Ekers and Loftus, 2012; Guthman, 2011; Loftus, 2012) in order to attain more situated, reflexive understandings of how urban environments are currently produced. Such invitations could not have been timelier, because a new frontier of capitalist expansion centred on digital technologies, new divisions of labour, and an intensifying role of affective and mental assets in commodity production (Florida and Kenney, 1991; Scott, 2011; Wyly, 2012) has profoundly transformed practical activity—and hence the way in which urban environments are produced.

The purpose of this paper is then to use Hardt and Negri’s investigation of the ontology and political economy of the current productive paradigm in order to illustrate the ways in which the dialectical unity between humans and nonhumans as a result of practical activity has been redefined throughout the last three decades, and how this change implies new ways of understanding urban political ecologies. According to Hardt and Negri (1994; 2001; 2004; 2009; 2012; see also Hardt, 1999; 2005; 2010; Negri, 1989; 1999; 2010; 2011; 2013; Hardt and Virno, 2006; Negri and Henninger, 2007), immaterial labour has come to occupy a predominant position in the world economy, and its means of production are eminently biopolitical in that, besides commodities, they directly produce knowledges, affects, forms of communication, and even life itself. For that reason, the paper will also highlight the conditions of possibility that the immaterial paradigm holds for the realisation of a radical political–ecological project, because, as Hardt and Negri have noted, the enactment and reenactment of the affects and knowledges produced by immaterial labour gives rise to externalities such as social networks, forms of community, and ultimately biopower, which are in themselves definitive vehicles for liberation.

To illustrate this, the paper analyses the struggle for water in Bucaramanga, a city in Colombia that, after being threatened by a large-scale gold mining project, became a site of transformative politics and renewed patterns of metabolic exchange. Specifically, this case illustrates how communicational strategies, collaborative engagement, technoscientific debates, and legal action from activists and committed individuals can produce new experiences of collectivity and new ways of sensing and enacting urban space. The paper begins by exploring UPE’s theorisation of metabolic urbanisation and its potential resonance with Hardt and Negri’s work on biopolitical production. The second section offers a theoretical discussion of Hardt and Negri’s concept of immaterial labour and the way in which it asserts a biopolitics from below, one that allows viewing the city as a critical site for socioecological struggle. The final section then provides an investigation of how Bucaramanga became at once the source of and the receptacle for an emancipatory social subject that has been able to protect its water sources from being enclosed and contaminated and how, in this way, it forged renewed patterns of solidarity between human and nonhuman worlds.

2 The metabolic condition of urban environments

The concept of metabolism appeared during the 1840s as a key category in systems theory to make sense of organisms' interaction with their environments and with the regulatory processes that govern such patterns of interaction (Foster, 2000; Swyngedouw, 2006). Karl Marx used this notion to account for the actual metabolic interaction between nature and society through human labour, as well as for the set of needs and relations constantly reproduced in alienated form under capitalism (Foster, 2000, page 158). In fact, Marx's definition of labour in Volume 1 of *Capital* expresses the quintessentially metabolic condition of practical activity by noting how, through labour, the individual "acts upon external nature and changes it, and in this way ... simultaneously changes his own nature" (Marx, 1976 [1867], page 283). UPE picks up on Marx's emphasis on these exchanges to posit the act of labouring as the foundation for a socioenvironmental history through which the nature of both humans and nonhumans is transformed in the modern city (Heynen et al, 2006; Loftus, 2012).

Since the publication of its programmatic texts, however, research under the UPE umbrella has tended to focus only on the first moment of the Marxian notion of metabolism—that is, transforming external nature—as it usually consists in analysing the unjust production of urban environments (see Angelo and Wachsmuth, 2014). The second moment—transformation of the self through practice—despite some exceptions (Loftus, 2009; 2012) has lacked further theoretical and empirical attention. In Hardt and Negri's work, it is the latter aspect that has been more consistently developed, so this means that there are important avenues for cross-fertilisation between the two approaches. As the case of Bucaramanga will illustrate, the production and transformation of urban space through manifold layers of struggle has also resulted in the emergence of new social subjects. This means that focusing on both ends of the metabolic relation is perhaps necessary for developing more reflexive understandings of urban political ecologies. Therefore, and by engaging with Hardt and Negri's main works on the transformation of practical activity, the next section explores the conditions of possibility that immaterial labour holds for the constitution of new urban subjectivities.

3 Biopolitical production and immaterial labour

For Hardt and Negri, the multitude—a nonsynthetic, ontologically plural revolutionary subject—emerges from the transformations in the means of production that have taken place during the late stages of capitalist development (see Hardt and Negri, 2004; Virno, 2006). Such transformations are the result of a new economic paradigm that the authors refer to as the informatisation of production (see Hardt and Negri, 2004). For them (see Hardt and Negri, 2001), the succession of economic paradigms since the Middle Ages can be viewed in three distinct moments, defined as follows by the characteristics of the hegemonic sector of the economy: a first paradigm in which agriculture and resource extraction dominated the economy, a second in which industry occupied a privileged position, and a third and current paradigm in which providing services and manipulating information constitute the core of economic production (2001, page 280). In a well-known passage from the *Grundrisse*, Marx foresaw the emergence of the current paradigm by noting how general social knowledge (that is, "the general intellect") was becoming a "direct force of production" (1973 [1939], page 706). For Virno (2006), what Marx viewed as a premature phenomenon in the 19th century did not become fully actualised until the decline of Fordism in the second half of the 20th century, when the assembly line and wage labour were surpassed by science and information as the primary source of wealth creation (see also Berardi, 2006; Lazzarato, 2006).

With each of these paradigm shifts, Hardt and Negri (2001) note how traditional sectors of the economy (such as agriculture and extraction of minerals) have been qualitatively transformed as they have adopted the characteristics of the new hegemonic paradigm. For example, when

agriculture was subsumed by industry, it became industrialised. Far from disappearing, it turned into an industrialised agriculture (Hardt and Negri, 2001, page 281). According to Hardt and Negri (2004), the informatisation of production is in the same position industrialisation was in 150 years ago, because despite accounting for a small fraction of the global production and being concentrated in specific parts of the world, it exerts hegemony over other forms of production in many different countries. In other words, and in the same way that the industrial revolution transformed agriculture, the information revolution is “redefining and rejuvenating manufacturing processes—through the integration, for example, of information networks within industrial processes” (Hardt, 1999, page 92). As Jodi Dean has noted, information technologies now drive most economic activities—including traditional ones, such as mining and agriculture—so this means that “capitalism has subsumed communication such that communication does not provide a critical outside” (2012, page 128). As we shall see in the case of Bucaramanga, the predominance of communication has even pervaded the activity of the mining company involved in the conflict.

Naturally, the passage to an information economy has not only transformed production itself but also reconfigured the very nature of labour and the labouring process, as information, communication, knowledge, and affects are now foundational in processes of production (Berardi, 2006; Hardt, 1999). The dominant form of labour involved in this new economic paradigm has been regarded as ‘immaterial’; that is, as the “labour that produces the informational and cultural content of the commodity” (Lazzarato, 2006, page 132) as well as “immaterial products, such as knowledge, information, communication, a relationship or an emotional response” (Hardt and Negri, 2004, page 108). Immaterial labour, Hardt and Negri (2004; see also Hardt, 1999; Negri, 1989; 2013) suggest, encompasses two different aspects: the first is characterised by the production of intellectual components such as symbols, ideas, texts, images, and the like, whereas the second is characterised by the production and/or manipulation of affects, understood as feelings of well-being, excitement, passion, satisfaction, and so forth. For example, the work of flight attendants, health-care workers, and legal assistants would be largely affective. Here Hardt and Negri draw from socialist-feminist theorists—most notably Jennifer Pierce (1995) and Arlie Hochschild (1983)—to note how characteristics usually associated with ‘women’s work’, such as family, care, or domestic work, which are entirely immersed in the corporeal, have become increasingly appropriated by capital and extended to all sorts of labour (see Hardt, 1999; Hardt and Negri, 2004).

However, the intellectual and affective aspects of immaterial labour are not mutually exclusive, and sometimes they overlap completely and become inextricably linked—for example, in the case of journalists and media workers who are required not only to provide information “but also to make news attractive, exciting, desirable” (Hardt and Negri, 2004, page 108) and, in sum, “create affects and form of life” (page 108). This does not mean that the labouring activity as such has become immaterial; it remains largely material because it involves the use of human bodies, as all types of labour do (Negri, 2011). What makes this type of labour immaterial, Hardt and Negri (2004) contend, is the intangible nature of its product. Accordingly, they consider that this new hegemonic form of labour could also be regarded as ‘biopolitical labour’, because it creates not only material goods but also relationships and forms of life (page 109; see also Negri, 2011). While the notion of biopolitics—and of biopower—was initially developed by Foucault (2003, page 239) to refer to the power exerted by the state over the biological, or, in other words, to the “acquisition of power over man insofar as man is a living being” (see also Foucault, 1990), Hardt and Negri (2009) reinterpret the concept in a brand new light, so that it can be applied to the current condition of labour. In their words,

“Our reading not only identifies biopolitics with the localized productive powers of life—that is, the production of affects and languages through social cooperation and the interaction of bodies and desires, the invention of new forms of relation to the self and others, and so forth—but also affirms biopolitics as the creation of new subjectivities that are presented at once as resistance and de-subjectification” (page 59).

In light of the above, it is important to note that Hardt and Negri’s reading of biopolitics fits into what they consider to be a ‘third stream’ of interpretation of that Foucauldian notion (1990; 2003; 2010). There is one major stream represented by Francois Ewald (1986) and Roberto Esposito (for example, 2008; 2011), which sees biopolitics from above, as the normative management of populations by a sovereign power. Most approaches to biopolitics within UPE—and political ecology more broadly—situate themselves within this stream (see Braun, 2011; Ekers and Loftus, 2008; Gandy, 2006; Wainwright and Mercer, 2011). Such a view, Hardt and Negri (2009) contend, “amounts to an actuarial administration of life that generally requires viewing individuals from a statistical perspective” (page 59). A second stream centres on the interpretation of Giorgio Agamben (see, for example, 1998; 2005). Although it has a more nuanced view of biopolitics, it sees resistance as marginal and therefore strips subjectivity of any autonomous action (Hardt and Negri, 2009). A third stream, then—which encompasses not only Hardt and Negri but also some of the authors associated with the *Operaista* movement in Italy, such as Paolo Virno, Maurizio Lazzarato, and Franco Berardi—sees biopolitical resistance and subjectivity as an autonomous power capable of creating alternative forms of life and new patterns of relations between human and nonhuman worlds.

3.1 The city as the inorganic body of the labouring classes

For Hardt and Negri (2001; 2004; 2009; 2012; see also Hardt, 1999; Negri, 1989; 1999; 2013), revolutionary consciousness lies at the heart of recent transformations in social forms of labour because the ultimate core of biopolitical production is not the production of objects, but the production of subjectivities, of a new social subject (see also Hardt and Negri, 2009). Such production of subjectivity, however, is not enclosed within factory walls—as it was during Fordism—but has become diffused throughout the entire metropolitan territory, as labour has become flexible and mobile, production increasingly larger scale, and the integration of labour processes more complex than ever before (Negri, 1989; Hardt and Negri, 2009). For Hardt and Negri (2004, page 113), this tends to transform the organisation of production “from the linear relationships of the assembly line to the innumerable and indeterminate relationships of distributed networks”. Insofar as networks become the dominant form of organisation, technical systems of production would increasingly resemble their social composition, having on the one hand technological networks and on the other the cooperation of social subjects put to work (2004, page 113). In other words, immaterial labour generally produces cooperation autonomously from capitalist command (Hardt and Negri, 2009), and it is precisely the networks, forms of community, and social subjects emerging from these encounters that hold the potential for the social liberation of the producer (Hardt, 1999; Negri, 1989; 1999; 2013; Hardt and Negri, 2009).

This leads Hardt and Negri (2009) to suggest that the city has thus replaced the factory as the primary site of class struggle, a claim that has been substantiated further by David Harvey (2012). For Harvey, the dynamics of flexible means of production and of class exploitation are not confined to the workplace, and in that sense the focus on struggle needs to be radically decentred and upscaled so that it encompasses the urban (Harvey, 2012). The geographies of biopolitical production, therefore, have many implications for rethinking urban political ecologies, because when the activity of the labouring classes blasts open the situated workplace and spills over to the whole city, (social) subject and (urban) environment become tightly

interwoven in mutually transformative ways. For Hardt and Negri, the city is a “factory for the production of subjectivity” (2009, page 211), a place where “social life produces and is produced” (page 244). The city, they note, is a site of biopolitical production because it is a space of the common, where people get together, exchange ideas and goods, share resources, and communicate. Under this view, UPE’s original formulation of the urbanisation of nature (see Swyngedouw and Heynen, 2003) would need to be extended in order to encompass a second nature or a ‘commons’ embedded in languages, affects, networks, and so forth, which is also formative of urbanisation as a distinct social process under the immaterial paradigm.

Echoing the young Marx in the *Economic and Philosophical Manuscripts of 1844*,⁽²⁾ and perhaps hinting at the metabolic implications of immaterial labour, Hardt and Negri argue that in the era of biopolitical production the city increasingly fulfils the role of “the inorganic body of the multitude” (2009, page 249). That is, it provides the substance for the enactment of metabolic exchanges—material and semiotic—that result not only in the transformation of urban space, but also in the production and transformation of social subjects. If we take seriously Henri Lefebvre’s (2003 [1970]; see also Merrifield, 2013; 2014) claim that the urban is first and foremost defined by encounter and assembly, then the more populated the city, the denser and more transformative these exchanges will be—for good or ill. The subjects in Hardt and Negri’s city, however, would not be given the role of passive recipients of power structures—as is usually the case in mainstream readings of biopolitics—but would themselves be the originators of the *vis viva*, the productive powers that emancipate and overturn. As the case of Bucaramanga will illustrate, the social subjects and urban landscapes that were produced through social mobilisation dramatically changed the way in which the community experiences and enacts urban metabolisms, especially regarding the exchanges between the city and its water sources.

There could be certain tensions, however, between UPE and the theory of immaterial labour. First, some of the authors associated with Operaismo have claimed there is a crisis of the Marxian law of value pointing to the impossibility of measuring both the immaterial components in a commodity and socially necessary labour time—since, allegedly, the dividing line between work and leisure time has become blurred (see Hardt and Negri, 2004; Vercellone, 2007; Virno, 2006). Second, some of these authors—especially Hardt—have been critical of the dialectical method, arguing that it tends to impose synthesis and closure on that which is in itself ateleological (see Hardt, 2010; Hardt and Colectivo Situaciones, 2007). Third, the engagement of some Operaista authors with Baruch Spinoza is usually construed as a departure from the Hegelian roots of Marxism. As a result, some of Hardt and Negri’s formulations have aroused criticism and controversy among certain segments of Marxism (see, for example, Caffentzis, 2005; Camfield, 2007; Harvey, 2009; Holloway, 2010; Holloway et al, 2008; Huws, 2014; Starosta, 2012).

Although engaging in a detailed discussion of such criticisms goes beyond the scope of this paper, it should suffice to say that the existing tensions do not necessarily preclude the possibility for fruitful dialogues. Indeed, Harvey (2009) has argued that despite such tensions, Hardt and Negri have important things to offer to a geographical–historical materialism—and thus, one might add, to UPE. The theorisation of a ‘common’ and of the exertion of biopower are, for Harvey, examples of important contributions that need to be incorporated directly into the redefinition of what “a revitalised communist project ... might be about” (2009, page 257). Most importantly, for the purpose of this paper it should be noted that Harvey (2009; 2012) has also welcomed Hardt and Negri’s view of the city as a

⁽²⁾ In the *Manuscripts of 1844*, Marx posited nature as the inorganic body of the human being. According to Marx, we draw our most basic sustenance from nature, so we need to maintain a constant metabolic exchange with it if we are not to die (2007 [1844]).

‘factory’ for the production of subjectivity and as the primary site of class mobilisation. The remainder of this paper illustrates how new urban environments and subjects are produced by the mobilisation of affects and knowledges and by the harnessing of subjectivity, which is immanent to immaterial labour. I do this by exploring the process of social resistance that took place to defend access to water in Bucaramanga.

4 The biopolitical production of urban natures in Bucaramanga

To understand the magnitude of the socioenvironmental conflict that not only changed the history of one of Colombia’s main cities but became a benchmark of struggle against extractivism for environmentalists and social justice movements throughout the whole country, one should first understand the importance of Andean moorlands or *páramos* for social reproduction in that part of the world. First of all, the *páramo* is a specific type of ecosystem that is endemic to the high mountains of the equatorial Andes, and due to its unique biogeographical characteristics it ensures the smooth functioning of the hydrological cycle (Peña, 2013). As a result of their glacial morphology, *páramos* are made up of igneous or volcanic rocks of a porous nature, which, in conjunction with their distinct sponge-like vegetation, form extremely absorbent soils and subsoils that guarantee the continuous provision of water throughout the year in the form of rivers, lakes, and several other types of drainage basin (Baptiste, 2011; Molano Barrero, 2012; Peña, 2013). With thirty four of these moorlands, covering an area of 1 932 987 hectares, Colombia is home to 49% of the world’s *páramos*. Despite the fact that they provide around 70% of the water consumed by the whole country, twenty two of them are seriously threatened by mining megaprojects (Flórez, 2012).

Thus, Joaquin Molano Barrero (2012) suggests, these Andean high mountains constitute the very foundation of Colombia’s hydrological system, and for this reason they are profoundly interconnected with the whole of the country’s territory. The case of Santurbán is a clear example of how these supposedly ‘natural’ and ‘pristine’ ecosystems are a direct—and often unacknowledged—correlate of urban life, even in densely populated cities. Santurbán is located in the northern part of the Colombian Andean mountain ranges between the Santander and the Norte de Santander departments (regions) of the country, and covers an area of 83 000 hectares between 3000 and 4500 metres above sea level. It is home to forty-two bird and 253 plant species as well as to forty-two different ecosystems, including Andean and high-Andean forests. Moreover, its approximately 441 hectares of drainage basin provide water to 2.5 million people in twenty-three towns and cities, including Bucaramanga, which has 1.2 million inhabitants (ABColumbia, 2012; CENSAT Agua Viva, 2011; Flórez, 2012).

As Gavin Bridge (2009) has asserted, although the dense urban rhizomes of water, oil, and gas that sustain modern life are built into the fabric of the city, they usually remain hidden from view. This holds true for Santurbán, because, despite being 67 kilometres away from Bucaramanga (see figure 1), it provides all of the water consumed by the city through three rivers that spring directly from its basin. For that reason, it constitutes a—rather unperceived—part of a complex network of pipes, sewage canals, processing plants, bureaucratic procedures, and so forth that facilitates urban metabolism. Specifically, the physical infrastructure that creates a material connection between Santurbán and Bucaramanga—allowing 1.2 million people to enjoy drinking water right from the tap—encompasses four processing plants with an overall flow capacity of 2900 litres per second,⁽³⁾ conduction complexes of up to 40 km long that go way up into the moorland, as well as thousands of square metres of underground piping that cut across the whole city.⁽⁴⁾

⁽³⁾ Interview with a union member of the city’s aqueduct, 5 November 2013; and interview with geologist Julio Fierro, 26 September 2013.

⁽⁴⁾ Interview with Chemical Engineering professor Gonzalo Peña, 7 November 2013.

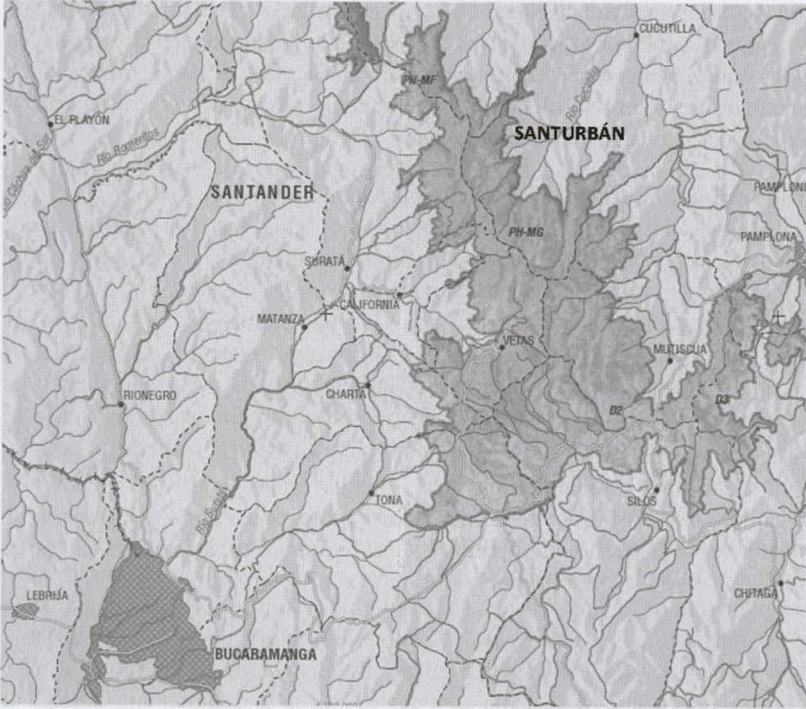


Figure 1. [In colour online.] Map illustrating the dense, material interconnections between Bucaramanga and Santurbán through roads (red lines) and water sources (blue lines). Source: This image is part of a larger map on page 40 of Morales et al (2007).

Because of their dense interconnections, Santurbán and Bucaramanga are, biogeographically speaking, part of a single produced environment, if we understand produced environments as “specific historical results of socio-environmental processes” (Heynen et al, 2006, page 4). For this reason, any potential threat to Santurbán is a threat to the city itself, and that is why the possibility of having a large-scale gold mine at 3800 metres above sea level in the very bowels of the páramo has radically changed the life of Bucaramanga. In 2009, after more than ten years of preliminary explorations in Santurbán, the Canadian transnational Greystar Resources Ltd (now Eco Oro Minerals Corp) requested a mining licence from the Colombian government to develop the Angostura project, which involved the construction and operation of a large-scale opencast gold mine with the potential to produce 7.7 million ounces of gold throughout a lifespan of about fifteen to twenty years (CENSAT Agua Viva, 2011). According to the environmental impact assessment carried out by the company itself, the project required 1200 tons of cyanide for lixiviation and 7000 tons of explosives on a monthly basis, yielding 745 million tons of waste per year (CENSAT Agua Viva, 2011; Flórez, 2012). In other words, the amount of solid waste produced by this particular mining project each year would be more than seventy times that of a city the size of Buenos Aires or Bogotá in the same period of time (Cabrera and Fierro, 2012; Fierro, 2012). Needless to say, the spectacular proportions of such a project would not only produce serious and irreparable damage to the water consumed by millions, but also ravage the páramo’s fragile ecosystems.

It should also be noted that this case situates itself within a context of high political and social unrest towards the unregulated growth of the extractive industries in the country’s economy, because in less than a decade the number of hectares granted for the development of

extractive industries went from 1 to 5 million (see Fuentes, 2012; Garay, 2012).⁽⁵⁾ Moreover, Bucaramanga is one of Colombia's most prosperous cities, with a diversified economy, lower levels of inequality, and a per capita income that is almost double the national average.⁽⁶⁾ This, added to the growth of the service economy and high rates of access to information technologies⁽⁷⁾ may perhaps explain the emergence of a relatively mobile, informationalised workforce that facilitates political articulation, making Bucaramanga one of the main hubs in Colombia's environmental movement against extractivism. For Tatiana Roa (2012), Bucaramanga's environmentalists have been among the first ones to warn of the contradictions and dangers implicit in national mining regulations and policies.

Not surprisingly, then, the Angosturas project caused outrage among local civil society organisations, who opposed it from its very beginning. However, the bulk of Bucaramanga's inhabitants remained completely unaware of the true extent of the project for some time, as they even ignored the existence of the páramo and its crucial role for the city in the first place. As Erik Swyngedouw (2006, page 31) has noted, the rift between the social and the natural has become "engrained deeper than ever in the modern urban imagination", obscuring the dense networks of metabolic exchange with the natural world that sustain urban life, and this was precisely the situation in Bucaramanga during the preliminary stages of the conflict, when people hardly knew where their drinking water came from. The first demonstration took place in June 2010 after the metropolitan aqueduct and its workers union began raising awareness about the negative effects of the mining project among the city's main civil society organisations. The demonstrators demanded that the Colombian government reject the licence requested by the company, and, although they did not manage to gather more than 300 people, they attracted key supporters (Prada, 2012).

After the first demonstration, interest in the páramo began to rise rapidly among otherwise antagonistic and heterogeneous actors such as environmentalists, the Catholic Church, union federations, some local politicians, and even local business leaders. These actors decided to leave their differences behind and join forces to mobilise against the company—something quite unusual in a sociopolitically segregated city like Bucaramanga.⁽⁸⁾ For this reason, they created the Committee for the Defence of Water and the Páramo (hereafter the Committee), an umbrella organisation whose sole purpose was to defend the city's water from Greystar Resources Ltd. This marked a turning point in the conflict. After putting in motion aggressive mobilisation and communication strategies, the Committee managed to broaden the conflict and reach all of the community. Subsequent marches carried out on 5 October and 18 November 2010 gathered 4000 and 8000 people, respectively.⁽⁹⁾ These marches were constitutive in the struggle against the mining project and illustrate how the city—instead of the workplace—becomes the site that facilitates the physical proximity that, for Hardt and Negri (2012), is a precondition for the emergence of affects, new forms of communication, and political solidarities.

A third demonstration—which took place on 25 February 2011—gathered a crowd of 50 000 people under the slogan "*agua sí, oro no*" (yes to water, no to gold). Hardt and Negri (2012) have argued that sometimes the creation of political slogans in demonstrations

⁽⁵⁾ For an overview of the urban dimensions of the resource extraction boom at the Latin American level, see Arboleda (forthcoming).

⁽⁶⁾ *La República* 19 April 2013, http://www.larepublica.co/economia/un-milagro-econ%C3%B3mico-llamado-bucaramanga_36739

⁽⁷⁾ *Revista Semana* "El Oriente a Seguir", http://www.semana.com/especiales/SEMANA_SANTANDER/index.html#/2/

⁽⁸⁾ Interview with a member of ABColombia, 20 June 2013.

⁽⁹⁾ Interview with a member from the Committee, 31 October 2013.

constitutes an act of truth-making. Not only do slogans illuminate (in a very condensed fashion) complex social realities, they involve the creation of political affects by “negotiating the terms of our being together” (2012, page 38). In Bucaramanga, such production of truth, encounters, affects, and new constitutive languages by the community put tremendous strain upon the Colombian government, which resulted in its decision to reject the company’s application for a mining licence on 31 May 2011. Despite this unprecedented display of public engagement, the company could not be stopped. After changing its name to Eco Oro Minerals Corp to cleanse its public image, it reformulated the proposal, this time offering to develop the Angostura project as an underground mine. An underground mine, Gouzalo Peña (2013) suggests, would be almost as problematic in this case as an opencast one because of the negative effects it would cause to the subsoil and its underground water courses.

While a detailed analysis of Eco Oro Minerals Corp exceeds the scope of this paper, it should be noted that its objectives and strategies also reflect the hegemony of the current productive paradigm. Listed on the Toronto Stock Exchange—the world’s flagship stock market for mining—Eco Oro has expertise in mobilising symbols and affects aimed at attracting investments (see Gómez, 2012). Anna Tsing (2005, page 57) refers to this phenomenon as “spectacular accumulation”, whereby start-up mining companies—like Eco Oro—“dramatize their dreams in order to attract the capital they need to operate and expand”. Through its website, Eco Oro conjures up visions not only of more-than-abundant gold deposits buried underneath the Andes, but also of ‘green’ and ‘ethical’ mining practices that coexist harmoniously with local communities. In Bucaramanga, in order to mitigate resistance from the local community, the company has also put into motion different lobbying and marketing mechanisms to evoke visions of economic progress for the city.⁽¹⁰⁾

Such visions and promises, however, failed to convince the people of Bucaramanga, meaning that social resistance was continued after the licence was rejected, this time by a more conscious, politicised, and socioenvironmentally aware community. What is perhaps most interesting to stress, nonetheless, is precisely what triggered this profound change in the way individuals relate to each other, to politics, and to their city. When I was doing fieldwork in Bucaramanga during 2013,⁽¹¹⁾ the presence of this emerging social subject could be felt everywhere. Not only were occupations, conferences, and demonstrations commonplace, but there was everyday talk in the streets about the páramo, graffiti critical of the company was sprayed all around, and there were screenings of documentaries and hiking tours through Santurbán. It was easy to see how city streets, walls, parks, and other public spaces served as the receptacle for the commons that was being produced through these myriad encounters.

Enquiring further, I discovered that one of the main originators of this commons had been the Committee, which since mid-2010 had been putting forward creative and resourceful strategies to broaden the conflict to the whole community. An aggressive communications programme was implemented to increase awareness about the importance of the páramo for Bucaramanga. As part of this programme, a participatory and educational campaign called *Pliego Verde* (Green Statement) was put in motion, which involved a petition demanding the government to stop the project. Also, the workers union of the metropolitan aqueduct (also a Committee member) included an information leaflet about the conflict as well as signature sheets for the Green Statement in the water bill that was delivered monthly to every

⁽¹⁰⁾ Interview with a member of *Derecho de los Pueblos*, 23 October 2013.

⁽¹¹⁾ Fieldwork for this paper was carried out over a three-month period (one in Bucaramanga, two in Bogotá) and involved semistructured interviews and nonparticipant observation among activist groups and members of the local community. I attended some of the meetings of the Committee, two demonstrations, one documentary screening, and two seminars on mining.

household in the city.⁽¹²⁾ At first, members of the Committee were the only ones collecting signatures, but as interest in the subject grew, many others wanted to help; after a few weeks, not only activists but taxi drivers, street vendors, pensioners, and students, among others, were collecting signatures as well.⁽¹³⁾ Furthermore, as part of this communications programme, fake bottled water (supposedly containing cyanide) with the company's logo on it was distributed among the members of the Asamblea Departamental, the region's legislative body, in one of their plenary meetings, as a warning about what was going to happen to Bucaramanga's water if the gold mine was built.⁽¹⁴⁾

The mobilisation and creation of affects—one of the two core aspects of immaterial forms of practice along with the manipulation of information (Hardt and Negri, 2004)—constituted a key component of the strategy that was put forward by the Committee. Students' associations were mostly in charge of this, because, as one of their leaders argued, although they lacked the technical and legal tools required to engage in the debate against large-scale mining, they nonetheless had the *energy* needed to mobilise these affects among the grassroots.⁽¹⁵⁾ Consequently, they organised cultural events, flash mobs, street dance, and theatre, and all of those activities contained an unambiguously political and educational message, warning the community about the threats posed by the construction of the gold mine. They also collected signatures for the Green Statement, but accompanied by cheerful music bands that sang songs about community, territory, affective bonds, and against imperialism and transnational corporations. The feelings of excitement, indignation, and belonging created by this process had a very powerful effect, because, according to one of its leaders, the students' associations were the ones that managed to collect the greatest number of signatures for the Green Statement.

Intellectual labour, which according to Hardt and Negri (2004) is the other core aspect of immaterial practical activity and includes the production of epistemological components such as information, symbols, ideas, texts, images, and the like, was fundamental in convincing the government to reject the mining licence. The Local Association of Engineers (Sociedad Santandereana de Ingenieros), also a member of the Committee, assembled a team of geologists, chemical engineers, biologists, and other experts from Colombia and abroad to study the environmental impact assessment conducted by the corporation and to argue against the viability of the project on technical and scientific grounds. As a result, several technical reports were submitted to the Ministry of the Environment, which, according to the ministry itself, helped to establish the abiotic, biotic, hydrological, and ecosystemic criteria that demonstrated the socioenvironmental unviability of the project.⁽¹⁶⁾ Something similar happened with the legal experts, who intervened as third parties in the licensing process, submitting legal reports that reminded the ministry that pursuant to the existing legal and regulatory frameworks, including international treaties ratified by Colombia, all extractive activity in páramos is strictly prohibited. Legal action against the company was also taken by members of the Committee in multilateral fora, for example in June 2012, when a formal complaint was submitted to the Compliance Advisor Ombudsman of the World Bank in order to denounce the bad practices of the company.⁽¹⁷⁾

⁽¹²⁾ Interview with a union member of the city's aqueduct, 5 November 2013.

⁽¹³⁾ Interview with a member from Corambiente, 21 October 2013.

⁽¹⁴⁾ Interview with a member from Corambiente, 21 October 2013.

⁽¹⁵⁾ Interview with a leader of a student association, 31 October 2013.

⁽¹⁶⁾ Resolution 1015, 31 May 2011, issued by the Ministry of Environment.

⁽¹⁷⁾ Interview with a member of Equipo Jurídico Derecho de los Pueblos, October 23, 2013; interview with a member of Luis Carlos Pérez Legal Collective, 28 October 2013.

Intellectual labour has been an important tool not only in the litigation process with the Colombian Government, but also in the process of raising awareness among the local community. In March 2013, thousands of copies of a 'Water Manifesto', drafted by a chemical engineer from the Committee, were distributed throughout Bucaramanga. The purpose of this information booklet, the author argued,⁽¹⁸⁾ was to raise awareness in the community about the role of páramos as socioecological mediators and regulators, as well as to present in very accessible terms the chemical, physical, and biological effects of large-scale mining in Santurbán. Moreover, since mid-2010, the Committee has organised around ten conferences about mining, all of them completely open to the public, where speakers have addressed legal, economic, social, geological, chemical, and biological aspects of this particular extractive activity. As a result, concepts like lixiviation, arsenic, acid water, fiscal income, proletarianisation, and the like are familiar not only to experts but to a large part of Bucaramanga's population (Prada, 2012). It is not uncommon to hear a taxi driver speak about the low standards of mining regulations, or to see graffiti or street art alluding to cyanide or to the process of lixiviation. Berardi (2009), whose work has also contributed to debates around immaterial labour, has argued that information is, above all, the creation of form, a form that is subsequently inoculated into matter or events (page 95). In this particular case, it is not hard to see how the production, manipulation, and mobilisation of knowledges, signs, texts, ideas, and information in general run throughout urban space and become materially fixed in the city through sensuous practice.

It is precisely from this vantage point that we can now start to see in full perspective all of the situated subjectivities, all of the actual bodies descending into the streets and engaging in the cooperative production of a new social subject, a new urban nature. Since the mining licence was rejected by the Colombian government in May 2011, several other massive demonstrations have taken place, this time with the purpose to stop the company's intention to develop the project as an underground mine. The most significant of them took place in March 2013 and attracted around 80 000 people,⁽¹⁹⁾ making it the largest demonstration in the history of Bucaramanga. Furthermore, as Hardt and Negri (2012) have argued, social media can become a tool for collective self-production, so besides demonstrations and cultural events, there has been incessant social networking through Facebook and Twitter, where myriad articles, reports, photos, interviews, and videos have been continuously posted, uploaded, and forwarded. These practices are a clear reflection of how the cooperation that is immanent to biopolitical production has resulted in vibrant social watersheds, forms of community, and networks.

As Marx eloquently put it, through cooperation there is not only an increase in the productive powers of the individual, "but the creation of a new productive power, which is intrinsically a collective one" (1976 [1867], page 443). When an individual cooperates in a planned way with others, Marx adds, "he strips off the fetters of his individuality, and develops the capability of his species" (page 447). This new productive power that is unleashed is precisely what Hardt and Negri refer to as biopower, which is nothing but the cooperative creation of social relations and forms of life by means of life itself. In Bucaramanga the vivacity of these productive powers has dramatically changed the city in many aspects. All of the interviewees I spoke to during my fieldwork agreed that the conflict had radically altered the way in which the community produces and experiences everyday urban environments. For example, a mandatory recycling programme was implemented by the local government in June 2013, which, in the words of Bucaramanga's mayor Luis Francisco Bohórquez, "intends to create a civic duty on the basis of a change of outlook that has already taken place in the local

⁽¹⁸⁾ Interview with Gonzalo Peña, 7 November, 2013.

⁽¹⁹⁾ Interview with a member of the Committee, 31 October 2013.

community regarding solid waste disposal".⁽²⁰⁾ Also, while initially completely unknown to the people of Bucaramanga, the páramo has become an attractive ecotourist destination, with walks and sightings organised constantly. Farmers markets have also become increasingly popular in the city since the conflict. A member of Corambiente, an NGO that has sponsored one of these markets in Bucaramanga for over ten years, noted how after the conflict the number of customers rose abruptly from about a dozen to nearly 250 every weekend.⁽²¹⁾

Furthermore, the findings of a local citizen perception survey assert that water pollution went from being relatively unimportant for the community in 2010 to being the second most important issue in 2012 after vehicular congestion.⁽²²⁾ Environmental values and ideas, always considered as 'alternative' and 'new age' by the local establishment have become mainstream, and it is now common to see a community that has always been politically conservative engage in participatory action to defend the water and the páramo.⁽²³⁾ Most important, nonetheless, is that the phenomenon observed by Bridge (2009), Kaika (2005), and Swyngedouw (2004; 2006), by which the commodity relation usually obscures and renders invisible the multiple socioecological mediations that feed the urbanisation process, has been reversed in Bucaramanga. The community is now completely aware about what it takes to enjoy uncontaminated drinking water from the tap, and this simple fact has restored a social bond that had been broken by the "illusion of an autonomous society" (Bridge, 2009, page 47) invariably created by capitalist modernity. The production of this social bond, the enactment of more open and layered urban environments evocative of the fact that Bucaramanga is not the ontological 'other' of the páramo but a complex ecosystem with blurred, unstable boundaries, is just an example of one among many variegated, multifarious ways of producing urban environments under the immaterial paradigm.

5 Conclusions

This paper constitutes an attempt to contribute to the literature on urban political ecology by foregrounding the production of urban political subjectivities as a crucial moment within the metabolic relation embodied in labour. As such, it builds upon recent academic discussions on the need to constantly focus on concrete labour histories and geographies (Ekers and Loftus, 2012), and to foreground the importance of bodies and coproduction (Guthman, 2011) in order to achieve more situated, politically stronger understandings of how socionatures are produced. In so doing, I have revisited the key writings of Hardt and Negri on immaterial labour and biopolitical production, as they offer some of the most piercing investigations on the contours and particularities of the current productive paradigm. The notion of immaterial labour, I have argued, provides powerful theoretical and methodological tools to get a glimpse of the dense, intricate ensembles of socionatural relations and processes that emerge from creativity, science, innovation, arts, and so forth, and of the ways in which they mediate the production of new types of urban environments. Especially their view of the city as a 'factory for the production of subjectivity' allows the reimagining of a UPE where social subject and urban environment become tightly interwoven through the material powers embedded in sensuous practice.

Moreover, I have tried to envisage how the immaterial paradigm would serve as a springboard for a progressive environmental politics of life. Usual approaches to biopolitics in

⁽²⁰⁾ *La Vanguardia* (local newspaper), 5 June 2013.

⁽²¹⁾ Interview with a member of Corambiente, 1 October 2013.

⁽²²⁾ Tercera Encuesta de Percepción Ciudadana Bucaramanga Metropolitana Cómo Vamos 2012, page 101.

⁽²³⁾ Interview with a member of the Local Association of Entrepreneurs (FENALCO Santander), 24 October 2013.

political ecology fall within a Foucauldian reading that amounts to a normative management of populations by the sovereign power or, in other words, to the governance of life (see, for example, Braun, 2011; Ekers and Loftus, 2008; Gandy, 2006; Wainwright and Mercer, 2011). The reading proposed in this paper, on the other hand, sees the biopolitical as a creative and emancipatory power that is exerted from below and through collaborative engagement, and that is capable of producing forms of community, social subjects, and even forms of life. By grounding the analysis in the case of the struggle for water in Bucaramanga, I have intended to demonstrate that the urban is the ultimate locus of these biopolitically produced natures, because, as Lefebvre observed (2003 [1970]), cities are above all places of encounter and assembly. In Bucaramanga the forms of community, social bonds, and subjectivities—in other words, the natures—that were biopolitically produced through social cooperation enacted different patterns of metabolic interaction where the rift between the urban and the nonurban was mitigated. In sum, the case of Bucaramanga evinces the reversal of a subject–object relation that characterises contemporary productive activity, because the object of production of the networks of immaterial labour engaged in the defence of the páramo was not an object but a subject, a living social subject.

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