

Expo 2015 in Milan: the power of the Machine

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Abstract

This article describes and analyzes the Expo 2015 in Milan, building on the work of Alf Hornborg on the 'Machine' to discuss material and ideological processes of this mega-project. Hornborg calls attention to the social inequalities enabling the employment of technology in production (not only in the capitalist world-economy) and to its cultural underpinnings, among them money fetishism. With mega-events, the geoculture of the capitalist world-economy extols 'growth' and 'development' and celebrates the interstate system, legitimating public expenditures with a media-hyped importance of the event. The cultural force of mega-events obtains social acceptance of the unequal exchanges at their material core. Under Expo 2015's slogan "Feeding the planet, energy for life", agricultural land was destroyed to build a cement platform the size of a small city in a space of unbounded capitalism where labor laws were suspended and fiscal advantages were granted to firms. The Italian state paid for the basic infrastructure, while foreign states (and the corporations present) provided for their own pavilions. Ideologically, Expo 2015 celebrated the capacity of states and the transnational companies to 'technological advances.' Technology was presented as an autonomous force in history, propagating a vision of humanity acting on nature through a 'purified' technology independent of social relations of production. The 'Milan Charter', the Expo's cultural legacy, produced and reproduced the hegemonic geoculture which presents technology as the solution to social problems.

Keywords: Expo 2015, mega-events, the Machine, human ecology, Alf Hornborg

Résumé

Cet article décrit et analyse l'Expo 2015 à Milan, sur la base des travaux de Alf Hornborg sur la « la Machine » pour débattre les processus matériels et idéologiques de ce méga-projet. Hornborg attire l'attention sur les inégalités sociales permettant l'emploi de la technologie dans la production (non seulement dans l'économie-monde capitaliste) et sur ses fondements culturels, entre eux les fétichisme pour l'argent. Avec les méga-événements, la géoculture de l'économie-monde capitaliste exalte la « croissance » et le « développement » et célèbre le système inter-États, légitimant les dépenses publiques avec une importance médiatiquement exaltée de l'événement. La force culturelle de les méga-événements obtient l'acceptation sociale des échanges inégaux à leur base matérielle. Sous le slogan de l'Expo 2015 « Nourrir la planète, énergie pour la vie », des terres agricoles ont été détruite pour construire une plate-forme de ciment la taille d'une petite ville dans un espace du capitalisme sans limites où les lois du travail ont été suspendues et avantages fiscaux ont été accordés aux entreprises. L'État italien a payé pour l'infrastructure de base, alors que les États étrangers (et les entreprises présentes) l'ont fait pour leurs pavillons propres. Idéologiquement, l'Expo 2015 a célébré la capacité des États et des entreprises transnationales aux « avancées technologiques ». La technologie a été présenté comme une force autonome dans l'histoire, avec la propagation d'une vision de l'humanité agissant sur la nature par l'intermédiaire d'une technologie « purifiée », c'est à dire indépendamment des rapports sociaux de production. La « Charte de Milan », représentée comme héritage culturel de l'Expo, produit et reproduit la géoculture hégémonique qui présente la technologie comme la solution aux problèmes sociaux.

Mots-clés: Expo 2015, méga-événements, la Machine, écologie humaine, Alf Hornborg

Resumen

En este artículo se describe y analiza la Expo 2015 en Milán, basándose en el trabajo de Alf Hornborg sobre la 'Máquina' para discutir los procesos ideológicos y materiales de este megaproyecto. Hornborg llama la atención sobre las desigualdades sociales que permiten el empleo de la tecnología de la producción (no sólo

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en la economía-mundo capitalista) y sus fundamentos culturales, entre ellos el fetichismo para el dinero. Con los grandes eventos, la geocultura de la economía-mundo capitalista exalta el 'crecimiento' y el 'desarrollo' y celebra el sistema inter-Estados, legitimando el gasto público con la importancia del evento, exaltada para los medios de comunicación. La fuerza cultural de la empresa megaeventos obtiene la aceptación de los intercambios desiguales que están en su núcleo material. Bajo el tema de la Expo 2015 "Alimentar el planeta, energía para la vida", tierra agrícola fue destruida para construir una plataforma de cemento del tamaño de una pequeña ciudad creando un espacio sin límites del capitalismo, donde se suspendieron las leyes laborales y se otorgaron ventajas fiscales a las empresas. El Estado italiano pagó por la infraestructura básica, mientras que los Estados extranjeros (y las corporaciones presentes) pagaron para sus propios pabellones. Ideológicamente, la Expo 2015 celebró la capacidad de los Estados y de las empresas transnacionales a los « avances tecnológicos ». La tecnología fue presentada como una fuerza autónoma en la historia, por la propagación de una visión de la humanidad que actúa sobre la naturaleza a través de una tecnología 'purificada' independiente de las relaciones sociales de producción. La "Carta de Milán", representada como el legado cultural de la Expo, produce y reproduce la geocultura hegemónica que presenta la tecnología como la solución a los problemas sociales.

Palabras clave: Expo 2015, megaeventos, la Máquina, ecología humana, Alf Hornborg

1. Introduction

This article engages with Alf Hornborg's theory of the 'Machine', which highlights the unequal material exchange taking place within the monetary circuit and mystified by technology fetishism, applying it in a case study on the Milan Expo. Expo 2015 was a cultural event to create and build consensus for the capitalist *status quo*, and an enterprise that materially changed and degraded nature, *in primis* the soil on which the Expo was built. Materially speaking, mega-events like the Expo are occasions for concentrating a paying audience – if people are curious about the activity offered – for a limited period of time in a space transformed for the occasion. Massive advertising and media attention (often paid for) contribute to this curiosity, and so too does attendance by heads of state. On offer at a mega-event may be a special, or popular, activity – examples are the Olympic Games, FIFA soccer cups, important anniversary celebrations (e.g. the Colombiadi/Celebrazioni Colombiane in Genoa and Seville for the 500th anniversary of the European discovery of the Americas, and the 150th anniversary of the unification of Italy in Turin), and Universal Expositions – now called Expos – organized around a particular theme. These exhibit the 'power of the machine', on display for everyone to admire.

Mega-events circulate among urban spaces all over the planet at regular intervals, rapidly transforming the physical environment of their sites in order to meet immovable deadlines set years before. Expos, the Olympic Games, soccer cups, and various national/international celebrations can be thus read as a part of the 'Machine', the ever-expanding technomass that Alf Hornborg has theorized (Hornborg 2001, 2016). They are also examples of concentrated public expenditure – the importance of which James O'Connor (1973) underlined – intended to revitalize 'the economy' but also increasing the public debt. A mixture of market and state mechanisms are needed if the physical transformation planned for the mega-event is to come about. The transformation involves the plundering or unequal exchange of resources: water and construction materials are appropriated by the private sector, to be used as production factors in building the mega-event's infrastructure.

Mega-events are also catalysts for the production and reproduction of the geoculture of the capitalist world economy, in particular with their celebration of the interstate system based on national identities (Wallerstein 1991). In what follows, the case of Expo 2015 in Milan will be analyzed as an instrument to revive the M-C-M (money-commodities-money) capitalist circuit from a material point of view and through cultural legitimation, including the legitimation of the application of technologies to agricultural development, through its slogan "Feed the planet, and energy for life."

Can the analytical tools employed to describe the continuous work of the 'Machine' and of capitalist society in general be useful for understanding an event like Expo 2015, which by definition has a limited time span? Yes, if we consider the accelerating effect of a mega-event as 'construction/destruction', in the sense that its 'construction', which is the thermodynamic degradation of energy and resources, contributes to

accelerated human-generated entropy. Any profit is underpinned by large state expenditures. The 2015 Milan Expo had its gates open for only six months, and although it is now over, its cultural importance is certainly not restricted to that period, not least because of its 20 million attendees and its media presence.

2. Mega-events as mega-projects

Mega-projects are different to mega-events. They are essentially large-scale government investments in physical capital at the service of economic growth, involving energy extraction or some facilitation of the movement of people and goods. Mega-events, if they cost enough, can also qualify as 'mega-projects' despite their temporary character (Flyvbjerg, Bruzelius and Rothengatter 2003). Moreover, like mega-events, "mega-projects involve the creation of structures, equipment, prepared development sites, or some combination thereof. They cost at least \$250 million in inflation-adjusted year 2002 dollars" (Flyvbjerg, Bruzelius and Rothengatter 2003: 2, no.1). Bent Flyvbjerg calls attention to the search for the 'sublime' in pursuit of mega-projects, a cultural element that factors into the decision of authorities to fund them (Flyvbjerg 2014). They also reproduce inequality (Swyngedouw 2007). But the main concern voiced by critics of mega-projects or mega-events is their large cost overruns - a feature that many of them share. But is this the most important aspect? Money fetishism sees money as real wealth, not as a symbol and a force persuading people to act out of need for it. What can we see if we look beyond measurements in money to what happens in the material world?

While the literature on mega-projects and their critique has been developed in academia (generally using mainstream economic analysis), the literature on mega-events is less extensive. It includes definitions (Müller 2015), but usually analyzes the economic role of mega-events in terms of local impacts (e.g. Burbank, Andranovich and Heying 2002; Guala 2015; Hayes and Horne 2011), any planned urban regeneration (e.g. Kassens-Noor 2012; Scherer 2011), heightened international visibility for the host city and country (e.g. Cornelissen 2004; Hiller 2000), or the changing identity of the host city (e.g. Glynn 2008; Gold and Gold 2008). A conspicuous body of literature deals with event effects on tourism and other profit-oriented activities (e.g. Roche 1992). Mainstream studies engage with how to render mega-events 'sustainable' (e.g. Preuss 2016); but to others this seems to be a contradiction in terms (Gaffney 2013; Hayes and Karamichas 2012). There is also work on their negative effects on socially disadvantaged groups, as happens around event locations where gentrification advances (e.g. Kennelly and Watt 2011). There has been a shift over time to the East and Global South for key events, and work has explored the 'creative destruction' that this entails (Gruneau and Horne 2016; Müller and Pickles 2015). Many academic critics move within the framework of liberal theory that extols the market, and in the scientific literature on mega-events and mega-projects there is a dearth of analyses emanating from social movements and other critical non-academic sources. In this article, I privilege information from social movements and investigative reporters, because they have shown a depth of analysis lacking in official sources on Expo 2015.

3. The analytical frame

Contemporary Marxism, in its reflection on the society/nature relationship, is divided on the importance of culture, downplayed in early work (Burkett 2005; Foster 1999 and 2000; Moore 2012; O'Connor 1997; Wallerstein 1999). World-systems analysis posits that culture is a force independent of its material basis, and also highlights the role of the state in fostering profit (Wallerstein 2004). States mobilize their resources to lower the costs sustained by private firms in production – e.g. transportation and energy distribution costs – while they stimulate technological innovation by guaranteeing a profit to developers, especially in the key strategic sectors of the military and communications. Exploring culture and power, James O'Connor (1973) analyzed the state in less functionalist terms, not just as a prop for the ruling class but as a locus of distributive class conflicts. Giovanni Arrighi and Beverly Silver (1999) showed that a political logic centered on power at all costs is at work in the historical structures of the capitalist world-economy, and David Harvey (2006: xvi) stresses the importance of 'accumulation by dispossession', a form of predatory accumulation where power rather than economic coercion is used.

A new theory to interpret the relationship between capitalist society and nature has been propounded by the Swedish anthropologist Alf Hornborg (2001, 2016, 2017). In *The power of the machine*, Hornborg

analyzed the interplay of money and industrial technology that leads to the accumulation of a 'technomass', with deleterious effects on the environmental balance of the entire planet (2016). Hornborg considers his work as a new chapter in Karl Marx's *Kapital*, departing from money fetishism. It is a study in the multidisciplinary field of human ecology that uses world-systems analysis and the work of Nicholas Georgescu-Roegen to qualify human 'production' as transformation and destruction. It also takes stock of the attempts by ecological economics to connect prices and value to physical quantities or qualities (Hornborg 2015; Martinez-Alier 1987). The rejection of the law of value is the distinctive theoretical feature of Hornborg's work, and some of his most recent writings are specifically devoted to it (Hornborg 2014; Trawick and Hornborg 2015).²

Instead of reasoning in terms of labor-value or energy-value, Hornborg draws attention to the symbolic value of money. His view of technology is very different from its celebration in both liberal and Marxist writings:

The concept of technology from now [the industrial revolution] on signified the seemingly magic capacity of some humans to improve their conditions through sheer ingenuity. Technology thus continued to be perceived as more or less completely a product of inventiveness, without regard to the particular kinds of global exchange relations on which it depended. [...] From the perspective of privileged sectors of society, investment in new technology is understandably perceived as progress. This conviction has for at least two centuries been fundamental to dominant conceptions of history, development, and modernization. (Hornborg 2016: 26)

Hornborg's latest book, *Global magic* (2016), reveals the function of general-purpose money in masking relationships of cultural or material power, and restates his argument that the Machine is a fetish to which we attribute independence from social relationships – whereas, in fact, a machine can only function if these relationships are unequal:

The decisive question, in order for it to be rational to replace labor in one part of the world with technologies based on imports of natural resources and embodied labor from other parts of the world, is how labor and resources are priced in the different areas. This is why technology is ultimately a question for the social sciences, rather than engineering. (Hornborg 2016: 126)

In considering all industrial technology to be "inherently exploitative" (2001: 45, 130), "sources of malign agency" (2011: 35), Hornborg detaches himself not only from the long tradition of orthodox Marxism, but also from world-systems analysis. Immanuel Wallerstein warned against such a generalized negative view: "There has been an unfortunate tendency to make science the enemy and technology the enemy whereas it is in fact capitalism that is the generic root of the problem" (Wallerstein 1999: 8). Conversely, Hornborg (2011: 103) dismisses the Wallersteinian explanation of unequal exchange based on the economic force of monopoly and oligopoly as economism, because the attribution of a money value to products is a purely social process.

For Hornborg, the continuously growing technomass, the Mumfordian Machine, is essentially anything that can obtain resources (raw materials and fuel, but also human labor) to further its existence by means of M, the profit obtained in exchange for its thermodynamically degraded products:

In pricing commodities representing dissipated resources higher than those resources contemporary forms of money and market exchange will inexorably reward an accelerating dissipation of resources. The problematic relationship between general-purpose money and

² He nevertheless acknowledges the validity of the labor theory of value in pre-fossil fuel societies (Hornborg 2001: 12). In dialogue with Hornborg, Moore (2000) defends Marx's law of value, to which he adds the concept of "ecological surplus." Hornborg (2016: 169, n.7) dismisses Moore's position.

thermodynamics inevitably also generates unequal exchange in the sense of objectively asymmetric transfers of biophysical resources from extractive sectors to core regions of the world-system. (Hornborg 2016: 80)

The continuation of this destructive cycle is granted by the realization of profit: "In pricing commodities representing dissipated resources higher than those resources, contemporary forms of money and market exchange will inexorably reward an accelerating dissipation of resources" (Hornborg 2016: 80).

4. The mega-event Expos

If mega-events in general aim at strengthening the national identity, or the local identity within nations, by staging competition among states and 'honoring' the host territory, Expos in particular combine all this with a promise of cosmopolitanism:

An Expo is a global event that aims at educating the public, promoting progress and fostering cooperation. It is the world's largest meeting place, bringing together countries, the private sector, the civil society and the general public around interactive exhibitions, live shows, workshops, conferences and much more. (<http://www.bie-paris.org/site/en/>)

This quotation is from the website of an organizer of contemporary Expos, the Bureau International des Expositions (BIE), an intergovernmental body established by the Convention relating to International Exhibitions (1928). It regulates those which are neither commercial nor artistic, and that last for more than three weeks. The BIE now has a membership of about 170 countries. States take part in Expos for 'promotional' reasons and the BIE facilitates the representation of poorer countries. Cities which nominate themselves to host a Universal Expo (which last six months every five years) or an International Expo (three months every two years) are evaluated by the BIE.³

The BIE's general secretary, Vicente Gonzales Loscertales, credits the invention of the concept of *exposition* to the French bourgeoisie, triumphant after the French Revolution. The French state sought popular support by organizing the celebration of national identity and the idea of progress. In 1798 Paris hosted the *Exposition publique des produits de l'industrie Française*, and Napoleon organized three further expositions in which industry and economics were extolled, culminating in award ceremonies for the best entrepreneurs: "The exposition is the place where materials are experimented with, and their practical and creative use becomes a factor of civilization" (Gonzales Loscertales 2008: 11). The historian Paul Greenhalg writes that "the genre became a self-perpetuating phenomenon, the extra-ordinary culture spawn of industry and empire."⁴ The first to be international in character was the London exhibition of 1851, called "The Great Exposition of the Works of Industry of all Nations" by the sociologist Maurice Roche (2000). Twenty-five countries and some colonized territories (which also brought displays of human "savages") took part in it, and it was visited by six million people, generating a very positive bottom line. Its large Crystal Palace, destroyed by fire in 1936, lives on in the name of a South London suburb.

The success of these early expositions contrasts with the recent economic failures of Vancouver 1986, Lisbon 1998, Hanover 2000 and Saragoza 2008⁵, where not only was the balance negative but the infrastructure was subsequently abandoned. The Olympic Games in Athens 2000 is another prominent example of the dangerous legacy of debt and rusting buildings left by a mega-event with its accelerated destruction of energy and resources. All seven recent mega-events considered by Stefano Di Vita (2010: 309

³ See Gallione (2012: 36, 46) on the buying and selling of votes of the BIE member states.

⁴ Quoted by Roche (2000: 47) from Greenhalg, P. *Great exhibitions and world's fairs, 1851-1939*. Manchester University Press, 1988: 2.

⁵ I could not find an overview of the economic results of all recent Expos (and BIE did not reply to my request for data). It is interesting that the food provider in Saragoza, Milano Ristorazione, lost €1.2 million (US\$1.4m) on the occasion, having bought special equipment for €800,000 (US\$937,000) which was left to rust in storehouses after the end of the Expo (Carlucci and Caruso 2012: 250).

ff) lacked democratic decision-making combined with a disregard for previous social and urban problems of the areas chosen. They provoked a deterioration of the environment, and four of them did not achieve the economic development expected. Moreover, in 2016 economists declared that "the Olympic Games as currently conducted are not economically viable for most cities" (Baade and Matheson 2016: 214), citing proposals to reduce or stop the change of venue for every new Olympics.

Nevertheless, Expos are becoming increasingly popular among the ruling classes. While in 1992 BIE had about 80 member states, it had 169 in 2016, and more cities now compete to host the event by proposing a slogan-theme and a project of public works connected with it. In 2007 Milan advanced its candidacy to host Expo 2015, winning over its Turkish competitor Izmir in 2008. The chosen theme was "Feeding the planet, energy for life." The Expo spread the message that its protagonists, which were states, transnational corporations (among them New Holland Agriculture, Federalimentare, Nestlé, Granarolo, Barilla, Coca Cola), and the technology that they develop and use, were feeding the planet and were the source of the energy necessary for life. The role of the public in organizing Expo 2015 fulfilled the "legitimization function" of the state, to use O'Connor's expression: the attempt to make people accept the growing application of technology to agriculture.

5. The political debate on Expo 2015 in Milan

The Expo goals of development, progress, and economic growth were shared by all the parties that came to local and national power after Milan's candidature in 2007. Milan's candidature was drafted by the former local right-wing government (with Letizia Moratti as mayor), with the support of the left-wing Prodi government. In 2008 the contract for hosting Expo 2015 was signed by BIE and the Italian government, and entailed the foundation of a private company responsible for the event: Expo S.p.A. ('Società per Azioni,' a shareholders' company).⁶ Its president, Diana Bracco, was at that time the president of Assolombarda, the regional association of entrepreneurs. She later became vice president of the national association Confindustria, and has been convicted since of tax evasion to the tune of €1,000,000.⁷ The left-wing local government elected in 2011 (mayor Giuliano Pisapia) took over responsibility, although it could have opted out of the contract with BIE by paying a penalty much lower than the cost of the mega-event. In Parliament, only Movimento Cinque Stelle objected to this public spending, while all other parties enthusiastically greeted the awarding of the Expo 2015 site as a "great opportunity" for Milan and for the whole country. Even the Catholic Church joined the chorus: "We are convinced that Expo 2015 *can represent an occasion for the Milan of the future to find its soul*" (Scola 2013: 10, italics by author). At the grand opening of the exposition, Pope Francis sent his usual message laden with hope: "This is a propitious occasion to globalize solidarity, let us not waste this opportunity."⁸ The rhetoric of political leaders was all centered on 'growth': the justification for the expenditure on Expo was job creation and an increase in the economic growth rate. "Today Italy enters its tomorrow", declared Prime Minister Matteo Renzi when opening the Expo, suggesting that the country's long economic crisis would come to an end through the enhanced exports of the Italian products on display.

The main opponent to the mega-event was the No Expo Committee. This later became a coalition called *Attitudine No Expo*, which since 2007 had organized initiatives to inform the public, including Climate Camps since 2011, and produced books and other critical material (e.g. the five issues of *Rivista No Expo*, downloadable at www.sosfornace.org) underlining the waste of public money and nature to sustain the private sector. It parodied the Expo theme as "Feeding the transnationals, damage for the planet." In its publications, the Expo was depicted as a "shock economy" operation (Klein 2007), that would end in "the Trimurti of debt-precariousness-cement" (Offtopic and Maggioni 2013: 172):

⁶ Arexpo S.p.A. was founded also with the task of finding the site. It bought the land and gave it to Expo S.p.A. for gratuitous use, remaining in charge of selling the site after the event.

⁷ "Frode fiscale e appropriazione indebita, condanna a due anni per Diana Bracco", *La Stampa* 19/10/2016 <http://www.lastampa.it/2016/10/19/italia/cronache/due-anni-a-diana-bracco-per-frode-fiscale-pz0jVVJ8aFdZlCeoupgOPP/pagina.html>.

⁸ http://www.ansa.it/canale_expo2015/notizie/news/2015/04/30/expo-2015-si-alza-il-sipario-tutto-il-mondo-guarda-milano_5758576a-ee29-4669-8472-b4d807d97f02.html

Expo is the fetish used to justify actions that politicians and banks would have taken anyway, but at a different pace. If and when they are accomplished, it will only be because local authorities will assume the debts. Italian 'project financing' works in this way, while project financing should instead guarantee returns on the investment thanks to the money raised by the accomplished work itself. For example, a motorway should pay for itself with the money made from the tolls. Meanwhile, however, someone must spend to build the road. Banks have no confidence, neither does the private sector: the public is still the bottomless cash cow. (Offtopic and Maggioni 2013: 144)

The Clash City Workers, a Marxist group which considered Expo to be a typical appropriation of public goods to remedy the falling profit rate, wrote:

Expo is an event that condenses the major contradictions of capitalism: from the environmental crisis to financial and property speculation, from the privatization of key resources to corruption, from the tendency to monopoly to the degradation of the quality of food. (Clash City Workers 2015)

Consistent with Hornborg's vision of the technomass, the anarchists-ecologists were concerned with capitalism's intent to murder Nature in the dream of substituting it with technology. The group Rondoni in Volo predicted that Expo would not last six months, and decried it as an attack of capitalist technology on life itself: "life [is] more and more exploited in all its forms, [it is] considered to be a phenomenon on which to experiment indiscriminately, relying on the idea of a neutral science at the service of progress" (Rondoni in Volo 2015: 4). The Expo was cast as a massive enterprise of 'social education' to defeat the fear, widespread in the public, of the technological manipulation of food (e.g. the rejection of GMOs). The progressive substitution of reality with technological devices was also denounced as a characteristic of Expo techniques of display and current life under capitalism. It was alleged that, under Expo-related programs, schools had accepted partnerships with firms of dubious social value, like Rio Mare (tuna fishing and canning), familiarizing pupils with a brand that prospers from overfishing.

Under fire by all the aforementioned groups, the Expo invited NGOs to take part in a 'Civil Society' pavilion on the Expo premises. Forty NGOs contributed examples of anti-trade union actions and unfair commercial practices by the transnational companies who were 'global partners' and sponsors for Expo, such as McDonalds, Nestlé and Coca Cola. They denounced the proposed "Milan Charter" (Coordination Board for the Redaction of the Milan Charter 2015, see below), arguing that the Expo was:

...a great cultural swindle, in which the grand policy of 'feeding the planet' is entrusted to technology, science and finance multinationals. The examples are GMOs and the world price of water. Civil society should locally promote nutrition education (rather than 'I produce junk food, then educate you not to eat it'), good practices, charitable solidarity, going to the gym to lose weight. The structural causes of the food crisis, and the guilty, have disappeared (Molinari and Redazione 2014).

The forty NGOs denounced the fact that the agricultural model showcased was the one promoted by transnational companies such as DuPont (partner of the USA pavilion), Monsanto, Nestlé, and the many others that research and market biotechnology. The aim of the model, they argued, is to dispossess peasants, appropriating seeds through patents to garner a continuous stream of profit that renews itself at every new sowing.

So that everything would be ready for the grand opening on 1st May (in itself an insult to the working class, because in Italy Labor Day is a public holiday celebrated with workers' parades) a new figure with special powers was created: a government-nominated Commissar, Giuseppe Sala, who could bypass environmental and labor laws, creating a 'state of exceptionality' that gave free rein to the commodification of

everything. Sala, selected as the Center-leftist candidate and elected in 2016 mayor of Milan, is currently under investigation for corruption and bid-rigging in his role as Expo Commissar.⁹

In the end, the May 1st deadline was met and Expo opened its doors in the morning (Figure 1). The annual afternoon Mayday Parade – initiated in 2001 in Milan by the *precariato* in opposition to the morning parade organized by the trade unions – was entirely dedicated to the anti-Expo protest. Tens of thousands gathered and marched. A 'black bloc' of a few hundred masked people set fire to a dozen cars and broke the windows of some 50 shops in the streets of the city center, provoking shrill descriptions by the press of "Milan put to fire and the sword." The day after, the mayor Giuliano Pisapia and the Democratic Party (PD) rallied twenty thousand volunteers to erase the political graffiti left by protesters.

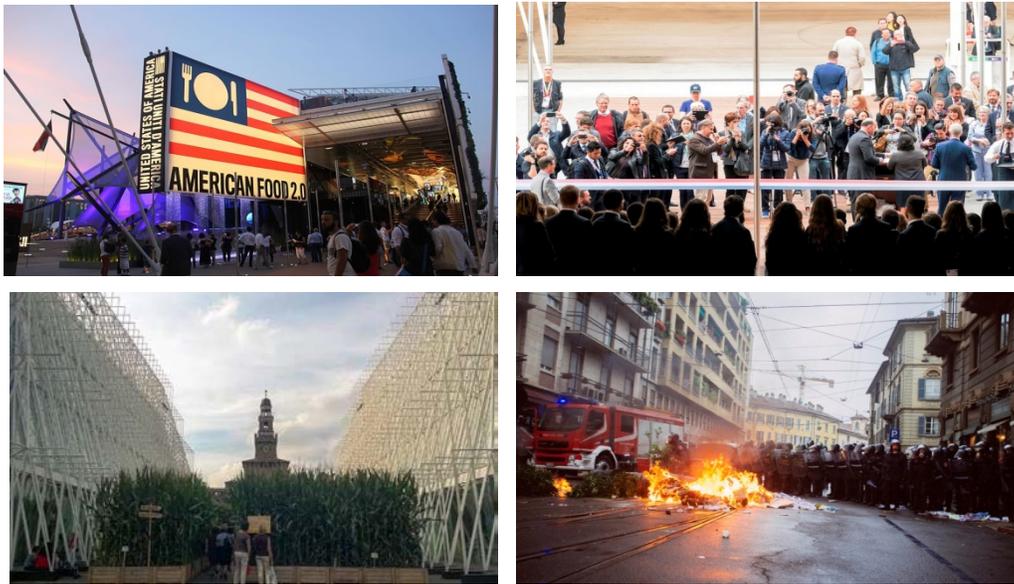


Figure 1: Expo 2015, Milan. USA pavilion (American Food 2.0), its opening with journalists, Expo Gate, and street protests on May 1, 2015. Source: Wikimedia Commons. Attributions - [1](#) [2](#) [3](#) [4](#).

6. "C'è da fare il mondo" (There's a world to be made)¹⁰

Expo 2015 was a bad investment of public money, closing 2015 with a loss of €32.6 million (US\$38.2m). Influential journalist Gianni Barbacetto quantified the total loss at around €250 million (US\$29.3m), including land rent that was unpaid.¹¹ The economists at the private Bocconi University foresaw €4.7 billion (US\$28.9b) in increased production between 2012 and 2020 – but 'only' €10.5 billion

⁹ Building of the platform was contracted to Mantovani, which offered a depreciation from €72 to €49 million (US\$319-175m), well under market prices. Randacio, E. "Sala indagato nell'inchiesta sul maxi appalto Expo: 'Mi autosospendo anche se non ho idea delle accuse'", 15/12/2016 in Repubblica.it (http://milano.repubblica.it/cronaca/2016/12/15/news/sala_indagato_expo-154193050).

¹⁰ The speaker is a *mafioso*, talking about the prospects for good business with a fellow member of a local clan: "L'Expo è una cosa milionaria, soldi, miliardi, c'è da fare il mondo" ("Expo is a worth millions. Money, billions, there's a world to be made" – telephone conversation intercepted by the judiciary and quoted by Stefanoni 2014: 224). See also <http://www.stampoantimafioso.it/mafia-e-expo-2015>.

¹¹ Barbacetto, G. "Expo 2015, Sala smentito dai suoi stessi numeri: il buco è di 237,2 milioni", Il fatto quotidiano 4/3/2016 <http://www.ilfattoquotidiano.it/2016/03/04/expo-2015-sala-smentito-dai-suoi-stessi-numeri-il-buco-e-di-2372-milioni/2515456>.

(US\$12.3b) in value added. Every year 199,000 new jobs would be created, they argued.¹² Even the advocate of neoliberal policies Roberto Perotti (2014) admitted that a Keynesian multiplier effect would result from any state expenditure, and argued that the sum could have been better spent on projects more relevant to the necessities in peoples' lives, such as removing graffiti, filling potholes, and building public swimming pools. This critique from all directions is evidence that organizing circuses is politically risky when bread is hard to come by.

Expectations were gradually reduced, and by July 2014 the Commissar for Expo was predicting fifteen or sixteen thousand new jobs, still a far cry from the data certified by the Provincia di Milano: 4,500 new jobs distributed among 1,700 firms (though only local firms were monitored).¹³ Nine thousand workers and 156 cranes were employed to build the platform, with 1,000 heavy vehicles entering the site every day.¹⁴ The total number of people working for Expo was estimated at 15,000 by Giuseppe Sala, 600 directly for the exposition site during the fair, and 6,000 for the pavilions, managed by Manpower. But a large part of Expo's labor force during the exhibition worked for free, as more than 10,000 people answered the call for a "historic opportunity" to act as volunteer hostesses and stewards: the new *Voluntariat* class (Bascetta 2015). This was and is against the law, because 'volunteering' can be done for a not-for-profit association, but never for a commercial company (this did not go unnoticed in the outraged comments on the advert for volunteers at Expo posted on Youtube¹⁵; see also Fumagalli 2015). Though working for a private firm cannot be done for free, the confederated trade unions (except for FIOM) consented to this violation of labor laws and of the Constitution itself (art. 36 on fair remuneration) by signing an agreement with the Chamber of Commerce on the 23rd July 2013 to enlist 18,500 volunteers, to be compensated with a meal ticket a day for their two-week engagement (Bascetta 2015). The participation of volunteers was requested by BIE as a way to make 'civil society' participate in the event. Another agreement in May 2014 created an *Osservatorio Partecipanti* where the trade unions agreed to solve all labor disputes. "In other words," Clash City Workers (2015) declared, "at Expo it is forbidden to strike."¹⁶

There was also a legal dispute over the kind of contracts that were used in Expo, because an *apprendistato* (apprenticeship) should entail the teaching of a skill or job: but these contracts are not legal for services at fairs (Pizzuti 2015; San Precario 2013). Moreover, a deregulated form of apprenticeship was used, without the firm being obliged to document if it had taught the apprentice anything. Six hundred hired workers could not enter the site due to the lack of police clearance. There was no legal basis whatsoever for these controls, which were illegally carried out on, in total, 60,000 prospective workers. The Expo grounds were declared "sensitive" and "of strategic value" (the site's perimeter was protected by a 3 meter wall with barbed wire, under surveillance by soldiers with machine guns). Workers were refused entry by police on the basis that they had illegally put up political posters, or because they frequented squatted buildings and *centri sociali*, which organized the most vocal opposition to Expo.¹⁷ Expo was therefore a space of unbounded capitalism, where the workforce partially renounced, and was partially legally prevented from organizing, thus guaranteeing entrepreneurs a low labor cost.

¹² *L'indotto di Expo 2015. Un'analisi di impatto economico*, edited by A. Dell'Acqua, and paid for by the Milan Chamber of Commerce (a synthesis of the study http://www.mi.camcom.it/c/document_library/get_file?uuid=b10742f8-6563-4684-b0a5-c1df75050a1b&groupId=10157). See also the 2008 study: Dell'Acqua, A. and L.L. Eto. 2008. *Expo Milano 2015. Un'analisi di impatto economico per il Sistema Paese ed i settori industriali italiani*. Milan: SDA Bocconi School of Management.

¹³ The data come from Osservatorio mercato del lavoro and are presented by Cavicchio and Lo Verso (2014).

¹⁴ Caso di Studio – Expo 2015, il miglior maxi-cantiere italiano per la Sicurezza sul Lavoro. <http://www.alavie.it/2015/06/09/expo-2015-il-miglior-maxi-cantiere-italiano-per-la-sicurezza-sul-lavoro/>

¹⁵ <https://www.youtube.com/watch?v=FwpAZknHU8Q>, linked to <http://volunteer.expo2015.org/it/programmi> as information for prospective volunteers, but in fact a 1-minute ad with the slogan? "you'll have a lot of likes" on Facebook. A comment by an Expo hostess is significant: "Working for free at Expo is wrong" because it is taking away jobs. She also contradicted the rhetoric that the work of a hostess was glamorous, while it was in fact tedious, with visitors eager to go to their target, never stopping to make friends with the service personnel.

¹⁶ There was a strike by McDonalds employees. <http://campagnano-rap.blogspot.it/2015/05/milano-i-lavoratori-mcdonalds-rovinano.html>.

¹⁷ "Expo: licenziamenti preventivi, Viminale nella bufera" <http://www.ilmanifesto.info/expo-licenziamenti-preventivi-viminale-nella-bufera> 25/5/2015

The initial public allocation of €4.1 billion (US\$4.8bn) for Expo was cut by the Monti government to €1.486 billion (US\$1.74bn) when the global financial crisis hit Italy in 2008. The money for the initial investment was finally assigned in 2012: €30 million (US\$9.72m) from the state, €480m (US\$562m) from local authorities, and €70m (US\$82m) from the Chamber of Commerce. This direct 'investment' was transferred to Expo S.p.A., in charge of money-making through sponsorships, ticket sales and concessions to vendors. Fiscal exemptions were approved for Expo S.p.A. and its contractors with Law 3/2013. But this was not the only public expenditure that the government found necessary for Expo. Other, even more invasive, infrastructure was deemed 'essential' for traffic flow: two new highways; BreBeMi (€2 billion or US\$2.3bn for 61 km) and Pedemontana (€5 billion or US\$5.9bn for 67 km), an outer bypass called TEM (€1.7 billion or US\$2bn for 30 km, dubbed the most expensive highway in Europe) – all cutting through fields and also parts of the Parco Agricolo Sud – plus the enhancement of railways and junctions. It is plainly absurd to build new roads for the increased traffic expected for a temporary event, but Expo facilitated the building of these highway projects which had been fiercely opposed for two decades by the local committees opposing an increase in traffic and the destruction of fields and agricultural land. Public transport would also be improved with two new underground lines and extension of the existing ones (still not completed by 2017). In sum, the colossal public expenditures amounted to €12.4 billion (US\$14.3bn): €10 billion (US\$11.7bn) for mobility (on which a partial return can come in the form of user fees or concessions), and €2.4 billion (US\$2.8bn) spent by Expo S.p.A.: the costs during the 6 months were €940 million (US\$1101m), to be added to the €1.3 billion (US\$1.52bn) for the site construction and the €160 million (US\$187m) for buying the land.¹⁸

Another (quaint) part of the project was a double connection called "Vie d'acqua" and "Via di terra." The "Via di terra" consisted in a €90 million (US\$105m) expenditure to decorate the main streets between the center of Milan and the Expo site. The project was canceled due to the crisis. The "Vie d'acqua" was a boat canal (deceivingly called "Vie" in the plural) to be constructed from Milan to the Expo. Its budget was reduced from €290 to €175 million (US\$340-205m), again by government savings, and then partially transformed into an underground stream after a long fight with local committees opposed to the destruction of parkland along its urban tracts (Offtopiclab 2014). Inhabitants of the areas entered the sites and blocked the construction for months, but in unpopulated areas the works were completed. The final result is a much diminished new cement canal, about half a meter deep (or, rather, shallow), in areas where disused old agricultural canals abound side by side with the new ones. A part of the "Vie d'acqua" project was also the renovation of the Darsena, the old port of Milan, which was accomplished by laying cement on the remains of the 17th century Spanish Walls that used to stand on one side of the old port.

7. "Expo dà da mangiare" (Expo feeds)¹⁹

Technically, the private appropriation of public expenditures started with creation of the private firms, Arexpo and Expo S.p.A., to manage construction of the exhibition, as requested by the BIE, to which public money had been transferred. After a long debate among its numerous political heads²⁰, it was decided not to expropriate, nor to use public property, but that Arexpo should buy the land for the exhibition. The chosen site had a trapezoid shape, bordered by the high speed railway, two other railways and the *tangenziale* (the ring-road around Milan). It was nominally agricultural land, but in fact it was abandoned, scattered with illegal dumps, scrubland, and dirt roads. The only building was a farm, Cascina Merlata, hosting social projects, which were moved. Most of the land was in private hands, a choice that many commentators described as

¹⁸ See e.g. G. Barbacetto and M. Maroni: "Il buio oltre le code: Expo tra debiti e banche alle costole," *Il Fatto Quotidiano* 31/10/2015.

¹⁹ This was one of the two things that the crowd gathered to cancel graffiti on 2nd May shouted at a young woman who showed up with a sign on which she reproached the inhabitants of Milan for their indifference to people's deaths (e.g. the refugees drowning in the Mediterranean), while so promptly reacting when material things got damaged (Their other cry was "Take a sponge and clean."). (<http://video.corriere.it/no-expo-contestata-milanesi-prendi-spugna-pulisci/4584e474-f1af-11e4-a8c9-e054974d005e>)

²⁰ That is, the different local governments constituting the Arexpo and Expo companies.

Expo 2015's "original sin" (e.g. Gallione 2012: 157; Offtopic and Maggioni 2013: 104). In fact, former Expos had relied on some existing structures and never started completely from scratch.²¹

The choice entailed a conflict of interest because Fondazione Fiera was the seller and buyer of most of this land (520,000 m²). Of the rest, 260,000 m² was owned by the Cabassi family (originally excavators for other construction companies, now owners of one of the giant companies responsible for the *cementificazione* of Italy), 120,000 m² by the Rho municipality, 80,000 m² by the Poste, 52,000 m² by the Milan municipality (also in conflict of interest as both seller and buyer), and 20,000 m² by five other small private proprietors. It was bought for ten times more than its agricultural value: €120 per m² instead of €12/m², and €120 million (US\$141m) was paid for the total of about 1.1 million m². The value of the developed land was expected to increase tenfold after the Expo, but in November 2014 an auction to assign it attracted no bidders.²² At the time of writing, the government has announced the future opening of a new branch of the biotech Italian Institute of Technology of Genoa, a private institute financed by the public, promising it an endowment of €200 million a year.

After the acquisition of land, the authorities proceeded with a change of designation in the urban plan to permit construction. The land transformation in the Rho-Pero-Milan trapezoid started with the preparation of the terrain, then cement was poured. Cement-making is one of the most energy-intensive construction processes, and after land has been covered with cement, its potential for primary production is lost forever. The terrain was leveled, local streams were canalized, and the first artifact, the *piastra*, was built. The latter is a concrete platform, about 2 km long and between 350 and 750 meters wide, that is connected to the drainage system, water supply, and electricity grid, with about 10 km of roads. The works could be compared to the construction of a city, and had two permanent buildings and 80 temporary pavilions, a surrounding canal and a little lake, a children's park, and the former farm where NGOs had their base. The construction of the temporary pavilions was financed by the 145 nations and of the many big transnational corporations participating in the event (a constant presence). Coca Cola, New Holland Agriculture, Vanke, JooMoo, Federalimentare, and China Corporate United all had their corporate pavilions. Further public spending took place, in the order of millions of euros: e.g. €3 million (US\$3.5m) to build and furnish the Vatican pavilions, and €6 million (US\$7m) spent by the USA (Figure 1).

8. Justifying Expo 2015: the capitalist geoculture of mega-events

Apart from the construction of two new underground trainlines that will save time for its daily users of all classes, Expo concentrated public monies in a very peculiar project, temporary in the extreme.²³ From the point of view of the state, Expo was not so much a potlatch celebrating prosperity as a waste in a time of economic crisis. Indeed, many of the cultural elements presented were provided to the public to create consensus about the large public investment that had been committed to what was basically a six-month amusement park intended to astonish adults and children with 3D motion pictures, holograms, and bizarre architecture: "an exciting experience that leaves you speechless."²⁴ Still, "feeding the planet" was just a feeble excuse, because with an entry ticket costing €35 (US\$41)²⁵ the didactic part – what should have been a political debate – could hardly stand by itself without the fun fair. Traveling fun fair structures are temporary almost by definition, and put great emphasis on their lack of permanence in one place. Only for a short time

²¹ Though Roche (2000: 10) writes that mega-events "are usually intended to physically transform some strategically important area in cities."

²² Among the construction works connected to Expo there is the "Expo village" at the nearby Cascina Merlata: built to house about 1.3 thousand Expo delegates, a new quarter of 520,000 m² was built, with 1,600 apartments to be sold on the free market and 700 for social housing.

²³ The time saved by the new transportation works came at the expense of the time of all the workers who contributed to building it. As Hornborg might add, "technology may not primarily be a matter of *saving* time and space, but of *redistributing* it in global society" (Hornborg 2016: 65). See also Hornborg (2001: 150) and (2011: 49, 107). Similarly, the purchase of solar panels for public buildings in Rho from Expo S.p.A, paying €800,000 (US\$937,000), was greeted by the municipality as a windfall - reminiscent of the Incas, who were enthusiastic about the distribution of beer by their emperor, brewed with a fraction of the harvest that he had seized from them.

²⁴ <http://www.expo2015.org/it/da-non-perdere--le-attrazioni-dei-padiglioni>

²⁵ But many reduced and free tickets were distributed, too; the mean cost of the ticket was in the end about €17 (US\$20).

can people enjoy the machines that amuse them, and incessant advertising is always employed to draw attention to their exceptionality. Indeed, massive propaganda extolled the visit to Expo as a "must do": for years its brand was displayed everywhere in Milan and in the media, on cars belonging to sponsor companies and in train stations and on websites. It was even inscribed on the top of the new skyscraper of the Regione Lombardia. TV advertisements also targeted children in order to exploit 'the nag factor', enticing them to the Children's Park. School groups visited the exposition at discounted prices if so decided by the school's principal (€10/person, US\$11.75). The Region Lombardia (responsible for public education) aimed to bring two million pupils to visit with its *Expo 2015 e la scuola italiana* campaign (the letter for the school principals to send out to teachers encouraged the children to eat at McDonald's while at the Expo).²⁶ This target was met, and a total of 20 million entries were registered. The long queues at the gates and at the pavilions were considered a sign of success.

The first cultural factor creating acceptance of Expo was without doubt the promise of 'growth' and 'development'.²⁷ Another cultural element creating local support was the idea that Milan won an international competition to host the event, and gained the prestige associated with BIE approval. This was used as a boost to Italian national identity, and Milanese identity in particular. Let us not forget the promise to feed the planet through technology.²⁸ These cultural elements were supposed to legitimate the enormous public expenditure argued to be necessary for Milan to be "in good standing" and visited "by the world." Newspapers used entirely exaggerated headlines such as "Milano this year is the center of the world." In the name of international prestige, Italians were also encouraged to behave themselves on this occasion of international display, and also to volunteer or accept the flexible job contracts – shorn of workers' rights – that were introduced especially for Expo.

There is no real way to know whether these cultural elements were truly needed, as most people, out of passive acceptance of the government's decisions, do not actively protest against the public expense which they had never really been called upon to approve in the first place. Nevertheless, the economic violence of exorbitant fines crushed local resistance against the new roads and highways, while popular opposition to the urban canal did succeed after a long fight – but maybe that project has just been postponed. Such violence was employed against the opponents to public works ("Grandi Opere"): for example, in Val di Susa where the population has for years been blocking a new high-speed railway being bored through mountains with asbestos and uranium deposits, dispersing toxic dust all over their narrow valley. In 2014 activists were fined €15,000 (US\$252,000). The long-time resistance against the TEEM, the contested A58 highway on farmland at the edge of Milan, was quashed with the threat of "gigantic fines", and the road was finally built under the pretext of Expo – a pretext because it does not lead there.²⁹

The organizers of Expo expressed a concern – or rather, feigned one – about its impact on global warming, because cement-making is one of the most intense releasers of carbon dioxide, coming second to thermoelectric power stations. Nevertheless, the 'zero option' of not building it, and the 'minimal option' of using existing premises in an *Expo diffusa*, or "scattered Expo", were quickly discarded. Instead they turned to the sham solutions of the 2005 provisions in the Kyoto Protocol to 'control' the emissions of greenhouse gases through cap-and-trade arrangements.³⁰ All in all, the cap-and-trade system is only a smokescreen for capitalist "business as usual" (Lohmann 2012). The Expo website reports an estimation of its emissions including the construction, the materials, and the visitors' journeys: between 939 and 1,420 kton CO₂eq, even more than the amount that the EU had foreseen for the event. Under the EU-ETS (Emission Trading System), derived from Kyoto, the Expo S.p.A. is required to buy 'carbon credits', with money that would be spent by their seller on

²⁶ <http://milano.repubblica.it/cronaca/2015/04/30/news/expo-113210235/>

²⁷ In an article by the liberal Brookings Institution in the U.S., the opponents to mega-projects are identified as "antigrowth" (Altshuler and Luberoff 2003). For a concise, state-of-the-art presentation of the degrowth movement, see D'Alisa, Demaria and Kallis (2014).

²⁸ <http://www.expo2015.org/en/learn-more>

²⁹ See the report by Presidio Permanente Martesana <http://www.exposedproject.net/incendio-grigio/>

³⁰ Since 2005, when the EU-ETS system started, emissions in the EU have been cut by 3%, but even the official dedicated website recognizes that this is due to the crisis rather than to "carbon credits" (http://ec.europa.eu/clima/policies/ets/index_en.htm).

'environmental projects.' Solar panels were bought to be placed on 18 public buildings in Rho, co-financed at 50% by Expo and the rest by the municipality: so this remedy for excessive emissions required even more public expenditure.³¹

In every respect, 'sustainable development', the central concept of UNCED 1992 and subsequent international agreements, is a contradiction in terms (Danna 2012). And how is it possible to talk about the 'sustainability' of Expos at all? These events are designed to last six months. 'Sustainability' appears at the core of the "Milan Charter" presented as the legacy of this mega-event³²: it is gathering government signatures as if it were a UN document. Independent leftist city counselors with the participation of Susan George, founder of the Transnational Institute, and Flavio Valente of Via Campesina criticized its propositions about sustainability and equity in the "food system", writing "Expo: feeding the planet or the transnational companies?" (Milan, 7th February 2015). Despite the critique, the General Secretary of the UN came to Expo in October 2015 to receive the Charter from the Italian government.

In the Charter, and in Expo in general, attention is directed to technical 'solutions' that will presumably multiply harvests, in a renewed version of the Green Revolution. But, just as the Green Revolution did not stop hunger (Chandra *et al.* 2017), neither will these technical solutions. They will only require greater investments, generate debt, and result in land concentration, exactly as the Green Revolution did. Set aside and ignored is the long-discovered and widely demonstrated concept that hunger rarely derives from poor harvests (though these can raise the price of food, leaving more people without it), but rather from a lack of money and individualistic social organization (e.g. Davis 2001; George 1990; Lappé and Collins 1977, 1988). Obviously the cultural impact of Expo would be quite different if its publicity clearly stated how much its CO₂ emissions were, rather than stressing how it was how it was 'offset' with even more industrial activity, and what its true impact is in terms of soil loss and degradation of materials and of energy. But that was not the propaganda needed to get the public to come and enjoy the spectacle: an honest quest to solve humanity's environmental and nutritional problems was not on the agenda.

9. Expo as Machine: beyond money, the physical world

The machinery used to prepare a universal exhibition envisages the use of tangible machines, employed and/or produced by the big corporations of the core countries: machines for building but also state-of-the-art visual technology to illustrate the main contents of the exhibition, and control technology for the high-level security that the Expo site in Milan was declared to need. The bigger picture is that subordinate countries are routinely persuaded – by cultural elements, by positive economic forecasts and/or by corruption³³ – to pay for those machines and their functioning, generating public debt in a period of cuts to public expenditures for health and education. This is happening to the Expo host country, too. The balance of Expo S.p.A. has been negative, and the construction of the new highways and roads for the occasion has surely contributed to the Italian public debt. Indebted countries in the EU are currently forced to cut public expenditures e.g. in health service and schools – while it is evident that those debts cannot be repaid, since the interest rate keeps multiplying them (Graeber 2011). The result is going to be similar to the Structural Adjustment Programs imposed on Third World countries by the IMF and the World Bank, that worsened the quality and length of life and pushed the working class to accept almost any conditions of work.

In physical terms, Expo 2015 was a simplified environment, and many living or inert replicas of nature were built for visitors on the cement platform: pictures, holograms, the reconstruction of (even vertical) fields and forests with animal sounds diffused by loudspeakers, and a shallow cement canal flowing around the perimeter. Land registered for agricultural use was 'developed' with what ecologists call 'a grey fire' because cement destroys life in a way similar to a blaze. The purpose of this destruction was to invite people to

³¹ Wayback Machine archive copy from Expo website <https://tinyurl.com/yaocchmu>. Site captured mid 2014 (but see Hornborg, 'Environmentally benign technologies as illusions: the example of solar power.' (2016: 117 ff.).

³² For a critical assessment of the "social legacy" of Expo 2015 see Costa (2014).

³³ See the autobiographical book by the economist John Perkins (2006) describing his work in producing forecasts to 'demonstrate' favorable economic returns e.g. for dikes and highways, in order to convince foreign governments to pay for the US corporations' projects by taking loans from international banks.

converge in a (sub)urban space, in principle from all over the planet, to admire an energy-intensive exhibition made up of materials and artifacts that were planned to be moved or disposed of after six months, with the delusion of sustainability fostered by the promise of recycling the temporary pavilions. But more machines and more energy must be employed in disassembling the pavilions and moving them, and since this is costly, it is doubtful that it will be carried out. It is planned that only two buildings will remain in place, with about the half of the Expo surface take up with new houses and commercial spaces, and a branch of a research university. The rest should become a public park – this is also likely to remain an empty promise, as many other Italian cases demonstrate (Sansa *et al.* 2010).

The further *cementificazione* of the Expo area could be uncertain if we look at peoples' needs. Milan and Italy as a whole already have more housing and commercial and industrial spaces than they need. Milan's population within the city's administrative limits has diminished by about 25% since 1971, and it has remained stable over the last ten years. Istat calculated in 2008 that in Italy 10% of the buildings were 'at disposal', that is, unused, in a country where 3.6 million hectares of agricultural land were lost from 1990 to 2005 (official statistics quoted by Martinelli 2011: 17). Lombardy is ranked first among the regions for its proportion of artificial surfaces: in 2008 they covered 14% of the land.

Nevertheless, lack of demand is generally not a problem for the construction sector, as buildings are considered both by companies and the population in general to be a value reserve in which to invest their money or, with a mortgage, their future monetary revenues. It is also not difficult to find credit to invest in new buildings, because the banks see their disbursement as active investments instead of passive loans (Martinelli 2011: 28 ff.). In fact, Italy is the top producer of cement in Europe; consuming 600 kg per capita a year, while the other EU countries consume less than 400 kg (Martinelli 2011: 75). Italian cement producers often burn mixed waste as fuel, saving money and creating more pollution. Ironically, local inhabitants do not protest against cement plants as much as do against waste incinerators, as the former are considered to be 'productive.' Unequal material exchanges take place at the local level, not just across borders. In the case of Expo, the private sector has exploited the public one for locally available building materials. The 'cement cycle' needs not only cheap construction materials but also cheap land on which to build: both are easily found in Italy. Excavated earth is sold by public authorities for a pittance (as happens with other common resources like water): limestone, clay, stone chippings, and gravel are public goods for which the Regions usually ask less than 10% of their market value from the companies which mine and sell them (Martinelli 2011: 25).³⁴ This low price guarantees enormous profits to excavators and the construction industry. Zoning changes in town planning are easily obtained because they bring fresh cash to the municipalities (*oneri di urbanizzazione*), which for decades have been subject to reductions in state allocations. Hence public resources are eroded not just in terms of money but also in terms of the productive potential of the land, which once 'developed' is degraded, to the advantage of the proprietors of the excavating and building machines, who manage to close the M-C-M cycle fostered by the public sector.

In the apologia for capitalism that Expo promoted, the fact that most of the final products of affluent societies it was promoting are useless, escaped attention. This includes the buildings, on display as a sign of prestige or as identity markers, but then left empty. They represented prestige to the states and the companies displaying them: that is, they were socially useful, but did not satisfy any primary need. Objects built for Expo were mostly as temporary as the signs that were posted all over town to signal the exhibition (even the name of the railway station of Rho Fiera was temporarily changed to "Rho Fiera Expo"). Just one example: Azerbaijan displayed 'tulip fields' in its national four-story pavilion called "Azerbaijan: a treasure-house of biodiversity": artificial flower-like shapes in different colors that moved when the visitors' hands hovered over them (many of them were no longer working within a month) (Figure 2). Whether they were built as an experiment in order to demonstrate technology that has wider uses, was not explained. Their fate since the exhibition is unknown.³⁵

³⁴ See Martinelli (2011: 47); his original source is Legambiente. See also the information gathered by the movement *Stop al consumo di territorio*, active since 2009.

³⁵ Other exhibits included sacks of rice and beans from Haiti and bowls of pistachios and dates from Iran, with no further energy supply needed.



Figure 2: Tulips from Azerbaijan. Source: Wikimedia Commons. Attribution - [1](#), [2](#): author, and [3](#).

10. Culture and power

Alf Hornborg underlines the importance of cultural factors in the acquiescence to, and the acceptance of, the unequal exchanges revealed by a thermodynamic analysis of the material and energy flows between core and periphery of the world-system. His analysis is valid also for the local unequal exchange that took place in the Milan Expo. But is the cultural power of the Machine, on which the unequal exchange rests, really only an "arbitrary foundation" (Hornborg 2001: 1) as *The power of the machine* would suggest? If machines are "the results of asymmetric, global transfers of resources" (Hornborg 2001: 11), what is the primary cause of this outcome? The role of violence and the threat it represents in achieving the 'exchange' was highlighted in *Global magic* (2016), and indeed we have seen it at work in the Expo. Nevertheless, by stressing the cultural power to create consensus, Hornborg under-emphasizes the implicit violence of 'the Machine', which can be exemplified by 'the Weapon.' Weapons are machines of a special kind that major states strive to develop, guaranteeing profits to the companies researching and providing them, in the knowledge that violence or the threat thereof assures continued access to the resources needed by all the other machines.³⁶ Hornborg reasons that governing by persuasion is cheaper than by guns – but can one substitute the other completely in a capitalist world-economy? Is not the Weapon – and the soldier or the policeman holding it – the ultimate reason for the cultural acceptance of exchanges that are unequal to an extent unknown in history before our times? Hornborg recognizes power as violence or its threat, but he does not extend his analysis to the power of those machines that are not 'productive' but destructive: a weapon forces someone to comply with another's will without receiving anything in exchange. Only in this sense can the technomass be said to 'generate' unequal relations of exchange (Hornborg 2001: 17): the capacity for violence,

³⁶ This has been commented upon in the case of the Israeli-Palestinian conflict in the anonymous but detailed pamphlet *Meraviglia delle Meraviglie. Israele a Expo Milano 2015. Come far fiorire il deserto rubando l'acqua ai palestinesi*. Bologna, 2015.

also derived from the core's Machine is lurking behind the unfair terms of trade, having first been established in colonial times.³⁷

The cultural power of Expo is effective: it rests solidly on the capitalist geoculture, reproducing and thereby producing and perpetuating it. Also because of its appeal, it seems an exaggeration to place this mega-event in the category of 'plunder' of public resources, as some activists and journalists – albeit metaphorically – have done. Open violence in core states is less and less overtly employed. But what seems sufficiently effective, in a core country with a high standard of living, is the economic violence of exorbitant fines, ultimately backed by the threat of state violence.

On the other hand, describing Expo as 'plunder' may indeed be justified, not only because the fines were a legal form of economic violence, but also because it involved the openly violent and threatening (and illegal, of course) methods of the *mafia*, which controls a large part of the cement cycle business (Legambiente 2012).

Finally: why did the Italian State and its neoliberal elite not just directly distribute money to themselves instead of organizing an Expo? Bizarre as this question may seem, it in fact concerns all the issues addressed in this article: why is destruction called 'production' and rewarded with an increased capacity for thermodynamic dissipation? Why is the satisfaction of human needs not paramount in economic activity? If granting the elite access to purchased prestige items was the only thing at stake, a 'money shower' would have indeed been much simpler. But Expo *was* the elite's prestige item – and besides the profits made from winning its tenders or from corruption, the political and economic ruling class believed in its ability to create consensus.

The Expo-Machine also extols the ideology of 'work' justifying revenue, but in the cultural climate in which we are immersed, there is no scrutiny of its qualities: is this work beneficial to society or does it produce only avoidable pollution, rust and desolation? The money in possession of the elites is spent not only on the consumption that symbolically affirms their dominant role, but also on organizing 'production' (Georgescu-Roegen 1976), which is an actualized way of demonstrating power, affirming and reproducing it in the very act of employing people and assigning them tasks that are ultimately aimed at accruing the money injected to set a profit-oriented or public activity in motion. This praxis is clearly a way of to achieve a hierarchical social order.

11. Conclusion: State, profit, debt

From the monetary point of view, Expo was essentially an appropriation of public money to start a M-C-M' cycle to benefit some parts of the private sector, in particular, the construction industry, justifying this extravagant behavior with cultural motives. James O'Connor (1997) would describe it as perfectly fulfilling the two functions (or actions or aims) of the state: accumulation and legitimation. O'Connor also highlighted the role of the state in fostering technological progress in capitalism. The state and its monies play an essential role for mega-events as well, by orienting the direction of local 'development' – in inverted commas because many areas provided with infrastructure for these temporary mega-events have subsequently been abandoned. An oasis of low-cost labor and tax exemptions was offered by Expo to entrepreneurs, besides the usual permits to exploit material resources like water and the land. In short: in the case of Expo, private firms did not derive profits from the market, but from states, also ones in debt. If this origin of profit can found in many other mega-events, interesting research questions emerge.

An analysis in terms of energy and material flows in the building and functioning of Expo was not possible (also due to a lack of response to my requests for interviews to Expo S.p.A.). But even without knowing the exact quantities and provenance of energy and matter, the high monetary value given (especially) to the industrial products and machines that the state's money purchased, surely masks the fact that in this

³⁷ In his 2016 book, Hornborg is more attentive to power: "In turning from mercantile to ancient tributary empires with little or no market institutions, we need to ask to what extent the accumulation of capital can be viewed as the product of unequal exchange: can labor and resources appropriated through tribute at all be said to be exchanged? Although concepts of unequal exchange have been developed to expose asymmetries in trade masked as market reciprocity, the underlying and wider notion of exploitative, net transfers of resources must obviously include tribute as well" (Hornborg 2016: 69).

case their 'production' was really a transformation, entailing an accelerated process of entropy and pollution. Because it was rewarded with monetary profit, as Hornborg identifies, such a destruction cycle could continue.

There are two points in Hornborg's theory that are problematic: money is generally understood as a form of immediate payment (e.g. 2001: 13-14) while there is no specific discussion of the mechanism of debt through which production can be achieved by money creation. The second point is that Hornborg seems to conceive market prices as the only decisive factor in adopting a technology³⁸, but besides the market (and its prices deriving from power relationships) the state can also decide and control, as it does with the 'Machine as Weapon.' According to Hornborg, what "ultimately keeps our machines running are global terms of trade", but in turn these seem to be ultimately imposed by military capacity. Although the power of the Machine can be legitimized by cultural elements, it is ultimately sustained by a machine of a particular kind: the Weapon.

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³⁸ "The existence of modern technology, like the lucrative trade in spices, silver, or beaver pelts, is founded on strategies of conversion between different parts of the world market, where labor and land are very differently priced" (Hornborg 2016: 21).

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