



Back to the Future?

History, Material Culture and New Materialism

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Abstract

The study of history currently witnesses two markedly different material turns. Some historians are using material artefacts as alternatives to textual sources. Others draw on ‘new materialism’, a new tradition in thought that originated in the field of gender studies. Both groups are trying to move beyond the cultural turn, which has dominated the study of history since the 1980s. However, the first group merely extends the programme of the cultural turn into new domains without rejecting its methods or epistemological foundations. The latter group, on the other hand, provides a new cultural theory. This article demonstrates that the ‘new’ in new materialism is not so much an increased engagement with the material world, but rather a new *conceptualization* of developing theory and reading texts, which cuts through established dichotomies between matter and meaning or culture and the social. In doing so, a new materialist history can solve some of the problems associated with the cultural turn and the turn to material artefacts.

Keywords: cultural turn, material culture studies, material turn, new materialism

Introduction

The cultural turn revolutionized many disciplines in the humanities and the social sciences.¹ In the case of history, after heated debates between converts and adversaries in the 1980s, it dramatically changed the way

historians look at the past, and became the dominant form of historiography in the 1990s. To explain the cultural turn's success, one needs to look at the paradigm that preceded it.² In the 1970s, much historical work, drawing on quantitative approaches from the social sciences, focused on impersonal social structures and long-term processes of social change. The reorientation towards culture helped historians to bring real people and their everyday experiences back into the writing about the past. In order to do so, historians exchanged quantitative methods for approaches from literary theory that stressed the constitutive qualities of discourse. The so-called linguistic turn showed historians the power of metaphor, made them read past cultures as texts, and ultimately drew the attention to subjective elements in historical writing itself. This, in turn, dramatically challenged the possibility of objective inquiry.

The cultural turn, then, was both a blessing and a curse. The cultural turn greatly expanded the scope of historiography to include new topics such as everyday life, the construction of gender and the history of the body, but also undermined the study of history's very foundations. Indeed, if texts do not simply mirror reality, as literary theorists argued, then, some scholars concluded the historian's texts are also fictitious.³ To many historians this was difficult to swallow. Thus, at the end of the 1990s, historians started to distance themselves from the cultural turn.⁴ Discontent with the one-sided focus on textual critique, the pitfalls of relativism, and the prevailing preference of culture in favour of other analytical categories (e.g., the social), they looked for ways to move 'beyond' the cultural turn. One of these ways is to leave texts and discourses behind and turn to a more robust subject of research: matter and the material world.

By reviewing some recent works that focus on materiality, I argue that there are two markedly different material 'turns' in historiography. On the one hand, there is an increasing interest in material culture among historians who are looking for alternatives to textual sources. On the other hand, some historians, drawing on recent theories from the field of gender studies, are exploring a 'new materialism' that tries to break with the very foundations of (post)modern thought. While the efforts of the first group can be seen as an *extension* of the new cultural history's programme, the latter provides a *new* cultural theory that historians only very recently have started to explore. I will demonstrate that the 'new' in this new materialism is not so much an increased

engagement with the material world, but rather a new conceptualization of developing theory and reading texts, which cuts through established dichotomies between nature and culture, matter and meaning. These insights can help historians overcome some of the problems associated with the cultural turn. They also reshape the cultural historian's ideas about objects and material culture.

The Material Turn in Cultural History

In a recent article, Harvey Green detects a 'material turn' in cultural history.⁵ This turn, according to Green, consists of an increasing interest among historians in material culture, and draws from material culture studies, an interdisciplinary research programme rooted in archaeology, art history and anthropology. Although individual historians, especially medievalists and others closely tied to archaeology, have always been interested in material artefacts, coordinated efforts to establish a material culture research programme only started in the late 1970s.⁶ While proponents of material culture studies organized international conferences, and published in their own *Journal of Material Culture*, the majority of historians ignored material objects in favour of written sources. 'The scholarship nobody knows' only gained recognition when socially engaged historians started to search for traces of marginalized people whose voices had escaped the official historical records in the archives.⁷ At first, Marxist historians with a keen eye for material conditions in the past tried to reconstruct the history of lower classes. Feminist and postcolonial scholars then turned to the lives of women and colonial 'others'.⁸ Peasants, workers, women and slaves, it turned out, had left all kinds of everyday objects. As a result, the work of material culture scholars, who specialized in material culture of the everyday, suddenly became conventional. This development culminated in what Green called a 'material turn' in cultural history.

What does this material turn look like? Material culture studies focuses on *stuff*, whose value to historians is reflected in a classical definition by one of the founders of the field: 'objects made or modified by humans, consciously or unconsciously, directly or indirectly, reflect the belief patterns of individuals who made, commissioned, purchased, or used them, and by extension, the belief patterns of the larger society of

which they are a part'.⁹ In *History and Material Culture* (2009), Karen Harvey and contributors demonstrate the potential of this alternative source.¹⁰ Case studies, ranging from furniture and clothes to buildings and landscapes, offer a passionate plea in favour of 'artefacts as evidence', a type of source that easily measures up to written material if one knows how to handle it. After all, objects, like texts, carry meaning. To understand them, Harvey suggests, historians need to 'read'.

Take, for example, gardens. According to Marina Moskowitz, one of the contributors to Harvey's book, gardens or 'domestic landscapes', often modified by ordinary people over longer periods of time, are mirrors of political, economic and cultural ideas.¹¹ Following Harvey, Moskowitz shows how these landscapes, like other material artefacts, can be read as texts. By carefully monitoring human alterations, such as fences, pathways and buildings, domestic landscapes reveal choices, and underlying ideas and political agendas, of the people who designed and used them. At the end of the nineteenth century, for instance, planners in the United States divided freshly colonized landscapes into zones for different purposes. They reserved the best parcels for structures that supported family life, such as single-family houses, churches, and schools. Thus, as Moskowitz demonstrates, the dominant idea at the time of the nuclear family as core unit of society is reflected in the landscape.

Interestingly, the case studies in *History and Material Culture* only illustrate how material culture can be used by historians to reconstruct the *mental* world of *people*. The contributors heavily draw on interpretative tools associated with the new cultural history. They apply its idea of 'reading culture as a text' to material culture. Objects as 'texts' provide information about humans; their materiality, however, remains undiscussed. Artefacts are cultural stuff, that is, passive transporters of human ideas. The way people handle them creates meaning. In other words: while humans are seen as agents who actively move in, and give meaning to, the passive world around them, objects do not carry any significance of their own. 'New materialism' provides an entirely different notion of matter.

The 'New' in New Materialism

Unlike the material turn in cultural history, new materialism does not continue the programme of the cultural turn. Rather, it offers an

alternative to the epistemological and metaphysical foundations that informed the cultural turn and (post)modern thought in general. Thus, while the material turn in cultural history is characterized by an increased engagement with objects as ‘new’ historical sources, new materialism is a new way of developing theory. Paradoxically, for a movement that rejects the *episteme* of the cultural turn, this ‘new metaphysics’ is, like the analytical toolkit of the new cultural history, based on the metaphor of ‘reading’. New materialist readings, however, result in surprising and challenging conceptualizations of matter and the agency of objects.

New materialism originated in the field of Gender Studies where Rosi Braidotti coined the term in the early 1990s.¹² Drawing from the philosophy of Gilles Deleuze, Henri Bergson and Spinoza – thinkers who attempted to undo the dualisms that have constituted Western thought since Descartes – Braidotti and other feminist scholars like Donna Haraway, Karen Barad and Vicki Kirby started to critically question the cultural turn’s one-sided focus on culture. The movement recently gained prominence with the publication of three programmatic companions that explicate its aims and methods.¹³ The volumes make clear that new materialism is, first and foremost, a commentary on, or a critical rethinking of, the cultural turn. Their authors are keen to show, however, that new materialism does not simply aim to reject the work of a previous generation.¹⁴ Rather, they want to draw it into conversation with earlier paradigms as well as with ideas from the natural sciences. In *New Materialism: Interviews & Cartographies* (2012), for instance, Rick Dolphijn and Iris van der Tuin explain that new materialism is ‘transversal’ rather than ‘dialectic’. Previous traditions in thought, they argue, have always positioned themselves dialectically against their predecessors. In doing so, they created negative relations between terms by structuring theoretical approaches and paradigms as dual opposites (e.g., new cultural history versus social history, post-modernism versus modernism). As a result, postmodern theory, underlying the cultural turn, may claim to have deconstructed the dualisms of modern thought (i.e., culture-nature, male-female, mind-body), but in practice only reinforced dualist thinking:

New materialism is a cultural theory for the twenty-first century that attempts to show how postmodern cultural theory, even while claiming otherwise, has made use of a conceptualization of ‘post-’ that is dualistic. Postmodern cultural theory re-confirmed modern cultural theory, thus

allowing transcendental and humanist traditions to haunt cultural theory after the Crisis of Reason. New materialist cultural theory shifts (post-) modern cultural theory, and provides an immanent answer to transcendental humanism.¹⁵

In an effort to break through the hierarchical dialectics of (post) modern thinking, new materialism attempts to establish ‘transversal cartographies’, that is, affirmative relations between seemingly opposing theoretical traditions, which are ‘structured by positivity rather than negativity’.¹⁶ Its main tool in achieving this ambitious aim is a conceptualization of reading as ‘re-reading’. Thus, new materialists reread classical and marginal texts from different paradigms and (inter)disciplines through one another. In doing so, they look for ‘sharing characteristics’ and ‘unexpected theorizations’ between, for instance, the structuralism and Marxist materialism of the 1970s – a scholarly tradition that the cultural turn so forcefully rejected – and recent ideas from the field of Science and Technology Studies (STS), including Latour’s Actor-Network Theory.¹⁷ In the words of Dolphijn and Van der Tuin: ‘New materialism says “yes, and” to all intellectual traditions, traversing them all, creating strings of thought that, in turn, create a remarkably powerful and fresh “rhythm” in academia today’.¹⁸

Theoretical particle physicist and feminist theorist Karen Barad, for example, who is one of the most prominent new materialist scholars, brings insights and approaches from physics, including recent discoveries in quantum mechanics, and cultural and social theories of Michel Foucault, Judith Butler and Bruno Latour into conversation with one another.¹⁹ The result is what she calls a ‘posthumanist performative account’ that breaks through established dualisms and shows how humans and nonhumans, and matter and meaning are co-constitutive. Central to Barad’s argument is the notion that humans and culture are not outside of nature. Rather, humans are nature; they are ‘of the world’. Nature and culture, according to Barad, are both performative. In other words, nature is not a passive stage on which humans perform; nature shapes culture as culture shapes nature. In a similar vein, Donna Haraway, whose early training as a biologist introduced her to the self-regulation power of the natural world, coined the term ‘naturecultures’, i.e., the idea that ‘bodies and meanings coshape one another’.²⁰ Such ideas direct attention to the body as a biological entity, as living matter,

next to the cultural turn's insight that bodies, as empty containers, only acquire meaning in discursive practices.²¹ The transversal readings of Barad and Haraway bring 'nature' into cultural theory without giving preference to either one. Indeed, one of the central insights of new materialism is that nature and culture are two sides of the same coin only taken apart by the academic world whose internal dynamics have distributed labour to separate science and humanities departments.

How Matter Comes to Matter²²

From these new materialist rereadings, and their 'unexpected theorizations' about the co-constitution of nature and culture, emerge new notions of *matter* and the agency of objects that differ considerably from the passive objects in cultural history. New materialists talk about 'matter' in at least four different ways. Firstly, materiality is seen as a dynamic and self-organizing process. According to this notion, which signifies the new materialist's attempt to bring ideas from the natural sciences into the humanities, matter is a productive and agentive force. 'Matter is neither fixed nor given nor the mere end result of different processes. Matter is produced and productive, generated and generative. Matter is agentive, not fixed essence or property of things'.²³ Secondly, and closely related, is the notion that nonhuman agents co-shape social worlds. If materiality is agentive, then objects have a life of their own; they actively interact with, resist and co-shape other entities, including humans. Drawing on STS scholars like Bruno Latour, new materialists argue that objects are 'actants', that is, objects are part of networks of relations and play an active role in establishing, maintaining or dissolving these networks.²⁴

Thirdly, new materialists are engaged with 'material realism'.²⁵ The cultural constructivist and deconstructionist approaches of the cultural turn reduced the material world to discursive representations. New materialist scholars, on the other hand, want to engage with and theorize about non-discursive aspects of reality by taking lived experience, corporeal practice and biological substance into consideration. Finally, new materialists refer to matter in the sense that some things 'matter' because they are a cause of great concern. This last notion indicates a turn to ethics and highlights the political programme of the movement. After the cultural turn's political correctness and moral impartiality,

new materialists want to take a position with regard to debates about climate change and biotechnical engineering among other issues.²⁶ In order to do so, they need to take the nonhuman world, traditionally the domain of the natural sciences, seriously.

Consider Nancy Tuana's reading of hurricane Katrina, one of the case-studies in *Material Feminisms*.²⁷ On August 29, 2005, Katrina played havoc among New Orleans. At first sight, hurricanes are natural forces. However, according to Tuana, it is impossible to separate the natural from the social. Katrina, for instance, only became such an explosive natural force because of global warming, which is the result of complex interactions between chemical processes and human activities fuelled by cultural beliefs of consumerism and the social structures of the free-market economy. What is more, American politicians trivialized the dangers of climate change and refused to heighten New Orleans' levees. Katrina also interacts with other matters of concern such as poverty, racism and ignorance. And all these have material dimensions too. 'Grow up without proper nutrition', Tuana states, 'and physiological development will be affected. Grow up without educational resources, and cognitive development will be affected. Grow up living the effects of institutionalized racism, and trust in those institutions will be affected'.²⁸ By looking at Katrina, and the complex web of relations of which it is part, Tuana shows that boundaries between natural and social phenomena are 'porous'. Human and nonhuman entities, she argues, interact and are dynamically related.

In sum: new materialism, in an effort to traverse the dualisms of (post)modern thought, creates diffractive cartographies by reading different disciplines and paradigms through one another. These result in fresh theorizations about and empirical engagements with the material world and matters of concern.

Towards a New Materialist History

Is new materialism applicable to the study of the past? Is there a new materialist history? Notions of matter as generative force and non-humans agency may seem foreign to many historians who, as we saw above, treat objects as cultural artefacts made and modified by humans. Some historians, however, have recently discovered Latour and Barad. It is in their work that the contours of a new materialist history are

starting to emerge.²⁹ Rather than simply applying Latour to historical case studies, they bring his work in conversation with the existing historiographical tradition. These conversations – or transversal readings – help overcome some of the problems associated with the cultural turn. They show, for example, that culture and nature, and matter and meaning are interrelated. In doing so, these transversal readings problematize and deepen the cultural historian's ideas about the role of objects and material culture in the past. Interestingly, among the historians who flirt with new materialism are some 'old' social historians who, during the turbulent times of the cultural turn, stayed true to Marxist-inspired materialisms. As I explained earlier, socially-engaged Marxist historians were among the first in the profession to take material culture seriously as a source to reconstruct the history of the lower classes.

Transversal readings can result in excited conversations between seemingly incompatible intellectual traditions and disciplines. Recently, archaeologists, anthropologists, geographers and STS scholars started such a conversation in *The Oxford Handbook of Material Culture Studies* (2010).³⁰ Unlike Harvey's *History and Material Culture*, which focuses on one intellectual tradition, *The Oxford Handbook* provides a 'dialogue' between cultural turn-inspired approaches in material culture studies and work from other disciplines on the agential power of non-humans. In what they call a 'reactionary view', the contributors deliberately refuse to position themselves vis-à-vis previous generations of scholars. Rather, they say to 'represent a series of crossroads rather than a new series of "turns"'.³¹ In doing so, the work provides a transversal cartography and breaks through established dualisms, e.g., between humans and nonhumans. Drawing on Barad and other new materialists, the editors of the *The Oxford Handbook* conclude that researcher and research object co-shape one another: 'The studies collected in this volume lead towards an appreciation not only of the effects of things, but also of things as the effects of material practices'.³²

In similar fashion, *Material Powers* (2010), edited by social historian Patrick Joyce and sociologist Tony Bennet, assembles a group of scholars whose empirical work is inspired by theories from different paradigms and disciplines.³³ By bringing ideas about power and matter of, among others, Michel Foucault, Latour and Gilles Deleuze into the study of history, the book shows that culture, economy and the social are always intertwined and co-constituted in material-discursive

networks of relations. Chris Otter's chapter on urban history provides a particularly good example of such a new materialist history.³⁴ Otter rereads old texts (Heidegger, Braudel) and new ones from disciplines such as STS and environmental sciences and applies them to the history of the city. From these 'conversations' he concludes that 'old analytic binaries (natural-social, urban-nonurban) no longer have much analytical purpose'. And like Barad, he argues that matter is a 'dynamic ... and interactive force'.³⁵ In an urban environment such a force can be traced by looking at the 'metabolism of the city', that is, the circulation of particular substances, such as water and meat. 'Analyzing the flows themselves brings scholarship closer to the material transformations which have really defined the past 200 years: the dramatic exploitation of resources, the inefficiency of their use, the development of synthetics, the widening inequality of access to resources, and the remarkable lack of concern for "externalities" like air quality'.³⁶

Substances that flow through a city, Otter argues, are at once material, political and environmental. The presence of clean drinking-water, for example, is the result of human infrastructures and political decisions. Water, however, is part of an assemblage (Deleuze's term) that, next to humans, includes a 'chain of material agents'. Thus, although people try to control water supplies, non-humans can frustrate these efforts in unexpected ways. At the end of the nineteenth century, for instance, water reservoirs in the United States consisted of lead pipes that polluted the environment and poisoned people instead of making their lives more comfortable. The same goes for meat, which, according to Otter, 'has a material history which is simultaneously technical, political, environmental and physiological'.³⁷ People domesticated animals for meat, but now these same animals produce methane, a substance that contributes to environmental problems like climate change.

Back to the Future

Examples like Otter's metabolism of the city demonstrate that new materialist approaches can lead to new insights into the past. However, to many historians new materialism is problematic for the simple reason that they are interested in people as cultural beings. Historians turned to

objects in order to find traces of marginalized groups who had escaped the written record. They were not interested in the objects themselves. The idea of non-human agency, therefore, remained trivial. What is more, most historians lack the feminists' ethical imperative to engage themselves with contemporary matters of concern in which materiality plays an important role. One could easily look at, say, the 1755 Lisbon earthquake from Tuana's interactionist point of view, but what most historians want to know is how the disaster functioned as a metaphor in philosophical treatises. There are no lives at stake anymore.

Yet, on a theoretical level a new materialist history might help historians overcome some of the problems of the cultural turn. The great strength of new materialism is that it tries to incorporate fresh ideas from other disciplines, including the natural sciences, into the humanities, without rejecting the work of previous generations of humanities scholars. By focusing on flows and networks of relations that are at the same time cultural, social, political and natural, a new materialist history breaks through the cultural turn's hegemony of culture and language. In so doing, it does not deny the importance of language and discursive practices, and other key insights from the cultural turn. Rather, a new materialist history shows that meaning and matter are mutually productive. In addition, transversal cartographies can help reappraise the valuable work done by social historians in the 1970s, and earlier generations, which new cultural historians rejected a bit too fast in the heat of the cultural turn. The study of history has a very rich past full of beautiful texts (classics and obscure ones) that deserve rereading. What unexpected future theorizations may we expect if we bring, say, Emmanuel Le Roy Ladurie's work on climate into conversation with the cultural turn and present developments in the natural sciences?³⁸ It is about time to go back to the future.

Notes

- 1 I would like to thank the anonymous reviewers for their helpful comments and suggestions to improve this article.
- 2 Georg G. Iggers, *Historiography in the Twentieth Century: From Scientific Objectivity to the Postmodern Challenge* (Middletown, 1997).
- 3 Alun Munslow, *Deconstructing History* (New York, 1997).

- 4 Victoria E. Bonnell and Lynn Hunt (eds), *Beyond the Cultural Turn: New Directions in the Study of Society and Culture* (Berkeley, 1999); Peter Burke, *What is Cultural History?* (Cambridge, 2008) 102–127; and Geoff Eley, *A Crooked Line: From Cultural History to the History of Society* (Ann Arbor, 2008).
- 5 Harvey Green, 'Cultural History and the Material(s) Turn', *Cultural History* 1 (2012) 61–82.
- 6 Thomas J. Schlereth (ed.), *Material Culture Studies in America* (Nashville, 1982); Adrienne D. Hood, 'Material Culture: the object', in: Sarah Barber and Corinna M. Peniston-Bird (eds), *History beyond the Text* (London, 2008) 176–198.
- 7 Cary Carson, 'Material Culture History: The Scholarship Nobody Knows', in: Ann Smart Martin and J. Ritchie Garrison (eds), *American Material Culture: The Shape of the Field* (Winterthur, 1997) 401–428.
- 8 For example: E.P. Thompson, *The Making of the English Working Class* (Harmondsworth, 1974); Joan Scott, 'Gender: A Useful Category of Historical Analysis', *The American Historical Review* 91 (1986) 1053–1075.
- 9 Schlereth, *Material Culture Studies in America*, 3.
- 10 Karen Harvey (ed.), *History and Material Culture* (London, 2009).
- 11 Marina Moskowitz, 'Back yards and beyond: landscapes and history', in: *History and Material Culture*, 67–84.
- 12 Rosi Braidotti, *Nomadic subjects: Embodiment and Sexual Difference in Contemporary Feminist Theory* (New York, 1994).
- 13 Stacy Alaimo and Susan Heckman (ed.), *Material Feminisms* (Bloomington, 2008); Diana Coole and Samantha Frost (ed.), *New materialisms: Ontology, Agency, and Politics* (Durham, 2010); and Rick Dolphijn and Iris van der Tuin, *New Materialism: Interviews & Cartographies* (Ann Arbor, 2012).
- 14 Alaimo and Heckman, 'Introduction: Emerging Models of Materiality in Feminist Theory', in: *Material Feminisms*, 1–19, 6.
- 15 Dolphijn and Van der Tuin, *New Materialism*, 110.
- 16 *Ibid.*, 127.
- 17 Susan Hekman, 'Constructing the Ballast: An Ontology for Feminism', in: *Material Feminisms*, 85–119.
- 18 Dolphijn and Van der Tuin, *New Materialism*, 89.
- 19 Karen Barad, *Meeting the Universe Halfway: Quantum Physics and the Entanglement of Matter and Meaning* (Durham, 2007). See also: 'Interview with Karen Barad', in: *New Materialism*, 48–70.
- 20 Donna Haraway, *When Species Meet* (Minneapolis, 2008) 4.

- 21 See, for example: Angela N. H. Creager et al., *Feminism in Twentieth-Century Science, Technology, and Medicine* (Chicago, 2001).
- 22 Karen Barad, 'Posthumanist Performativity: Toward an Understanding of How Matter Comes to Matter', *Signs: Journal of Women in Culture and Society* 28 (2003), 801–831.
- 23 Barad, *Meeting the Universe Halfway*, 137.
- 24 Vicki Kirby, 'Natural Convers(at)ions: Or, What if Culture was Really Nature All Allong', in: *Material Feminisms*, 214–236.
- 25 Coole and Frost, 'Introducing the New Materialisms', in: *New Materialisms*, 1–43, there 6.
- 26 'Interview with Rosi Braidotti', in: *New Materialism*, 19–37. See also: Rosi Braidotti, 'Yes, There is no Crisis: Working Towards the Posthumanities', *International Journal for History, Culture and Modernity* 1 (2013), 187–199; Coole and Frost, 'Introducing the New Materialisms', 5.
- 27 Nancy Tuana, 'Viscous Porosity: Witnessing Katrina', in: *Material Feminisms*, 188–213. Other case studies of new materialism applied to the creative arts can be found in: Barbara Bolt and Estelle Barrett (ed.), *Carnal Knowledge: Towards a New Materialism through the Arts* (New York, 2012).
- 28 Tuana, 'Viscous Porosity', 203.
- 29 Next to the publications discussed below, other excellent examples include: Geertje Mak, *Doubting Sex: Inscriptions, Bodies and Selves in Nineteenth-Century Hermaphrodite Case Histories* (Manchester, 2012); Timothy Mitchell, *Rule of Experts: Egypt, Techno-Politics, Modernity* (Berkeley, 2002).
- 30 Dan Hicks and Mary C. Beaudry (ed.), *The Oxford Handbook of Material Culture Studies* (New York, 2010).
- 31 Hicks and Beaudry, 'Introduction: Material Culture Studies', in: *The Oxford Handbook*, 20.
- 32 *Ibid.*, 20.
- 33 Tony Bennet and Patrick Joyce (ed.), *Material Powers: Cultural studies, history and the material turn* (London, 2010).
- 34 Chris Otter, 'Locating matter: the place of materiality in urban history', in: *Material Powers*, 38–59.
- 35 *Ibid.*, 54.
- 36 *Ibid.*
- 37 *Ibid.*, 53.
- 38 Emmanuel Le Roy Ladurie, *Times of Feast, Times of Famine: A History of Climate Since the Year 1000* (Garden City, NY, 1971).

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