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Of Trees and Genealogies

A Foucauldian Commentary on Franco Moretti

This paper discusses Franco Moretti's concept of "distant reading" in the light of Foucauldian genealogy. It confronts Moretti's evolutionary understanding of literary history — as represented in his adoption of the figure of the Darwinian tree — with Foucault's interpretation of Darwin's evolutionary theory. With reference to Foucault's transition from 'Darwinian' discourse analysis to 'Nietzschean' genealogy, the author argues that Moretti's conception of literary history could benefit from the genealogical practice of a 'meticulous' close reading in order to keep sight of hidden power relations behind literary production.

KEYWORDS

big data, darwin, digital humanities, discourse analysis, distant reading, evolutionary theory, foucault, moretti

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1. Introduction

Franco Moretti's history of literature as *Distant Reading* is a provocative — and at the same time promising — attempt to go beyond the traditional 'canon' and take into account the larger 'archive' of the thousands of books that have been published but forgotten ever since. Its intention is to bring back the forgotten 99 per cent of literature that no one knows (and cares) about any more;¹ it reanimates the literature that was lost and buried as the "great unread,"² first by the rejection of its initial readers, and later by the indifference and disinterest of modern literary history.

Methodologically speaking, *Distant Reading* not only includes skills like "sampling; statistics; work with series, titles, concordances, incipits," but also the use of "trees," as Moretti described in his article "The Slaughterhouse of Literature" about the development of the late 19th century detective story. Moretti stated that he began using the tree "merely as a sort of shorthand visualization, but after a while realized that it was more than that: it functioned like a cognitive metaphor, which made me quite literally see literary history in a new way."³ What he means by this 'new way,' is that "trees" provide a conceptual framework to picture the evolution of a specific genre, the divergence and extinction of literary forms as well as the evolvment and establishment of certain stylistic elements according to the principle of a 'survival of the fittest'.

According to Moretti, the crucial selection principle of this evolutionary mechanism in literary history is the readers' vote: whether or not they like a certain style and certain formal characteristics adopted by a novel. The concept of the "tree" is partly taken from Darwin's evolutionary theory (Fig. 1), and partly from Fernand Braudel's conception of the *longue durée*; in fact, it was especially Braudel's thought about the 'evolution' of the English economy during the Industrial Revolution that inspired Moretti to picture "the development of the European novel as an evolutionary bush."⁴ Furthermore, Braudel also informed the theory of *Distant Reading* with his quantitative approach to the study of history, which introduced entirely new material, practices, and fields of investigation like "a price curve, a demographic progression, the movement of wages, the variations in interest rates, the study (as yet more dreamed of than achieved) of productivity, a rigorous analysis of money supply," as Braudel described in his famous essay "History and the Social Sciences: The Longue Durée," published in 1958.⁵

Author's note: Earlier versions of this paper were presented at the *foucaultblog's* "Distant Reading und Diskursanalyse" workshop in Vienna (November 14, 2015) and at the "Distant Reading" workshop with Franco Moretti organized by the *Zentrum Geschichte des Wissens* (ZGW) in Zurich (March 14, 2016). I thank all the participants for fruitful discussions and insightful comments.

¹ Franco Moretti: *The Slaughterhouse of Literature*, in: *Distant Reading*, London/New York: Verso 2013, pp. 63–89, here pp. 65–66 (first published in: *Modern Language Quarterly*, 61/1 (2000), pp. 207–227).

² Margaret Cohen: *The Sentimental Education of the Novel*, Princeton: Princeton University Press 1999, p. 23.

³ Moretti: *The Slaughterhouse of Literature*, here p. 66 and p. 76.

⁴ Franco Moretti: *Modern European Literature: A Geographical Sketch*, in: *Distant Reading*, London/New York: Verso 2013, pp. 1–42, here pp. 18–19 (first published in: *New Left Review* 206 (1994), pp. 86–109).

⁵ Fernand Braudel: *History and the Social Sciences: The Longue Durée*, trans. Sarah Matthews, in: *On History*, Chicago: University of Chicago Press 1982, pp. 25–54, here p. 29 (first published as: *Histoire et Sciences sociales: La longue durée*, in: *Annales. Economies, Sociétés, Civilisations* 13.4 (1958), pp. 725–753).

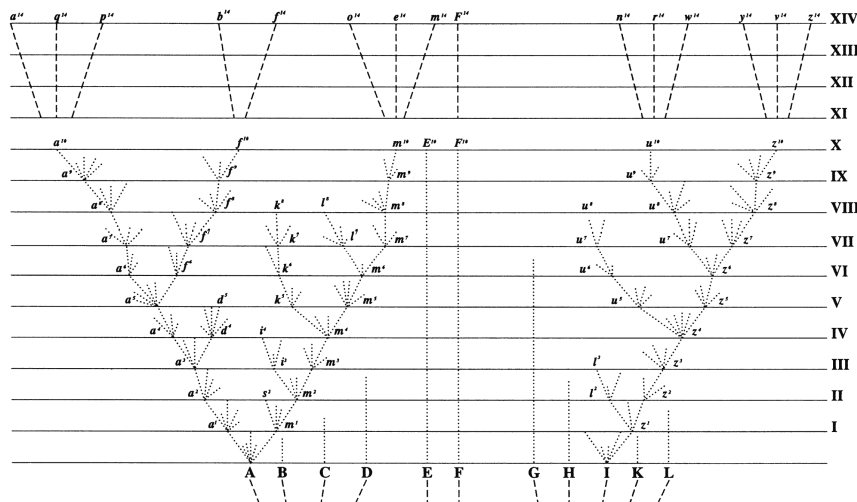


Fig. 1: Darwin's Tree of Life as represented in "On the Origin of Species" (1859). Notably, this is the only illustration in the whole book. Moretti uses this image in his paper on "Evolution, World Systems, Weltliteratur" (2005) and in his book *Graphs, Maps, Trees* (2005) to visualize the diversification of literary forms on the horizontal axis and history on the vertical axis.

This was long before computers and *big data* made their way into the humanities departments and induced them to 'go digital';⁶ however, it was at a moment of time when the massive collection of data and the quantification of science spread among a variety of disciplines. Braudel, for example, names Claude Lévi-Strauss' structural anthropology, linguistics, and economics, as well as the complex and interdisciplinary field of "area studies"⁷ that emerged from the Cold War social sciences. It seems that Braudel and his fellows of the French Annales School weren't alone with their obsession with data and quantitative methods.

In fact, their large-scale approach of a *histoire totale* that aimed at understanding history from a different — and potentially more distant — perspective even found some resonance in the works of Michel Foucault. In the introduction to his 1969 book *Archaeology of Knowledge*, Foucault not only directly referred to the Annales School,⁸ but also sympathized with quantitative tools like sampling, statistics, series, and the analysis of frequency that later would become *Distant Reading's* weapons of choice. And despite the fact that Foucault's 'new history,' as he called his archaeology, turned out to implement quantification 'by other means' — rather reading everything than nothing (as Moretti postulated so provocatively) — it might be fruitful to take a Foucauldian look at *Distant Reading*.

This seems promising for two reasons: on the one hand, because both, Foucault and Moretti, linked their works to the Annales School; on the other hand, because Foucault shared Moretti's preference for Darwinian trees and even declared that it should be "one of" the *Archaeology of*

⁶ For an introduction to the vast field of Digital Humanities, see for instance David M. Berry (ed.): *Understanding Digital Humanities*, Basingstoke/New York: Palgrave Macmillan 2012.

⁷ See for example Matthew Farish: *The Contours of America's Cold War*, Minneapolis/London: University of Minnesota Press 2010; see also Jason Pribilsky: The Will to Enclose: Foucault's Archive in the Era of Cold War Big Data, in: *Le foualdien*, 2/1 (2016), DOI: 10.16995/lefou.11.

⁸ Michel Foucault: *The Archaeology of Knowledge and the Discourse on Language*, trans. A.M. Sheridan Smith, New York: Pantheon Books 1972, p. 3 (first published as *L'Archéologie du savoir*, Paris: Gallimard 1969).

Knowledge's "principal themes" to "constitute the tree of derivation of a discourse" [*L'archéologie peut ainsi – et c'est là un de ses thèmes principaux – constituer l'arbre de dérivation d'un discours*].⁹ Focusing on the latter point of contact, I will take the mutual affinity for "trees" as a trace to find my way through the works of Foucault and Moretti.

I will, firstly, reconsider Foucault's discourse-analytic notion of this theoretical tool as well as its ambivalent reevaluation under the banner of his genealogical critique of power during the 1970s. During these years, Foucault more and more replaced the image of the evolutionary tree by that of the dynastic one. This shift followed his steady transition from the potentially more synchronic and structural discourse analysis to the rather diachronic perspective of genealogy, which puts greater emphasis on the notion of power struggles. Secondly, I attempt to use this Foucauldian perspective of 'power/knowledge' as a point of departure to comment on the "trees" of *Distant Reading*. Actually, this idea of confronting the method of *Distant Reading* with Foucault's genealogical critique of power was somehow initiated by Moretti himself, who repeatedly underlined that his approach was not only intended to provide the ground for "a more rational literary history,"¹⁰ but also the framework for a profound social – and maybe even Marxist – critique.

2. From Trees to Tunnels: Foucault between Discourse Analysis and Genealogy

Identifying the construction of trees as one of discourse analysis' principal tasks later in the book, Foucault declared in the introduction to the *Archeology of Knowledge* that his "new history" would include "the building-up of coherent and homogeneous *corpora* of documents (open or closed, exhausted or inexhaustible *corpora*), the establishment of a principle of choice, [...] a sampling method as in statistics" as well as "the definition of the level of analysis and of relevant elements [...], with their grammatical rules and semantic fields that they indicate," and eventually "the specification of a method of analysis (the quantitative treatment of data, the breaking-down of the material according to a number of assignable features whose correlations are then studied, interpretative decipherment, analysis of frequency and distribution)." Inspired by the *Annales* historians' interest in "models of economic growth, quantitative analysis of market movements, accounts of demographic expansion and contraction, the study of climate and long-term changes, the fixing of sociological constants, the description of technological adjustments and of their spread and continuity," Foucault aims to introduce these approaches of social history to the *Archeology of Knowledge's* study of knowledge systems, their emergence, formatting, and stabilization in society.¹¹

⁹ Foucault: *The Archaeology of Knowledge*, p. 147 (*L'Archéologie du savoir*, p. 192).

¹⁰ Franco Moretti: *Graphs, Maps, Trees: Abstract Models for a Literary History*, London/New York: Verso 2005, p. 4; for a collection of critical responses to Moretti's work, see Jonathan Goodwin and John Holbo (eds.): *Reading Graphs, Maps, Trees: Critical responses to Franco Moretti*, Anderson, SC: Parlor Press 2011.

¹¹ Foucault: *The Archaeology of Knowledge*, pp. 10–11 and p. 3.

In order to describe how knowledge evolves, gains validity, and spreads within a certain discursive environment, Foucault proposes the evolutionary structure of the "tree".¹² Arguing that knowledge systems are grounded on "statements" [énoncés] and discursive rules that organize and regulate them, he explains that "certain groups of statements put these rules into operation in their most general and most widely applicable form; using them as a starting-point, one can see how other objects, other concepts, other enunciative modalities, or other strategic choices may be formed on the basis of rules that are less general and whose domain of application is more specified." And he continues, "one can thus describe a tree of enunciative *derivation*: at its base are the statements that put into operation rules of formation in their most extended form; at its summit, and after a number of branchings, are the statements that put into operation the same regularity, but one more delicately articulated, more clearly delimited and localized in its extension."¹³ The consequences of this interpretation are twofold: on the one hand, it pictures the evolution of a discursive formation as a contingent and natural progression; on the other hand, it creates the idea of a long chain of continuities in this process, which allows to interrelate all elements and "statements" of the tree (Fig. 2).

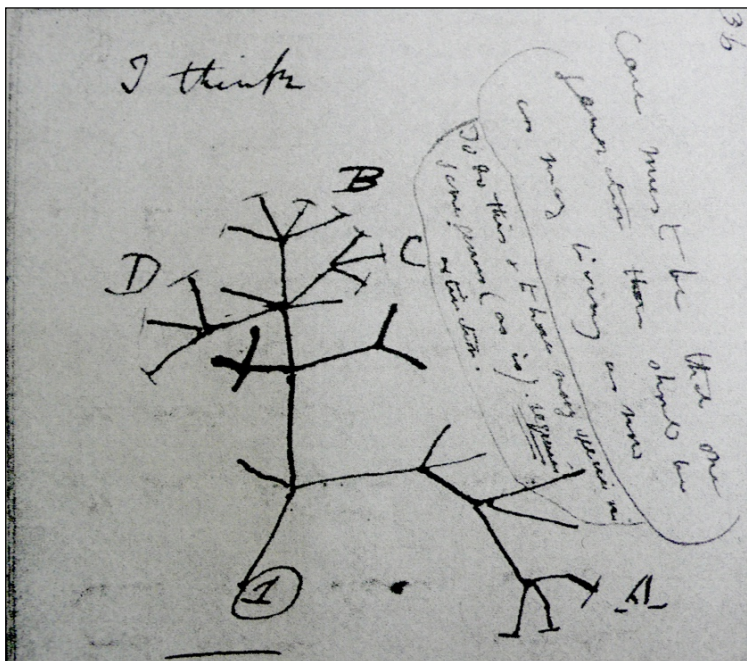


Fig. 2: The famous 'I think' sketch from Charles Darwin's famous red notebook 'B' (mid 1837, p. 36). This drawing is rougher and more irregular than the final version shown in "On the Origin of Species" (1859). Historian Philipp Sarasin uses this image in his book *Darwin und Foucault* (2009, p. 38) to describe Foucault's conception of history and its roots in Darwinian evolutionary theory.

However, this notion of the evolutionary tree underwent revision in Foucault's later thought. In his famous 1978–79 lectures on *The Birth of Biopolitics* at the Collège de France, he strongly opposed this idea when giving his analysis of the German neo-liberal state during the governments of Willy Brandt and Helmut Schmidt. Creating "a sort of genetic continuity or evolutionary impli-

¹² For a detailed study of Darwinian thought in Foucault's work, see Philipp Sarasin: *Darwin und Foucault: Genealogie und Geschichte im Zeitalter der Biologie*, Frankfurt/M: Suhrkamp 2009.

¹³ Foucault: *The Archaeology of Knowledge*, p. 147.

cation between different forms of the state," Foucault noticed, might lead to highly troublesome conclusions that would interpret "the administrative state, the welfare state, the bureaucratic state, the fascist state, and the totalitarian state" as being only "successive branches of one and the same great tree of state control in its continuous and unified expansion. [... And] as soon as we accept the existence of this continuity or genetic kinship between different forms of the state, and as soon as we attribute a constant evolutionary dynamism to the state", he further argues, "it then becomes possible not only to use different analyses to support each other, but also to refer them back to each other and so deprive them of their specificity."

Putting forward "the thesis that the welfare state has neither the same form, of course, nor it seems to me, the same root or origin as the totalitarian state, as the Nazi, fascist, or Stalinist state," Foucault rejects the idea of hidden path dependencies between liberalism and totalitarianism, which was quite popular among the left intellectuals of his generation (and apparently still is today).¹⁴ Although this rejection of evolutionary "trees" and the "continuity or genetic kinship" they imply is not directly related to the analysis of discursive systems but to the study of the modern state, it seems that Foucault became increasingly uneasy with this Darwinian conception.¹⁵

But what exactly was it that induced Foucault to reevaluate the concept of the evolutionary "tree"? And how does this shift relate to his adaptation of Nietzschean genealogy during the 1970s? Did Foucault replace the idea of the Darwinian tree with the dynastic ancestral chart, and how do these concepts differ? In "Nietzsche, Genealogy, History," Foucault writes that "genealogy does not resemble the evolution of a species [...]. On the contrary, to follow the complex course of descent is to maintain passing events in their proper dispersion; it is to identify the accidents, the minute deviations — or conversely, the complete reversals — the errors, the false appraisals, and the faulty calculations that gave birth to those things that continue to exist and have values for us"; instead of searching for the "exclusive genetic characteristics of an individual, a sentiment, or an idea," Foucault reminds his readers that the genealogical approach "seeks for the subtle, singular, and subindividual marks that might possibly intersect in them to form a network that is difficult to unravel." These networks of hidden data, forgotten relationships, and ancestry run underground, forcing the historian to "excavat[e] the depths" and help "these elements to escape from a labyrinth where no truth had ever detained them."¹⁶

Dropping the notion of the "tree" in favor of the more complex structure of a "network" or a "labyrinth" is part of what led Foucault from discourse analysis to genealogy, or, as he himself

¹⁴ Michel Foucault: *The Birth of Biopolitics: Lectures at the Collège de France, 1978–79*, Basingstoke/New York: Palgrave Macmillan 2008, p. 187 and p. 190 (first published as *Naissance de la Biopolitique: Cours au Collège de France, 1978–1979*, Paris: Éditions de Seuil/Gallimard 2004). For a Foucauldian critique of the construction of hidden path dependencies between totalitarianism and liberalism in the thought of Giorgio Agamben, see Colin Koopman: Two Uses of Michel Foucault in Political Theory: Concepts and Methods in Giorgio Agamben and Ian Hacking, in: *Constellations*, 22/4 (2015), pp. 571–585, esp. p. 575.

¹⁵ On Foucault's ambivalent use of Darwin's trees, see Sarasin: *Darwin und Foucault*, p. 242.

¹⁶ Michel Foucault: Nietzsche, Genealogy, History, in: Paul Rabinow (ed.): *The Foucault Reader*, New York: Pantheon Books 1984, pp. 76–100, here p. 81 and p. 80 (first published as: Nietzsche, la généalogie, l'histoire, in: *Hommage à Jean Hyppolite*, Paris: Presses Universitaires de France 1971, pp. 145–72).

commented in 1973, from "archaeology" to a "dynastics of knowledge."¹⁷ This shift was about revealing and subversively delegitimizing power relations. Sticking to Nietzsche, who in the preface to the second edition of his book *Morgenröthe* identified himself as "a 'subterrestrial' at work, digging, mining, undermining" [*einen 'Unterirdischen' an der Arbeit, einen Bohrenden, Grabenden, Untergrabenden*], Foucault accordingly associated his own genealogical work with "underground tunnels" [*galeries de mine*].¹⁸ But the notion of the network, the labyrinth, or the underground tunnel not only introduced a new form of representing knowledge to Foucault's thought, it also seemed to implicate new practices, which challenged the more distant perspective of his discourse-analytical period.

In "Nietzsche, Genealogy, History," for example, he wrote, "Genealogy is gray, meticulous, and patiently documentary. It operates on a field of entangled and confused parchments, on documents that have been scratched over and recopied many times."¹⁹ As indicated in this passage, Foucault's transition from the great trees of evolutionary theory (that vaguely echo Diderot's and D'Alambert's *Encyclopédie*) to the diggings of a Nietzschean 'underground miner' was closely related to a revision of his research practice. However, the meticulously "mining" in genealogy's gray underground tunnels and its patient sifting of documents is not only intended to set an example of rigorous scholarship; it was also meant as a political practice of "undermining" power and providing effective social critique.

Perhaps it is not surprising that the metaphor of "mining" reappears in the digital age, coming back in the shape of a "data mining" technology.²⁰ Although this practice is far away from the meticulous historical inquires of Foucault's patient genealogy and instead consists of algorithms, large-scale computation, and distant analysis, "data mining" is equally more than a mere practice of knowledge discovery. Like genealogy, it is steeped in political implications that range from the hacker community's subversive criticism (but also usage) to the rigorous espionage and surveillance practices of intelligence agencies. It remains an open question how Digital Humanities will position themselves with regard to these developments.

3. Back to Close Reading? Moretti's Reverse Engineering

Foucault and Moretti not only share a mutual interest in "trees", they also both wrote about the bourgeois society. In his 1976 book *The Will to Knowledge* (whose significant title is usually mistranslated into English as *The History of Sexuality, Volume One: An Introduction*), Foucault's first

¹⁷ Michel Foucault: De l'archéologie à la dynastique, in: *Dits et Écrits II, 1970–1975*, Paris: Gallimard 1994, pp. 405–416 (originally published as: *Archeologie Kara dynastique* he, in: *Umi* (1973), pp. 182–206).

¹⁸ Friedrich Nietzsche: Vorrede, in: *KS4* 3, pp. 11–12, quoted in: Stephan Günzel: 'Unterirdische' Radikalaufklärung von Kant zu Nietzsche. Ein Beitrag zur philosophischen Archäologie und ihrer Epistemologie, in: Renate Reschke (ed.): *Nietzsche. Radikalaufklärer oder radikaler Gegenauflärer?* (= Nietzscheforschung Sonderband 2), Berlin: Akademie-Verlag 2004, pp. 287–296, here p. 287–288. See also Michel Foucault: Sur la sellette. Entretien avec J.-L. Ezine, in: *Les Nouvelles littéraires* 2477 (17–23 March 1975), p. 3.

¹⁹ Foucault: Nietzsche, Genealogy, History, p. 76.

²⁰ For a cultural history of data mining, see Roberto Simanowski: *Data Love*, Berlin: Matthes & Seitz 2014.

chapter is entitled "We 'Other Victorians',"²¹ and he there argues that the Western society of his time still relies on the value systems of the bourgeois and Victorian age. To study Victorian sexuality, for Foucault was not solely a historical project; it was also (and maybe first and foremost) a genealogical critique of the social norms of 1970s Europe, thus a 'history of the present' as he once described it.²²

Although Moretti's recent study *The Bourgeois: Between History and Literature* follows other pathways and focuses more on work ethics, ideals of comfort, continuity, and productivity as well as the bourgeois desire for rationalization, *Realpolitik*, and distrust in science, it also leads the way to a 'history of the present.' Commenting on the dedication of his book at the very end of the introduction, Moretti states: "I too am a history professor; but I like to think that disciplined lifelessness may not be all I will be capable of. In this sense, inscribing *The Bourgeois* to Perry Anderson and Paolo Flores d'Arcais signals more than my friendship and admiration towards them; it expresses the hope that, one day, I will learn from them to use the intelligence of the past for the critique of the present. This book does not live up to that hope. But the next one may."²³ Social critique was always of concern to Moretti although it may have never been as clearly articulated as in his work on the bourgeois.

In the collection of his *Distant Reading* articles, which are heavily inspired by Darwin's evolutionary theory and Immanuel Wallerstein's world-system theory, he frequently struggles with the question of how quantified analysis may include a powerful social critique. At one point, he even concludes that "there is one question that I find insoluble: evolution *has no equivalent for the idea of social conflict*. [...] Nor is this a problem of evolution only; from what I understand complexity and network theory have exactly the same blind spot – which, clearly, no theory of culture and society can allow."²⁴ And it was precisely this potential "blind spot" that caused Moretti's critics to comment on his Darwinian large-scale approach to literary history. Roberto Schwarz, for example, asked: "was this kind of literary history still trying to be (also) a form of social critique — or had it entirely abandoned that project?"; and Christopher Prendergast even accused Moretti's evolutionary trees of being at risk of inscribing a "winner-takes-it-all attitude" into literary history that "is typical of social Darwinism."²⁵

It is not my intention to further expand on these issues or defend Franco Moretti against the criticisms and accusations. However, it should be noted that the objections articulated by

²¹ Michel Foucault: *The History of Sexuality, Volume 1: An Introduction*, trans. Robert Hurley, New York: Pantheon Books 1978, pp. 1–14 (originally published as *La Volonté de savoir*, Paris: Gallimard 1976).

²² On the conception of Foucault's 'history of the present', see for example David Garland: What is a "history of the present"? On Foucault's genealogies and their critical preconditions, in: *Punishment & Society*, 16/4 (2014), pp. 365–384; Michael S. Roth: Foucault's "History of the Present", in: *History and Theory*, 20/1 (1981), pp. 32–46.

²³ Franco Moretti: *The Bourgeois: Between History and Literature*, London/New York: Verso 2013, pp. 23–24.

²⁴ Franco Moretti: Evolution, World Systems, 'Weltliteratur', in: *Distant Reading*, pp. 121–135, here p. 122 (first published as: World-Systems Analysis, Evolutionary Theory, Weltliteratur, in: *Review*, 28.3 (2005), pp. 217–228).

²⁵ Franco Moretti: The End of the Beginning: A Reply to Christopher Prendergast, in: *Distant Reading*, pp. 137–158, here p. 155 and p. 139 (first published in: *New Left Review*, 41 (2006), pp. 71–86); for the critique by Prendergast, see Christopher Prendergast: Evolution and Literary History, in: *New Left Review*, 34/2 (2005), pp. 40–62.

Schwarz and Prendergast criticized the evolutionary structure of the "tree" of being either completely apolitical and therefore inappropriate for a vital social critique, or, on the contrary, representing an all too dangerous political tool that might introduce social Darwinist thought into literary history.

What these criticisms seem to miss is the subversive gesture behind Moretti's attempt to represent literary history in the form of Darwinian trees: by making visible all the forgotten books that have been lost on the countless dead branches of literary history, and by broadening our perspective from canon to archive, Moretti challenges the elite culture of the literary field by confronting its well-organized and strongly-defended gated community with the mass culture of excluded books, thereby giving them a 'voice'. Picturing literary history as an evolutionary tree allows to describe the pathways, historical formations, and contingencies that decided which books we know and which ones we have never heard of.

However, there is a "blind spot" in the conception of the tree that Moretti detected himself: the evolutionary model fails to depict the hidden power structures in the process of canon-making by envisioning the cultural selection as exclusively regulated by the economic laws of the literary market. Consisting of publishing houses, bookstores, literary magazines, and catalogues as well as the amorphous collective of the readers, this market imposes a savage sentence on the literary field — dividing it into bestsellers and leftovers. According to Moretti, this verdict that constitutes the evolutionary mechanism is executed by the readers' almost Hamlet-like decision 'to buy or not to buy;' yet not knowing what they like, the readers unconsciously perform this task as "blind canon-makers," who produce the market's equilibrium of supply and demand.²⁶ However harsh the result of this canon-making process is, in the end the readers' choice is conceptualized as being a democratic — firm but fair — process.

Although Moretti attempts to counter-attack this 'verdict of the market' and its reiteration by modern literary history departments, it seems that he might have taken the analogy to the Darwinian tree a little too seriously, understanding the literary market's mechanism of liberal capitalism as being just as universal and natural as the selection principle that organizes biological evolution. Although the market conception proves valid and inspiring with regard to Moretti's own field of experimentation, which is the evolution of the nineteenth-century detective novel, it is not self-evident that it would also work for other genres, time frames, or historical contexts.

Let me give a brief example: as numerous studies on the development of the literary field in post-war Western Europe have shown in recent years, it was not mainly the free market of liberal capitalism that decided which books (and potentially also which literary forms) would be read and discussed, and which ones would disappear on the dead-end streets of oblivion, but rather the hidden mechanisms of a protective and carefully planned program of funding by governments and intelligence agencies (as performed, for example, by the CIA's Congress for

²⁶ For this paragraph, see Moretti: *The Slaughterhouse of Literature*, pp. 67–71.

Cultural Freedom) — a strategy that was part of America's cultural Cold War policy.²⁷ The picture of the tree does not fit to capture these practices of interventionism that were performed in secrecy in the name of liberal democracy and under the cloak of the free market. But maybe Foucault's genealogical perspective with its close focus on local power structures and historically specific forms of 'governmentality' could provide a framework to describe and criticize these mechanisms that lay underneath the surface of the liberal market's logic of supply and demand.

In his study on *The Bourgeois*, Moretti largely evaded the concept of the "tree", but introduced a new conception that appears to adopt the genealogical approach in an almost Foucauldian way. In order to analyze the bourgeois literary style, he refers to an industrial and technological practice called "reverse engineering". Used in various technological contexts — like electronics, software and computer industry — this process disassembles an engineered product to its component parts, tracing back its construction plan to understand its structure and functioning. Adapting this procedure to literary history and transforming it into a genealogical practice, Moretti writes that "we must do some 'reverse engineering'; reverse because the solution is given, and we proceed backwards from that to the problem"; and if this "reverse engineering" is done properly, he argues, "then formal analysis may unlock — in principle, if not always in practice — a dimension of the past that would otherwise remain hidden."²⁸

Going from the solution to the problem is also one of the key motivations behind Foucault's genealogical approach to the study of history, which strongly asks to identify and dismantle the "forms of problematization" that constitute the discourse.²⁹ Uncovering the problems and social struggles to solve them seems to me of great relevance to articulate a vital political critique of our present. Moretti's *The Bourgeois* is a good example of how to explore and criticize such historical problematizations in the field of literature by "reverse engineering" and unveiling their stylistic and formal solutions. Focusing on specific historical conditions and without applying the large-scale explanatory models of world-systems theory and evolutionary biology, the study draws a nuanced genealogical picture that perhaps also provides a powerful tool for a social critique that Moretti aims at. If this practice demands (or maybe even implies) a closer perspective than suggested and provided by *Distant Reading* is certainly worth discussing.

²⁷ See for example Andrew N. Rubin: *Archives of Authority: Empire, Culture, and the Cold War*, Princeton/Oxford: Princeton University Press 2012; Frances Stonor Saunders: *Who Paid the Piper? The CIA and the Cultural Cold War*, London: Granta 1999.

²⁸ Moretti: *The Bourgeois*, p. 80 and p. 14; on the practice of "reverse engineering" in the computer sciences, see for example Eldad Eilam: *Reversing: Secrets of Reverse Engineering*, Indianapolis: Wiley Publishing 2005.

²⁹ See Michel Foucault: *The Use of Pleasure* (= *The History of Sexuality*, vol. 2), trans. Robert Hurley, New York: Vintage Books 1986, pp. 14–23 (originally published as *L'Usage des plaisirs*, Paris: Gallimard 1984). On Foucault's genealogy and the concept of problematization, see also Colin Koopman: *Genealogy as Critique: Foucault and the Problems of Modernity*, Bloomington: Indiana University Press 2013.