

Cambridge University Press

978-0-521-88185-2 - Food, Energy and the Creation of Industriousness: Work and Material Culture in Agrarian England, 1550-1780

Craig Muldrew

Frontmatter

[More information](#)

Food, Energy and the Creation of Industriousness

Until the widespread harnessing of machine energy, food was the energy which fuelled the economy. In this groundbreaking study of agricultural labourers' diet and material standard of living Craig Muldrew uses new empirical research to present a much fuller account of the interrelationship between consumption, living standards and work in the early modern English economy than has previously existed. The book integrates labourers into a study of the wider economy and engages with the history of food as an energy source and its importance to working life, the social complexity of family earnings and the concept of the 'industrious revolution'. It argues that 'industriousness' was as much the result of ideology and labour markets as labourers' household consumption. Linking this with ideas about the social order of early modern England the author demonstrates that bread, beer and meat were the petrol of this world and a springboard for economic change.

CRAIG MULDREW is Senior Lecturer in the Faculty of History, University of Cambridge.

Cambridge University Press

978-0-521-88185-2 - Food, Energy and the Creation of Industriousness: Work and Material Culture in Agrarian England, 1550-1780

Craig Muldrew

Frontmatter

[More information](#)

Cambridge Studies in Economic History

Editorial Board

PAUL JOHNSON *La Trobe University*

SHEILAGH OGILVIE *University of Cambridge*

AVNER OFFER *All Souls College, Oxford*

GIANNI TONIOLO *Università di Roma 'Tor Vergata'*

GAVIN WRIGHT *Stanford University*

Cambridge Studies in Economic History comprises stimulating and accessible economic history which actively builds bridges to other disciplines. Books in the series will illuminate why the issues they address are important and interesting, place their findings in a comparative context, and relate their research to wider debates and controversies. The series will combine innovative and exciting new research by younger researchers with new approaches to major issues by senior scholars. It will publish distinguished work regardless of chronological period or geographical location.

A complete list of titles in the series can be found at:
www.cambridge.org/economichistory

Cambridge University Press

978-0-521-88185-2 - Food, Energy and the Creation of Industriousness: Work and Material Culture in Agrarian England, 1550-1780

Craig Muldrew

Frontmatter

[More information](#)

Food, Energy and the Creation of Industriousness

*Work and Material Culture in Agrarian
England, 1550–1780*

Craig Muldrew

University of Cambridge



CAMBRIDGE
UNIVERSITY PRESS

Cambridge University Press

978-0-521-88185-2 - Food, Energy and the Creation of Industriousness: Work and Material Culture in Agrarian England, 1550-1780

Craig Muldrew

Frontmatter

[More information](#)

CAMBRIDGE UNIVERSITY PRESS

Cambridge, New York, Melbourne, Madrid, Cape Town, Singapore,
São Paulo, Delhi, Dubai, Tokyo, Mexico City

Cambridge University Press

The Edinburgh Building, Cambridge CB2 8RU, UK

Published in the United States of America by Cambridge
University Press, New York

www.cambridge.org

Information on this title: www.cambridge.org/9780521881852

© Craig Muldrew 2011

This publication is in copyright. Subject to statutory exception and to the provisions of relevant collective licensing agreements, no reproduction of any part may take place without the written permission of Cambridge University Press.

First published 2011

Printed in the United Kingdom at the University Press, Cambridge

A catalogue record for this publication is available from the British Library

Library of Congress Cataloguing in Publication data

Muldrew, Craig, 1959–

Food, energy and the creation of industriousness : work and material culture in agrarian England, 1550–1780 / Craig Muldrew.

p. cm. – (Cambridge Studies in economic history-second series)

Includes bibliographical references and index.

ISBN 978-0-521-88185-2

1. Diet–England–History. 2. Food consumption–England–History. 3. Agricultural laborers–England–History.

4. Power resources–England–History. I. Title. II. Series.

TX360.G7M85 2010

641.30942–dc22

2010035581

ISBN 978-0-521-88185-2 Hardback

Cambridge University Press has no responsibility for the persistence or accuracy of URLs for external or third-party internet websites referred to in this publication, and does not guarantee that any content on such websites is, or will remain, accurate or appropriate.

Cambridge University Press

978-0-521-88185-2 - Food, Energy and the Creation of Industriousness: Work and Material
Culture in Agrarian England, 1550-1780

Craig Muldrew

Frontmatter

[More information](#)

To Janine

Contents

<i>List of figures</i>	<i>page</i> viii
<i>List of tables</i>	ix
<i>Preface</i>	xiii
<i>Note on measurements and inflation</i>	xvi
<i>List of abbreviations</i>	xvii
1 Introduction	1
2 What did labourers eat?	29
3 Calories consumed by labourers	117
4 Labourers' household goods	163
5 Work and household earnings	208
6 Agricultural labour and the industrious revolution	260
7 'Honest' and 'industrious' labourers?	298
Conclusion	319
<i>Bibliography</i>	325
<i>Index</i>	346

Cambridge University Press
978-0-521-88185-2 - Food, Energy and the Creation of Industriousness: Work and Material
Culture in Agrarian England, 1550-1780
Craig Muldrew
Frontmatter
[More information](#)

Figures

2.1 Cotton family meat purchases, 1715	<i>page</i> 87
6.1 Harewood House labourers’ work, 1789	290
6.2 Blackett family estate labourers’ work, 1758	291

Tables

1.1	Labourers as a percentage of agricultural occupations over time	<i>page 27</i>
2.1	Richard Latham’s expenses	54
2.2	Presence of cooking equipment over time in labourers’ probate inventories	100
3.1	Calorific values of different foods	118
3.2	Daily diet at King’s College, Cambridge, 1481–1664	122
3.3	Working diets	124
3.4	London Bridewell diets, 1600	125
3.5	Diet at the Westminster house of correction, 1561	126
3.6	Diet at the Bury St Edmunds house of correction, 1588	126
3.7	Robert Loder’s family’s daily consumption	128
3.8	Daily calorific expenditure for different tasks	131
3.9	Eighteenth-century workhouse diets	134
3.10	Jacob Vanderlint’s budget for a labouring man, wife and four children in London, 1734	136
3.11	Two mid-eighteenth-century diets abstracted from a well-employed Berkshire family	137
3.12	Two mid-eighteenth-century diets abstracted from a poor Cumberland family	139
3.13	Two mid-eighteenth-century diets abstracted from a poor Berkshire family of four	140
3.14	Calories from global crop production	142
3.15	Calories of meat consumed from estimates of numbers of animals slaughtered, 1695 and 1770	154
3.16	Total calories per day by sex and age	156
4.1	Inventory numbers, values and debts by county over time	172
4.2	Number of inventories listing rooms in labourers’ inventories sample over time	178
4.3	Numbers of rooms in labourers’ houses	178
4.4	Types of rooms in labourers’ houses	180

x	List of tables	
	4.5 Presence of fire equipment in labourers' houses	182
	4.6 Total inventory and household values over time	183
	4.7 Quartile inventory values over time	184
	4.8 Distribution of inventories by total wealth	186
	4.9 Labourers' inventories matched with hearth-tax entries for Cambridgeshire, Hampshire and Kent 1664–78	188
	4.10 Presence of consumption goods in pauper inventories compared to labourers' inventories 1700–1800	192
	4.11 Itemised household goods per inventory	193
	4.12 Possession of household goods by time period	194
	4.13 Ownership of tableware over time	195
	4.14 Ownership of linen over time	196
	4.15 Presence of roasting equipment over time	197
	4.16 Average value per item	199
	4.17 Incidence of the use of adjectives to describe certain goods (percentages)	200
	4.18 Portsmouth dock workers' inventories	202
	4.19 Labourers' accounts from the national probate account database, 1600–1710	203
	4.20 Inventory dates compared to national deaths by month of the year	206
	5.1 Change in day wage rates over time as estimated by Phelps Brown and Hopkins, and Gregory Clark	209
	5.2 Batchelor's estimate of a labourer's earnings including harvest from 1808	212
	5.3 Labouring family budget estimates for 1568, 1597, 1625, 1680 and 1740	215
	5.4 Male wage earnings over time	217
	5.5 Percentage of the population in service age 15–29	219
	5.6 Numbers of servants compared to day labourers in the 1760s	223
	5.7 Yearly earnings of dairymaids in 1808, from Thomas Batchelor	236
	5.8 Percentage of work done by women at Crowcombe Barton farm over the course of 1756–7	238
	5.9 Earnings from domestic spinning c. 1770, taken from Arthur Young's tours	243
	5.10 A married woman's potential earnings from 35 weeks of spinning	244
	5.11 Estimates of total earnings from spinning at different dates	244
	5.12 Labourers' inventories mentioning crops in the field	247

Cambridge University Press
978-0-521-88185-2 - Food, Energy and the Creation of Industriousness: Work and Material
Culture in Agrarian England, 1550-1780
Craig Muldrew
Frontmatter
[More information](#)

List of tables	xi
5.13 Types of crops, harvested food and fuels mentioned in labourers' inventories	248
5.14 Size of crop acreages listed in labourers' inventories	249
5.15 Monthly totals of inventories by date	249
5.16 Ownership of animals over time in labourers' inventories	250
5.17 Value of animals in labourers' inventories	251
5.18 Brewing and dairy production in labourers' inventories (percentages)	255
5.19 Estimates of all other family earnings compared to male wages	257
6.1 Numbers of labourers' inventories recording tools	265
6.2 Types of tools in labourers' inventories	266
6.3 Rates of work calculated from wage assessments	268
6.4 Batchelor's costing of labour expenses per acre	271
6.5 Batchelor's costs of pasture per acre	274
6.6 Labour on Arthur Young's model farm	276
6.7 Profits of Arthur Young's model farm	277
6.8 Employment per acre in the 1760s, based on Arthur Young's data	278
6.9 Farm labour at Keveral Barton	279
6.10 Farm labour at Morval Barton	280
6.11 Percentage comparison of the size of farms in a sample of south Midland estates	281

Cambridge University Press

978-0-521-88185-2 - Food, Energy and the Creation of Industriousness: Work and Material Culture in Agrarian England, 1550-1780

Craig Muldrew

Frontmatter

[More information](#)

Preface

The subject of this book occurred almost accidentally. After finishing my first book, *The Economy of Obligation*, I intended to take the themes of that work forward into the eighteenth century, looking at the origin of local banking and networks of trust. While that work has continued, some years ago I became interested in the consumption of the labouring poor through my work into wage payments and research done for the chapter in *The Economy of Obligation* which examined household consumption and market transactions. There I was very surprised at the amount of meat consumed and the high numbers of butchers in early modern towns such as King's Lynn. I presented this information in a quite rudimentary form at a conference in 2000, where the argument for a relatively high level of meat consumption was met with scepticism, if not downright incredulity. Some years later, this spurred me on to do much more research into diets, which in turn led me to consider Robert Fogel's work on human energy. I then attempted to think of human energy in the same way as Tony Wrigley has analysed the input of animal energy into agricultural production.

The study of labourers' inventories also stemmed from work done for *The Economy of Obligation* using probate inventories. When researching in the Hampshire Record Office I noticed that there were much larger numbers of labourers' inventories than I thought existed. Subsequently I found out that Leigh Shaw-Taylor had discovered labourers' inventories in Northampton and Lincolnshire. We then worked together to discover samples of labourers' inventories in other counties and had them made machine readable with two British Academy Small Grants. Here I have analysed this sample and, in doing so, naturally attempted to test aspects of Jan de Vries's theory of what he has termed the 'industrious revolution', which has been one of the most stimulating recent macro-theories of early modern economic development. Doing this led me back to early modern economic pamphlet literature, where, to my surprise, I found that industriousness had already been conceived of as a way to increase England's national wealth. This discovery allowed

Cambridge University Press

978-0-521-88185-2 - Food, Energy and the Creation of Industriousness: Work and Material Culture in Agrarian England, 1550-1780

Craig Muldrew

Frontmatter

[More information](#)

xiv Preface

me to make sense of change over time in a new way. Thus, the whole project grew organically out of what at first seemed to be a series of separate problems which gradually came together. As a result the themes and structure of the book have evolved, often slowly, over the last five or six years, but I think I have learned much more by chance and accident rather than relying on hypothesis.

I have also learned even more from continual interaction with colleagues at Cambridge, the University of Exeter, the University of Bologna and elsewhere. At the beginning of this project it is fair to say my knowledge of agrarian history was limited, as I had previously worked mostly on urban records, but I have learned a great deal from friends and colleagues doing agricultural history. I have benefited most from many conversations with Leigh Shaw-Taylor. I have also learned much from Mark Overton, who kindly provided me with data he already had of labourers' inventories from Kent after 1600, and Bob Allen, who told me how useful Thomas Batchelor was as a source. Naomi Tadmor kindly lent me her photocopy of Turner's original diary to investigate his dinners. James Bates also shared his great knowledge of brewing as well as his excellent beer. I would also like to thank Ian Archer, Matthew Clark, John Chartres, Martin Daunt, Diccon Cooper, Mark Dawson, Amy Erickson, Laurence Fontaine, Peter King, Peter Kitson, Alysa Levene, John Money, Carlo Poni, Emma Rothschild, Thomas Sokoll, Richard Smith, Sarah Pennell, Roberto Scazzieri, Alexandra Shepard, Helen Speechley, John Styles, Phil Withington and John Walter. Joe Barker, Sarah Brown, Alec Corio, Nicola Henshall, Ian Keefe, Matt Ward, Ali Warren and Matthew Westlake all worked as researchers transcribing probate inventories and account books for me, and the book would have been impossible without their excellent work. I would also like to thank Tony Wrigley, Keith Wrightson, Paul Warde and Ken Sneath for reading parts of the book, and finally Janine Maegraith for not only reading the entire manuscript and making many helpful comments but attempting to correct my dyslexic word-processing in heroic fashion. Finally it remains to thank the various funding bodies which have helped make this research possible. Since, as I said, it is a work which evolved in pieces, it required a number of small grants, which in this way are just as useful and necessary to the research community as large grants. Over the gestation of the book the Ellen Macarthur Fund, the Centre for History and Economics and Queens' College Fellows Research Fund have all helped. The British Academy awarded Small Research Grant no. SG-40825, 'The Material Wealth and Work of the Labouring Poor in England as Reflected in Probate Inventories, 1570-1790', to transcribe the labourers' inventories. The Bologna Institute for Advanced

Cambridge University Press

978-0-521-88185-2 - Food, Energy and the Creation of Industriousness: Work and Material Culture in Agrarian England, 1550-1780

Craig Muldrew

Frontmatter

[More information](#)

Preface

xv

Studies provided me with a three-month fellowship from February to April 2005 which allowed me to start writing and to present my findings there. I would like especially to thank Carlo Poni and Roberto Scazzieri for showing such hospitality during my visit. Finally I would like to thank the Arts and Humanities Research Council, whose award of a term of leave in 2008 under their Research Leave Scheme allowed me to finish the first draft of the book.

Cambridge University Press

978-0-521-88185-2 - Food, Energy and the Creation of Industriousness: Work and Material Culture in Agrarian England, 1550-1780

Craig Muldrew

Frontmatter

[More information](#)

Note on measurements and inflation

The weights and measurements used in this book are British Imperial and airdupois measurements, which are the closest to those used by contemporaries. In many cases, however, historical measurements of certain things were different, and such instances are discussed specifically in the text. When comparing monetary values before 1650 inflation has been taken into account, where it has been appropriate to do so, using the price data collected by Phelps Brown and Hopkins, as summarised by Christopher Clay. After this date there was a slow overall deflation of grain prices to around 1765. Unfortunately there are no similarly ample price data for manufactured goods, but there is evidence that prices here also went down after 1650. I have chosen not to deflate values, but rather to discuss how lower prices could have affected the amount of food and household goods purchased.

In many of the calculations which follow I have often expressed values in exact numbers. This has been done for consistency, so that the method of calculation can be traced. But it needs to be mentioned that with any historical figures there will almost always be some degree of approximation, which I have tried to stress in the text.

The standard unit for grain was the bushel (equal to 8 gallons), and 8 bushels made a quarter. The weight of a bushel of grain could vary, but a bushel of wheat weighed about 56 lb or roughly 25 kg, a bushel of barley 48 lb, and a bushel of oats 38 lb. The unit of measurement for area was the acre, equivalent to about 0.4 hectares. Before 1971 the English pound (£) consisted of 20 shillings (s); each shilling comprised 12 pence (d); and a penny comprised 4 farthings. In some tables monetary amounts are given in pounds with decimal places for ease of calculation and comparison. Dates given are modern, with the year beginning on 1 January.

Abbreviations

<i>AHEW</i> , IV	Joan Thirsk (ed.), <i>The Agrarian History of England and Wales</i> , IV, 1500–1640 (Cambridge, 1967)
<i>AHEW</i> , V	Joan Thirsk (ed.), <i>The Agrarian History of England and Wales</i> , V, 1640–1750 (Cambridge, 1984)
<i>AHEW</i> , VI	G. E. Mingay (ed.), <i>The Agrarian History of England and Wales</i> , VI, 1750–1850 (Cambridge, 1981)
CKS	Centre for Kentish Studies
CRO	Cambridgeshire Record Office
ERO	Essex Record Office
HRO	Hampshire Record Office
NCS	Northumberland Collections Service
NRO	Norfolk Record Office
SRO	Somerset Record Office
WRO	Wiltshire Record Office
WYASB	West Yorkshire Archive Service, Bradford
WYASL	West Yorkshire Archive Service, Leeds