The Idea of History
in Ildefonso Cerdà's Teoría General de la Urbanización

Christian Hermansen

In interpreting Cerdà's work it is tempting to rely on a conception of history that sets clear, unambiguous parameters with which to read his work and against which one can measure his contributions. It is equally tempting to present one's subject of study as of great consequence and unique. These enticements would be satisfied by those historical constructions that chose a "break" or "paradigm shift" during the period, or immediately before, Cerdà's lifetime. Works which come to mind are A. R. Hall's The Scientific Revolution[1] which defines the task of the beginning of the nineteenth century as the application of natural sciences' principles and methods to industrial production; or Foucault's The Order of Things[2], which defines 1800 as the date of a fundamental epistemological shift from taxinomia to the study of origins, causality and history.

One could, for example, rely on Foucalt's conceptual categories to "read" Cerdà's work, very much along the lines of his analysis of the work of Ricardo, Cuvier and Bopp. This would reinforce the idea of epistemological change at a specific historical period and present Cerdà's work as pioneering the new epistemology[3].

The 1851 Great Exhibition, whose conception and organisation bears enlightening similarities to the framing of Cerdà's own work, casts light on the problems of this approach.

The Great Exhibition of the Works of Industry of all Nations, 1851

> She brought a vast design to pass
> When Europe and the scattered ends
> Of our fierce world did meet as friends
> And brethren in her halls of glass.
> Alfred Tennyson on Queen Victoria's 1851 Great Exhibition[4]

The Great Exhibition of 1851 was the first truly international world exposition, organised as a "meeting of friends", in Tennyson's words, an allusion to a worldview which placed the British Empire at the pinnacle of civilisation. A view based on two concepts: "progress" and "universal history".

The aim of the 1851 Exhibition, devised by Prince Albert, was to set mankind "… the sacred mission …

to use its God given reason to discover the laws by which the Almighty governs its creation"[5] by means of "organising all knowledge, (and) providing a taxonomy of all things".[6] "… the Exhibition of 1851" continued the Prince "is to give us a true test of the point of development at which the whole of mankind has arrived …"[7] The exhibitors and exhibits were allocated places according to their stage of development compared to the British model.

A close reading of the Great Exhibition reveals a much more complex reality, one that does not conform neatly to the single paradigm which Prince Albert wanted the Exhibition to illustrate. The 1851 Exhibition had to satisfy many requirements, and the sum of these gave it a much more disorderly character than the Prince had intended. The plans reveal that the Prince's aim only provided an overall organising principle. Interwoven to it were a series of other systems which influenced the final layout. Principal amongst these were the classification of exhibits by categories (Raw Materials, Machinery, Manufactures and Fine Arts), the practicalities of mounting more than 100,000 displays and the need to ensure box-office success.

The actual display revealed the lack of a single dominant organising system and reflected that the currency of the paradigm proposed by the Prince of Wales, based on the twin ideas of "progress" and "universal history" was, in the 1850s, under challenge.

Carl Schorske's description of European attitudes to the city in the mid-nineteenth century, comes closer to my reading of both the Great Exhibition and the one I propose to use for Cerdà's work.

The eighteenth century developed out of its philosophy of the Enlightenment the view of the city as virtue. Industrialism in the early nineteenth century brought to ascendancy an antithetical conception: the city as vice. Finally there emerged, in the context of a subjectivist culture born in the mid-nineteenth century, an intellectual attitude which placed the city beyond good and evil. No new phase destroyed its predecessor. Each lived on into the phases which succeeded it, but with its vitality sapped, its glitter tarnished.[8]

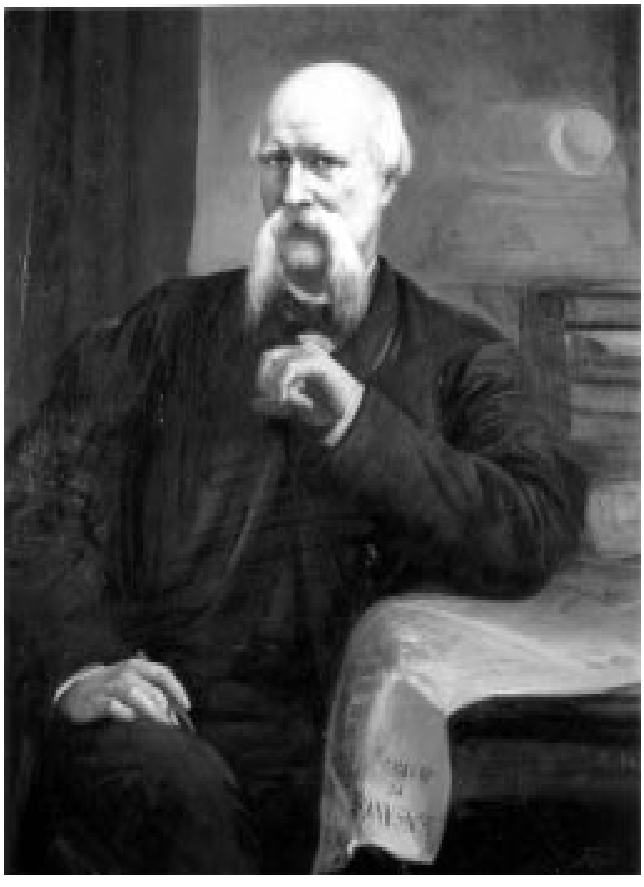
Cerdà in his times

The eighteenth and nineteenth centuries did not treat Spain well. From its pre-eminent role in the world as head of a vast empire during the sixteenth and seventeenth centuries, it would not only lose its European dominions in the eighteenth century but, at the start of the nineteenth century, it would also lose its American colonies, and to crown it all, would be invaded by a foreign power.

The 1808 Revolt of Aranjuez forced Carlos IV to abdicated in favour of his son Fernando VII, French troops occupied Madrid, Napoleon summoned Fernando to the frontier, forced him to abdicate in favour of his brother José Bonaparte, and was taken by Napoleon to Bayonne where he remained a prisoner until the Emperor put him back in the throne six years later.

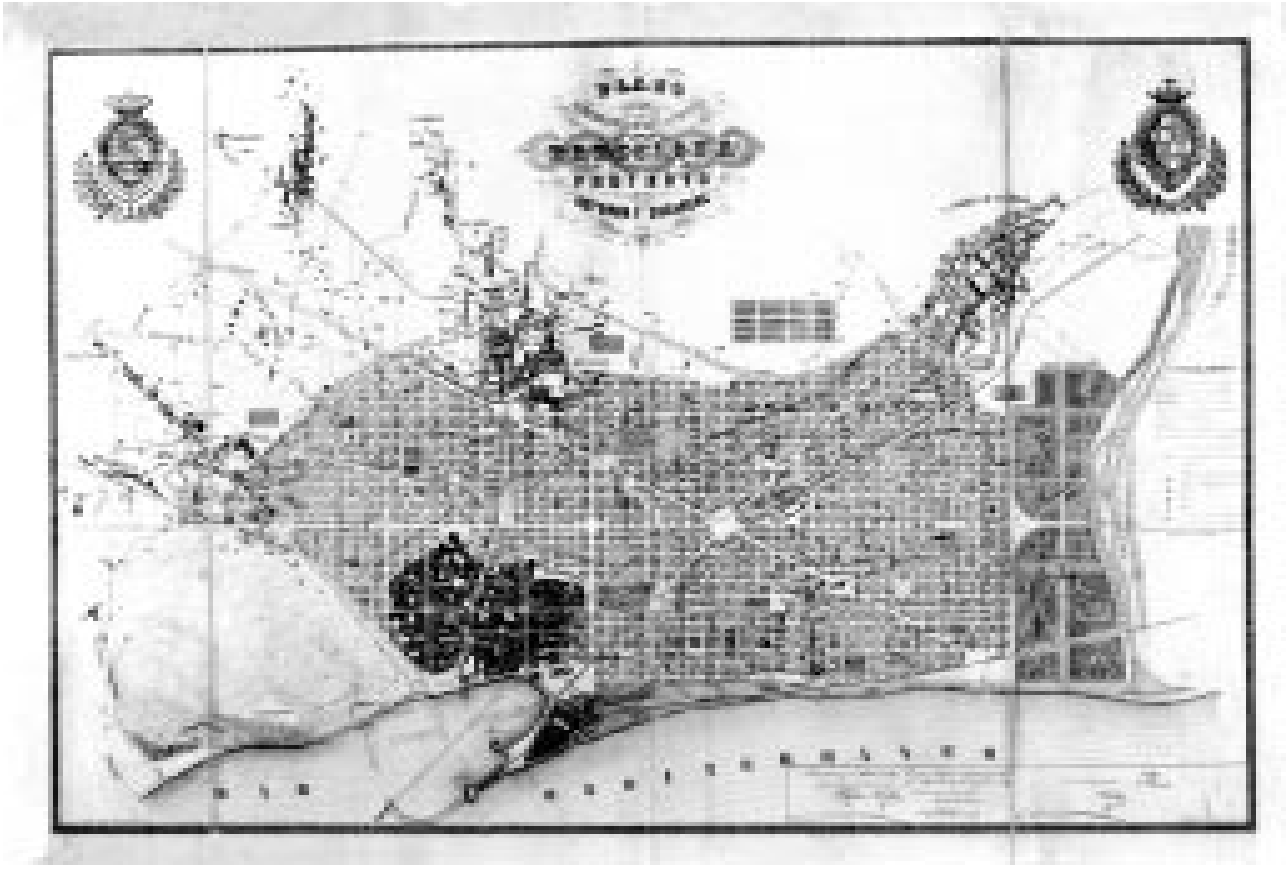
Ildefonso Cerdà was born in 1815, a year after Napoleon, threatened in the eastern European front, had to withdraw from Spain and set Fernando VII free. Backed by the Army, the Church and the Royalists, Fernando annulled the liberal constitution of 1812, arrested liberal leaders, reinstated the Inquisition and set about to clean Spain of liberal ideas. He was so thorough that a preamble to a loyal address to the King in the University of Cervera included the sentence 'Far from us the dangerous novelty of thinking'.

Ildefonso Cerdà's working life encompassed the reigns of Fernando VII, his regent wife María Cristina of Naples, their daughter Isabel II, Amadeo I, the First Republic, and the first years of the reign of Alfonso XII. In this period political power constantly oscillated between three institutions, the monarchy, the elected Cortes, and the Military. The instability the period can



be gauged by the succession of constitutions [1837, 1845, 1852, 1855 and 1876] which oscillated between supporting the principles of liberalism and their abrogation.

Ildefonso Cerdà was born in rural Catalonia, the fourth of six siblings of a long established minor aristocratic family. Being third in line to inherit the estate he had to take a profession. After incomplete studies in Latin, the Seminary, mathematics and architecture, he enrolled in 1835 in the Escuela de Ingenieros de Caminos de Madrid, a small, elite and influential institution modelled on the École Polytechnique in Paris, who inculcated in its students the virtues of rationalism and liberalism. During his studies in Madrid Cerdà joins the Milicia Nacional, voluntary troops under municipal control which were associated with liberal and radical politics. These two institutions would have a profound



effect on Cerdà, forming his attitude towards systematic thinking and social concern and providing an influential backing for his professional development.

During his career Cerdà evolves from a military road's engineer, via urbanist, social reformer and elected politician, to radical activist in the Catalonian independence movement.

By the middle of the nineteenth century Barcelona was an important industrial centre whose expansion was curtailed by the government's refusal to allow it to expand beyond its medieval walls. After a fierce and sustained campaign the Madrid government relented and the removal of the walls begun in 1854. On this year the Municipality of Barcelona commissioned Cerdà to do a land-survey of the territory out with the city walls. In 1859 Cerdà presented the Madrid government with an unsolicited project for the expansion of Barcelona, which despite the opposition from the Barcelona municipal authorities got approved and was eventually implemented.

In 1867 Cerdà published the Teoría General de la Urbanización as the theoretical justification of his proposals for the expansion of Barcelona and Madrid.

The Teoría General de la Urbanización would consist of three volumes, Volume 1 contains the theoretical justification and is divided into: Books One and Two, contain a universal history of city development, starting from man's need for shelter up to the cities of today. Book Three, is devoted to the definition of Urbe [city] and the different types of city; to the different elements that compose the city [e.g. streets, urban blocks, etc.]; and to the analytical examination of cities. Book

Four, explores the relation between the needs of each epoch and the type of city that resulted, the changes that occur as a result of the transition from one epoch to the next, and the changes that will occur in our cities as a result of the introduction of public transport, steam power and electricity.

Volume two, is devoted to backing his theoretical claims with the socio-economic and physical data he had collected in his survey of Barcelona. Most of the volume contains statistical data in tabular form.

Volume three was never published, it was either never written or the manuscript has not been found.

Towards a new science of the city

Cerdà lives at the start of the modern scientific period when the application of the methods of the natural sciences were beginning to have an immense influence on the efficiency of industrial output. However, industrialisation had also made living conditions within cities worst than at any other time in history and the desire to improve these motivated the work of social reformers, including Cerdà. What distinguishes Cerdà is that he was unique in attempting to create a science of the city in the mould of his contemporaries Comte in sociology and Marx in political economy.

> My aim, says Cerdà, is to point out, to make society understand and to touch upon, if one could put it this way, the primordial cause of the profound malady that afflicts modern societies in large cities, and that through many routes, under so many guises and through such a variety of means threatens to destroy their very existence.[9]

Finding a name for the new science was important because it had to embody his conception of the city not merely as a physical object but primarily as a social system.

> The first thing that occurred to me was the necessity to give a name to that mare-magnum of people, things, and interests of all sorts, of thousands of diverse elements. In spite of the fact that all elements appeared to function independently of the others, when I observed them closely and philosophically, I noted that they were in constant interaction with one another, often exercising a direct action over each other, and therefore forming a unity. I knew that the collection of all these elements, especially its physical parts, is called a city. My objective was not to express materiality, but rather the way in which, and the system guiding, the formation of groups and how the elements that constitute groups are organised and how they function. In other words, in addition to materiality I wished to show the organism, the life, if one could use this expression, which animates the physical parts.


TEORÍA GENERAL
DE LA
URBANIZACION,
Y APLICACION DE SUS PRINCIPIOS Y DOCTRINAS
Á LA
REFORMA Y ENSANCHE DE BARCELONA.
POR D. ILDEFONSO CERDÁ,
TOMO I.
MADRID
IMPRENTA ESPAÑOLA, TOLEDO, 24, BAJO.

No existing word used to designate agglomerations of population captured Cerdà's understanding of the city until he came across the word urbs which, because it had not been incorporated into modern European languages, was subject to re-definition.

The common etymological interpretation of urbs (meaning city or town) is that it comes from the Latin urbum, meaning the curve of the plough blade. The plough was the tool used by the Romans to define a new urban area.

Cerdà rejects this etymology arguing that in the ancient language precursor of modern European ones,

ur meant hollow or cavity and by extension dwelling. From ur we derives urs, which is a group of dwellings, and urbum, which means to open cavities in the earth, in other words to plough. You plough to grow food and you plough to make dwellings; food and shelter being the two basic constituents of human life.

Having found a name for his new science, urbanism, Cerdà set about writing a universal history of city development, with the intention of discovering the origins of the maladies that affected contemporary cities, as well as analysing contemporary cities and their urban elements.

I propose to interpret Cerdà's Teoría general de la Urbanización using three concepts that play a fundamental part in Cerdà's conception of his science of the city, progress, universal history and modernity. These concepts show, to a greater extent than Foucault's concepts of origins, causality and history, the richness, complexity and ultimately contradictions in Cerdà's formulations.

Progress

At the most basic level the belief in progress is the optimistic and confident conviction that time inexorably leads to moral and social perfection in humans. The concept of progress supported a formulation of history as the documentation of the process of humanity's route to perfection.

One of the earliest figures engaged in the ordering of history based on the idea of progress is the Marquis de Condorcet, the last of the "philoshophes". In his Esquisse d'un tableau historique des progrès de l'esprit humain[10] (1795) he brought together the ideas of Voltaire, Rousseau, Turgot, Helvétius, etc. and based on empirical observations and statistical analysis, traced the trajectory of human achievement using a de-christianised chronology of historical periods or "epochs". His historical account starts with primitive man in the state of pre-social nature and ends in a tenth "epoch" which, based on the belief in the unlimited potential for human perfectibility, offers a utopian view of the future.

Condorcet was very influential on French thought of the first half of the nineteenth century and it is very likely that Cerdà would have come across his work. There are important aspects of Condorcet's work that appear in Cerdà, such as the association between progress and historical development, the belief in rationality as manifested in the natural sciences and applied to technology, the importance of language to development (which Cerdà refers to as communication), etc.[11]

In parallel to the development of the idea of progress some social philosophers of the Enlightenment, such as Rousseau, believed that in the early phases of evolution humanity had enjoyed an idyllic "state of nature" consisting of a simple social life in which certain institutions such as private ownership, centralised government, class differences, and institutionalised religion did not exist. In "inventing" themselves out of this "state of nature", humans had rationalised social practices to the extent of generating many of contemporary society's problems.

This qualified scepticism towards progress also finds its way into Cerdà's schema when he argues that the solution to the problems of contemporary cities lies in understanding where things went wrong in the process of city development and going back in history to the point before the mistake took place.

The third factor influencing Cerdà's account of city development of is divine intervention in the form of Biblical catastrophe theory. The idea that God sends major natural disasters (e.g. floods) in order to punish humans and momentarily halt their development to allow them time to mend their ways.

> … Memphis, Babylonia, Palmyra, Nineveh, and so many others that shone in antiquity (…) were ruined because of great catastrophes. If these catastrophes arrested for some time the progress of urbanisation and civilisation they did not destroy its life-giving spirit which was reborn with new spirits in Athens and Rome.

The dominant idea in Cerdà's account of the development of the city is how rationality and progress propel history towards human perfection, but in parallel to this he incorporates the concepts of "state of nature" and "divine intervention". The three concepts co-exist in precarious balance.

Universal History

The belief that history is not merely a random succession of events but that it follows a pattern or grand design is very old, but it was during the Enlightenment that this idea was formalised in the concept of "universal history" and in the nineteenth century that it was developed into historical constructions that contained strategies for action.

Turgot wrote that "Universal history embraces the consideration of the successive progress of humanity, and the detailed causes which have contributed to it: ..."[12] Kant[13] argued for the necessity of a universal history because empirical studies of historical phenomena are in themselves insufficient to explain general historical trends as intentions in individual actions, even when grouped, cannot on their own explain the emergence collective trends in thought. The historical process, continued Kant, must have a purpose which nature or providence develops by means of rational human beings. Hegel[14] elaborated a more ambitious concept of world history in which history was understood as the rational working out of philosophical understanding itself.

These ideas influenced a series of nineteenth century theories of history in the "grand narrative" mould in which a view of society, and sometimes the call to action, was justified by means of a universal history. Marx and Engels outlined the best known of these in The Communist Manifesto (1848). They claim that "all history is the history of class struggle" and its study, from feudal to capitalist to socialist, reveals the historical laws governing social change.

More influential than Marx in the mid-nineteenth century was August Comte[15] who elaborated a universal history divided into three stages. A primitive "theological" stage that Enlightenment rationalism had replaced by the "metaphysical" stage, and which in turn was being replaced in the mid-nineteenth century by a "positivist" stage made possible by scientific advances. It is very likely that Cerdà, through his extensive French connections, would have known the work of Comte.

By the mid-nineteenth century the accelerating success of the natural sciences and their application to industrial production had given rise to a powerful combination of empiricism and logical positivism which resulted in a philosophical climate unfavourable to the concept of "universal history" within which contingency was downplayed in favour of historical necessity dictated by universal historical laws which could not be empirically verified.

Cerdà does not seem to be concerned with this contradiction. He combines the formulation of a universal history of city development which, of necessity, was highly speculative as it relied in an interpretation of human nature for the formulation of universal historical laws, with assigning a fundamental legitimising role to empirical verification. The latter attitude is confirmed by the exhaustive social survey[16] Cerdà carries out at his own expense as a support for his plan for the extension of Barcelona.

Modernity

During the nineteenth century a growing consciousness of the distinctiveness of the epoch was beginning to take hold and being articulated in the conception of the modern as a means of representing the uniqueness of the times.

Modernity as a concept, however, was used to denote radically different and conflicting phenomena. The bourgeois idea of modernity, understood as a stage in the evolution of a civilisation pursuing the enlightenment ideals of reason, science and technology in a linear path towards perfection, in other words progress, coexisted with the cultural idea of modernity[17], which was the study of those characteristics that distinguish a modern from an earlier society.

In 1859 Baudelaire sketched an idea of modernity[18] that would later form the basis for theories of modernity developed by Simmel, Kracauer and Benjamin. Baudelaire maintained that modernity was that which was new and existed exclusively and briefly in the present. The modern was thus "ephemeral, fugitive and contingent." and found "in the landscapes of the great city".

For Cerdà the main characteristic of his age was the clash of the old and a newly emerging civilisation.

> The new era, with its new elements, whose use and predominance is extended every day with new applications, will in the end bring us a new civilisation, vigorous and fertile, that will radically transform the nature and

functioning of humanity in terms of the industrial order, the economic order, the political order, and the social order, and will, in the end, take over the whole world.

What distinguishes the new era isnmovement and communications.

My first investigations regarding the requirements of the new civilisation suggested that its distinguishing characteristics were movement and communicativeness. Judging what our old cities, where everything is narrow and mean, could offer to satisfy the new requirements of movement and communicativeness, allowed me to make out new horizons which were wide and vast, a new world for science, towards which I decided to head for at any cost.

Cerdà's insight is far reaching in the sense that movement and communication, both of which are "ephemeral, fugitive and contingent", have had the profoundest effect on urban form since the mid-nineteenth century onward.

However, the very idea on which Cerdà supports his science of urbanism, universal history, depends on the permanence and constancy of man's search for perfection and coexists uneasily with the idea of cultural modernity based on constant change.

Conclusions

I have portrayed the mid-nineteenth century, the period in which Ildefonso Cerdà conceived his Teoría General de la Urbanización, as a period of profound paradigmatic contradictions. These contradictions manifested themselves most publicly in events such as the Great Exhibition of 1851, but they also appear, in a different form, in Cerdà's work.

I chose to look into three concepts, essential to the formulation of Cerdà's Teoría General de la Urbanización: Progress, Universal History and Modernity, to illustrate the nature of the Teoría General de la Urbanización, its richness and contradictions.

The idea of progress, the notion that human rationality will inexorably lead to the improvement of the human condition, is based on the permanence of the ultimate aim of history: human perfection. The idea of universal history, dependent on the notion of progress, is based on the belief that humanity's aims are constant and independent of time and place. Both "progress" "universal history" rely on the permanence of their essential principles, and thus do not sit easily with a conception of modernity built on the "fleeting, transitory and fortuitous".

Christian Hermansen
Arbetsplats: Arkitekthøgskolen, Oslo
Christian.Hermansen@aho.no

Notes

1. A.R. Hall, The Scientific Revolution, 1500–1800, Boston: The Beacon Press, 1956.
2. In the The Order of Things, Michael Foucault (London: Routledge, 1992) analysis the linguistic systems (epistemes) characteristic of certain periods of thought and argues that around 1800 there was a fundamental shift in epistemology in which the study of the world based on taxinomia was replaced with studies concentrating on origins, causality and history.
3. See my "Progress, Universal History and Modernity: Ildefonso Cerdà's Science of the City" in, (theorising) History in Architecture, Tostrup, E. and Hermansen, C. (eds.), Oslo: AHO, 2003, pp. 69–78.
4. Quoted in, Patrick Beaver, The Crystal Palace, Chichester: Phillimore, 1986, p.46.
5. Quoted in, Mari Hvattum, "A Complete and Universal Collection", Macjournal 4, 1999, pp.32–39.
6. J.A. Auerbach, The Great Exhibition of 1851, New Haven: Yale University Press, 1999, p.93.
7. ibid. p.60.
8. Carl E. Schorske, "The Idea of the City in European Thought: Voltaire to Spengler." In, O. Handlin and J. Burchard (eds.), The Historian and the City, Cambridge: MIT Press, 1963, p.96.
9. All Cerdà quotes are from his Teoría General de la Urbanización (1867), unpublished translation being completed by Christian Hermansen.
10. Condorcet, Marquis de, Esquisse d'un tableau historique des progrès de l'esprit humain,—Paris: Boivin, 1933.
11. O.H. Prior in his Introduction to the 1933 edition of Esquisse d'un tableau historique des progrès de l'esprit hu-

main (Paris: Boivin, 1933) says of Condorcet, "Mais il a bien vu l'importance de l'histoire ; il a cru surtout la connaissance de ses lois devait nous donner la clef du progrès de l'humanité : principe de grand avenir qui devait guider tous ceux qui, apres lui, on eu la vision du progrès: Cabanis, les Ideologues. Mme. De Staël, Guizot, Saint Simon, August Comte. Il a trouvé son poète en Victor Hugo." (pp. XXI–XXII).

12. Universal History of 1750, in: Oeuvres de Turgot, Paris 1844: 627.
13. Kant, I, "The Idea of a Universal History from a Cosmopolitan Point of View." (1784) in, Hans Reiss (ed.), Kant's Political Writtings, London: Cambridge UP, 1970, pp.41–53. "Whatever concept one may hold, from a metaphysical point of view, concerning the freedom of the will, certainly its appearances, which are human actions, like every other natural event, are determined by universal laws. However obscure their causes, history, which is concerned with narrating these appearances, permits us to hope that if we attend to the play of freedom of the human will in the large, we may be able to discern a regular movement in it, and that what seems complex and chaotic in the single individual may be seen from the standpoint of the human race as a whole to be a steady and progressive though slow evolution of its original endowment." In, Immanuel Kant, On History, Lewis Beck (ed.), Indianapolis : Bobbs-Merrill Educational, 1963, p.11.
14. Georg Hegel, Lectures on the Philosophy of World History (1837), Cambridge: Cambridge University Press, 1975.
15. Augusto Comte, Principios de Filosofía Positiva, Santiago: Mercurio, 1875.
16. The socio-economic survey of Barcelona takes up most of the second volume of his Teoría General de la Urbanización.
17. The distinction between these two concepts is taken from Arnfinn Bø-Rygg's "What Modernism Was", in, Hermansen, C. and Hvattum, M. (eds.),nTracing Modernity, London: Routledge, 2004.
18. Charles Baudelaire, The Painter of Modern Life: and other essays, London : Phaidon Press, 1964.
19. Baudelaire notes this contradiction when he says that the "ephemeral, fugitive and contingent" is the other half of the permanent and immutable.