

Chapter 1

Introduction

Derek J. Oddy and Peter J. Atkins

Obesity in Europe in the Twentieth Century

This book is a first attempt to write the history of obesity in Europe in the twentieth century. Hitherto, this has not been a topic calling for academic research by historians of food consumption, but the present wide-ranging collection of papers establishes a challenge for obesity to be studied as a key economic, social, cultural and physical phenomenon of the modern era. Until now, obesity has been the subject of a multitude of research papers, primarily written by medical scientists, and in the early years of the twenty-first century its extent has attracted categorization as an epidemic. The causes and treatment of obesity have acquired a level of general interest that has made it a topic included in newspapers on an almost daily basis. In the introduction to this collection of papers the editors seek to recognize the importance of obesity in Europe, to identify the chronology of change in body weight in the twentieth century and to establish the obesogenic factors that have contributed to the secular trend in excess bodyweight. Historians of food have laid great stress on the privation and under-consumption of the first half of the twentieth century. It has now become apparent that the focus of investigation must shift to the excessive consumption that has marked recent decades

A Dynamic Bodyweight Model for the Twentieth Century

The incidence of excess bodyweight in European populations shifted its location in the twentieth century. As living standards rose in the late nineteenth century, men's eating patterns – emphasizing the importance of animal foods for their 'strength-giving' qualities – led to a rise in bodyweight with age as energy expenditure declined. By middle age, upper-class and middle-class men were 'stout' if not markedly overweight but were culturally defined as being in 'good health'. For women, to be fat was to be petit bourgeois – upper-class culture favoured the suppression of appetite, whereas working-class women, putting their husbands' and sons' needs before those of their own and their daughters, had insufficient food to eat, which was best evidenced by their stunted growth and the incidence of anaemia. As urbanization became more extensive, anaemia, known as Chlorosis or 'green sickness', was widespread among young female servants, shop assistants and clerical workers by the end of the First World War.

From 1918 there was a marked change in the cultural, social and physical landscape of European society, which followed from the increasing mechanization of industrial production. After World War II, a more sedentary lifestyle developed from the 1960s onwards. Eating patterns changed least and slowest amongst the working classes so that once the severe economic fluctuations of the first half of the twentieth century became a thing of the past, working-class families began to exhibit weight gain as incomes rose and major variations in consumption were prevented by welfare provisions. While slimming fashions and the youth culture had their origins mainly in the interwar years, women's weight increases reflected their rising incomes as greater workforce participation outside the home developed and as their eating patterns increased to match those of men – including, in the last quarter of the twentieth century, a greater consumption of alcohol. In short, men were fatter than women in the nineteenth century and women became fatter than men in the twentieth.

Much of the literature on obesity has addressed the individual behaviour of consumers. Our contention is that the explanation of trends is better sought at the scale of communities, classes, regions and even nations. The factors are cultural, social and economic; they are integral to our changing lifestyles and to structural changes in modern food systems and they are therefore exceptionally difficult for governments to influence. The present book has value in its desire to look at changes in food consumption patterns country by country. Historical publications using this scale of analysis are rare, although the work of Popkin, James and Monda on the recent 'nutrition transition' in China is along similar lines.¹

Among the factors usually associated with the transition from undernutrition to obesity, four are worth highlighting from the outset. The first is that urbanization had a profound impact upon diets, particularly in countries that had not experienced much city growth or industrialization before 1900. Customary short-distance food supply chains were increasingly stretched, and migrants left behind their traditional fresh food subsistence. On average, less energy was expended in urban jobs than in agricultural labouring, so the nutritional profile was rather different, especially as sedentary employment in the tertiary and quaternary sectors came to dominate advanced economies. A related point about urbanization is that city design in the twentieth century has favoured the growth of obesity. This does not just mean cities designed for the motor car, such as Los Angeles, where walking to work or to the shops would seem to be an odd choice. *All* modern cities to a certain extent have in-built discouragements to exercise. There is now a growing literature on this phenomenon, which refers to the creation of 'obesogenic environments'. These are neighbourhoods where one or more of the following features are present: poor perceptions of safety, especially due to street crime; poor walkability of streets (street connectivity, traffic, pavements, dog mess); poor access to upper floors of high-rise residential buildings; high density of fast-food restaurants; lack of public parks and playing fields; few gyms or sports clubs; local retail grocers emphasizing

1 Popkin 1999, Popkin and Gordon-Larsen 2004, Monda et al. 2007, James 2007.

cheap, energy-dense foods in what are sometimes called ‘food deserts’; housing with inadequate facilities for the preparation, cooking and storage of perishable foods such as fruit and vegetables; low levels of social networking and support; and, most common, low disposable incomes.²

Third, there is an argument that combines demand and supply. On the one hand consumers’ standards of living rose steadily in the twentieth century, despite the temporary set backs of wars and economic slumps, to the point where purchasing sufficient food to satisfy hunger was possible for nearly all. On the other hand, the food-supply systems employed to meet this demand were fundamentally transformed. This not only meant a supermarket retail revolution, but also an increasing proportion of processed foods on sale and in the diet and, most significant for obesity, the availability of high-fat foods at affordable prices. The consequence has been a very powerful combination of deeper pockets and a cornucopia of quantity, quality and variety, which together has encouraged over-consumption.³ Given the difficulty in modern lifestyles of judging a balance between energy intake and exercise, it is hardly surprising that obesity has followed and continues to increase in all of the countries of Europe.

The fourth factor is a matter of knowledge exchange. This is complex and contradictory because modern media are replete with messages advertising fatty junk foods to children but, at the same time, selling slimming products and health foods. There is some helpful research on the history of food advertising and on the evolution of government food policies with regard to healthy diets, but there is less on the reception of such information and its impact upon the act of consumption.

Several recent publications have addressed the history of body weight. Ina Zweiniger-Bargielowska has looked at ‘the culture of the abdomen’ in the context of British concepts of manliness and racial fitness in the period 1900 to 1939 and Avner Offer attempted a cultural analysis of the rise of obesity in Britain and America since the 1950s.⁴ Their emphasis, and in the related literature, is often on individual bodies.⁵ Sander Gilman’s recent cultural history of obesity is pitched at the societal level but his book is short on historical detail and a comprehensive and conceptually rich treatment in this area is still awaited. Although the present book is a major step towards a road map of histories of the nutritional transition of Europe, there is tremendous potential for further research in this area.

2 For more on obesogenic environments, see Holsten 2008, Cummins and Macintyre 2006, Harrington and Elliott 2009, Nelson and Woods 2009, Smith and Cummins 2009, Townshend and Lake 2009.

3 For a comment on increasing portion sizes, see Nielsen and Popkin 2003.

4 Zweiniger-Bargielowska 2005, Offer 2001. See also Chapter 13 of this volume.

5 See also Schwartz 1986, Stearns 1997.

European Food Consumption in the Twentieth Century

For the first time since its symposia began in Münster in 1989, the International Commission for Research into European Food History (ICREFH) has reduced the time span of its discussions to a single century. Earlier symposia assumed that, given the differing stages of economic development in Europe during the period of industrialization and urbanization, changes in the European diet must have occurred over two to two and a half centuries from the mid-eighteenth century to the present day. The Tenth Symposium held in Oslo, in September 2007, faced a more limited time span by the nature of its theme. To focus on the process by which European countries had progressed from a general state of undernutrition to present-day society in which being overweight is quite widespread, and being obese is less uncommon than it was at any previous time, has occurred in a remarkably short period.

It has not been a steady, even progression. Two world wars not only destroyed liberal bourgeois society but also Europe's economic prosperity. From 1918 to 1922 parts of Europe suffered from famines and deprivation that affected many populations and particularly the children in them. The work of Harriet Chick (1875–1977) in Vienna was most notable.⁶ Famines also marked the end of the Second World War, from the south-west Netherlands during the winter of 1944–5 in the west to Russia in the east.⁷ Recovery from undernutrition was signalled, in food terms, by a surge of compensatory eating – the *fresswelle* – as it was known in German-speaking central Europe. It can also be seen in Western Europe, as in the United Kingdom. Although this recovery became widespread in northern and Western Europe, political control of consumption east of the 'Iron Curtain' meant that progress remained uneven well into the last quarter of the twentieth century. When political control ended, the ensuing 'catch-up' phase, although compressed in time, had consumption targets in the West which were hurriedly emulated during the 1990s. These consumption patterns depended upon a trend which may be summarized as being one in which the domestic production, storage, preservation, preparation and cooking of food was replaced by an extended food chain, in which industrial production of food, its distribution, processing and retailing to the consumer required an increasingly complex number of steps. This limited the sale of raw food materials and replaced them with industrially prepared dishes and whole meals which required only the application of a brief heating stage – generally of only minutes – before being ready to eat. In the postwar years the development of food technology was initially applauded. Magnus Pyke, the eminent food technologist, who wrote the United Kingdom's wartime *Manual of Nutrition*, likened the successes of food science and technology to a 'social

6 Weindling 2007.

7 Lindberg 1946 provides a League of Nations' survey of European energy intakes in World War II.

service' entrusted to 'keep the community alive and in tolerable health'.⁸ By the mid-twentieth century modern food technology meant processing food in a clean and frequently sterile environment, so that insanitary conditions, particularly with regard to animal products such as meat or milk, seemed to be a thing of the past. The Second World War placed considerable demands on food technology and its underlying science. The technical leadership of the United States meant that besides refrigeration and food-canning, dehydration could limit the cargo space required for foods to cross the North Atlantic. An essential characteristic of the postwar food production system was the increased use of energy at every stage in the process and the intensification of production methods required by the growing demand for food as world population numbers expanded. Although these technical advances were widely applauded, some aspects raised concern. During the late 1950s and 1960s there were rumours that food was being affected by chemicals such as antibiotics and that food additives, designed to enhance flavour and handling qualities, were causing problems. The German and Dutch margarine scare of the late 1950s and early 1960s led to the withdrawal of one brand and the payment of compensation.⁹ Other concerns were raised in the 1950s by the possibility that the use of plastic packaging for food might introduce toxins and also that food materials might be contaminated by radioactivity, in particular, the presence of strontium 90. This anxiety was present up to and including the fall out from the Chernobyl nuclear disaster in 1986. The term 'food scare' has been more recently been extended to include nutritional concerns, for instance, general worries about fat content or specific worries such as the presence of trans-fats, and also disease pathogens. Examples of the latter include Bovine Spongiform Encephalopathy (BSE) in cattle and salmonella in eggs – discovered in 1986 and 1988 respectively. Some scholars believe that the modern trend of food scares is so significant that it is representative of what Ulrich Beck has called the 'Risk Society', a new version of modernity in which citizens are fearful and in which trust in scientists and politicians to solve these matters has evaporated.¹⁰

By the 1990s this industrialized food production system was not only widespread but also highly standardized since large food-processing business firms had attained a size and scale of operations that fitted them to be termed 'multinational' or 'transnational' corporations operating in a global market. This did not mean that by the end of the twentieth century a single cuisine or food culture had become dominant throughout the world or even throughout Europe, but it did mean that some branded products in the food and drinks market had achieved iconic status internationally and that a general cultural influence supporting this type of food market in Europe had developed. The strongest characteristic

8 Pyke 1952: vii.

9 *British Food Journal* January 1963: 1, discussing the BBC television programme 'A Suspicion of Poison', broadcast 28 December 1962. Note also the effect of Rachel Carson's *Silent Spring* when it became available in Europe in the mid-1960s.

10 Beck 1986.

of this pressure on consumers was the Americanization of European society. Its influence was strongest in Northern and Western Europe and in industrial and urban social environments, but the cultural determinant of change was the English language: its use as the medium of film and television, its use as the language of advertising, sport, recreation and leisure, its status as the international language at sea and in the air, and its use as the language of commerce and finance. With one or two exceptions, food multinationals originated in the United States, which by its population numbers and the vast extent of its domestic market had faced and overcome the complex problems of standardization and distribution. The multinationals' branded foods and drinks were introduced to Europe by films, television and magazines or by Americans serving as military personnel based in Europe, or forming part of a multitude of international agencies located in major European centres such as London, Paris, Rome or Geneva.

The increasingly refined foods resulting from greater processing which became available during the second half of the twentieth century are easier to digest and, as sold, have less waste. Whilst this is a gain for the consumer, it came as less physical energy was required, as the use of mechanical transport became widespread, as the nature of work became more sedentary and the domestic environment improved as better heating and more labour-saving devices were introduced.

The Concept of Ideal Body Weight

A number of contributors to this volume use terms such as obese or overweight when making reference to body weights. The following note is intended to avoid the repetition which might result should each contributor in turn define the meaning of specialist terms, though some qualification may be necessary where local variations in the usage occur. Despite the concentration on the twentieth century in this book, the concept of an ideal weight arose much earlier in the nineteenth century as a natural progression from the developing interest in statistics. The pre-eminent scholar in the field was the Belgian, Adolphe Quetelet (1796–1874). He published in 1835 a two-volume treatise *Sur l'homme et le développement de ses facultés, ou Essai de physique sociale* [later issued as *A Treatise on Man and the Development of His Faculties, or an Essay on Social Physics*, 1842] from which arose the concept of 'l'homme moyen' or 'average man' characterized by the mean values of measured variables that follow a normal curve of distribution. Quetelet collected data about many variables in the belief that probability influenced human affairs and that it was possible to determine the average physical and intellectual features of a population. His view of the physique of the average man was expressed by the Quetelet Index corresponding to the ratio of the body's weight expressed in kilograms over the square of height expressed in metres i.e. weight/height (kg/m²). During the second half of the twentieth century this became known as the body mass index (BMI) and was used to express the amount of a person's body fat in place of skin fold measurements. The categories which are usually allocated

to BMI are: Underweight = <18.5 ; Normal weight = $18.5\text{--}24.9$; Overweight = $25\text{--}29.9$; Obesity = ≥ 30 .

A slightly simpler anthropometric calculation was suggested by Dr Pierre Paul Broca (1824–80), a French physician interested in anthropology, who attempted to establish an ideal body weight applicable to both men and women. He expressed the ratio of weight to height as being one kilogram for every centimetre of height above one metre. Broca's ideal body weight (IBW) for men was defined as $\text{Weight (kg)} = \text{Height (centimetres)} - 100 \text{ centimetres} + 10 \text{ per cent}$, and for women $\text{Weight (kg)} = \text{Height (centimetres)} - 100 \text{ centimetres} + 15 \text{ per cent}$. Broca's index became popular in France and some central European countries and later formed the basis of American life insurance companies' height and weight tables. Using Broca's Index, being overweight was defined as ideal body weight plus 10 per cent.

International conferences from 1957 onwards have tended to favour the Quetelet index, even though his name has almost disappeared in favour of the term BMI.¹¹ The current European Prospective Investigation into Cancer and Nutrition (EPIC) has suggested that waist circumference, or the waist-to-hip ratio, as indicators of abdominal obesity, may be better predictors of the risk of disease than BMI. Their results of a survey of over 500,000 Europeans in ten countries support the use of waist circumference or waist-to-hip ratio in addition to BMI for the assessment of the risk of death, particularly among persons with a low BMI. Even measurement of the waist alone is significant and may be easier to obtain.¹² It seems that the wealthy fat man, who was somehow symbolic of power in the nineteenth and early twentieth centuries, was a member of a group that suffered from high rates of morbidity and mortality.

Thematic Structure of the Book

The book has been divided into three parts, reflecting the sub-themes discussed at the Symposium:

Part 1: Food Consumption and Consumer Choice

The four chapters in this part contrast the two extremes of Europe in the twentieth century, not only between west and east but also between market economies and state control. At the western extremity, the United Kingdom was the European society most open to the influence of multinationals and Americanization, while in the east, Russia was held back longest from contact with the market-driven products of the international food industry. The other two chapters in this section

11 See Chapter 16: 2.

12 Pischon et al. 2008. The EPIC study is based on 23 centres in ten European countries (Denmark, France, Germany, Greece, Italy, the Netherlands, Norway, Spain, Sweden, and the United Kingdom).

represent the experiences of two parts of the former Hapsburg Empire, the Austrian Tyrol and Yugoslavia's Slovenia, similar in climate, terrain and traditional culture yet separated by Communism from 1946 onwards.¹³

In Chapter 2, Josef Nussbaumer and Andreas Exenberger show that the Austrian Tyrol had experienced hunger from early in the twentieth century until during and after World War II. From the 1950s onwards, the predominantly rural Tyrol was transformed into a principal location for the European leisure industry by hotel building, recreational services and a modern transport network designed for motor vehicles. The contrast in Chapter 3, by Tatiana Voronina, is with the effects of the Soviet political system imposed upon Russia from 1917 to 1989. Civil war caused famine, which returned later in the 1930s on an even vaster scale due to the collectivization of agriculture. When war followed in 1941, the terrible damage and loss of life in Russia meant civilians experienced some 40 years of food rationing and, for many, an even longer period of privation. The Union of Soviet Socialist Republics (USSR) offers a unique case-study of how to change a country's traditional cuisine: massive population movements and institutionalized collective feeding produced a 'Soviet cuisine' in the USSR. In Chapter 4, Maja Godina Golija shows that poverty in Slovenia restricted food availability to domestic production and local markets, which delayed the introduction and acceptance of shop-bought foods. Chapter 5, on Britain after World War II, by Derek Oddy offers a marked contrast with the other countries and regions under consideration: Britain was an advanced urban-industrial country with a rapidly changing food market in the twentieth century, and was recovering from ten years of restricted food consumption under the wartime rationing scheme. This account details the restoration of consumer choices and their modification by health pressures late in the twentieth century.

Part 2: Industrial and Commercial Influences on Food Consumption

The transition from own-grown food production to shop-bought food is a key element in European dietary change in the twentieth century. Five contributions in this section show how foods became identified in consumers' minds and how brands and labelling assured recognition by consumers and established quality standards. Brands and trademarks have long been seen by economists, such as Edith Penrose, as essential tools by which the large corporation might grow, and extend control over its market.¹⁴ Chapter 6 by Hans-Jürgen Teuteberg adds to this dimension the pressure of advertising to fix food manufacturers' products in consumers' minds. In Chapter 7, Gloria Sanz Lafuente gives readers an insight into the food market in Spain under the dictatorship prior to General Franco's death in 1975. Ostracized

13 Under its leader, Josip Broz Tito, Yugoslavia, while a Communist regime, was not part of the Moscow-led Warsaw Pact. Yugoslavia was a founder member of the non-aligned movement.

14 Penrose 1951, 1959.

by the United Nations in 1945 after World War II, relations gradually thawed in the 1950s as Franco's anti-communist views were seen as an asset in the Cold War. Labelling information became important for Spain to establish prestige for its food products as international economic relations opened during the 1950s and 1960s. Gun Roos, in Chapter 8, discusses the formation of nutritional policy in Norway, with respect to food labelling. Early in the twentieth century opposition from agricultural, trade and industrial interests prevented any government control of foodstuffs; this delayed legislation until the 1930s. Interest in food labelling in Norway is a very recent reflection of health concerns though, despite increasing individual empowerment, passive consumer opinion has yielded more power to food manufacturers. Alain Drouard in Chapter 9 distinguishes France as one country in Europe producing both cane and beet sugar but concentrates more on the beet sugar production, particularly under the Common Market, when marked plant modernization leading to semi-automation of production facilities took place. As the market for sugar in France approached saturation, French producers used research and information supplied by producers' organizations to defend their product against links with weight gain and dental caries and resist the use of artificial sweeteners. The final chapter in Part 2, Chapter 10 by Unni Kjærnes and Runar Døving, starts from the premise that governments can and should control their populations' food choices. Norway's prescriptive moral values produced the *matpakke*, or packed lunch, the Oslo breakfast and, in this chapter, the 'Sigdal breakfast'. In doing so, Norway's social democrat governments separated their people from other Scandinavian countries. However, there were limits to their powers as the authors show in relation to fat and sugar.

Part 3: Social and Medical Influences

The five chapters in this section have remarkably diverse approaches to the question of how social and medical interests have affected food consumption. Jürgen Schmidt seeks, in Chapter 11, to evaluate how nutrition theory was presented in the popular press in Germany and to assess its influence. Here, for the first time, is the modern body image presented as ideal, which gives rise to the contradiction of 'proper' nutrition as seen by the state and the desires of individual. In France, as Julia Csergo shows in Chapter 12, medical discourse in the nineteenth century took a different line from the German-led study of experimental physiology which influenced the USA and Great Britain. French medical opinions frequently sought to explain weight gain by the contribution of non-nutritional factors. When France began to take note of German health policy and observed the connection between nutrition and various illnesses, criticism of industrial catering for the working classes was accompanied in the interwar years by a multitude of diets

for the better-off, offered by medical ‘experts’.¹⁵ This is matched in Chapter 13 by Ina Zweiniger-Bargielowska identifying a not very different slimming culture which developed in Great Britain at a similar time. Weight reduction was driven by fashion, especially in the case of young women. The slimming movement played into the hands of ‘faddists’ since Britain lacked an overall nutrition policy. Chapters 14 and 15 deal with central Europe during the Cold War: Czechoslovakia was seen as the ‘fattest nation’ in Europe by its popular press and in Chapter 14 Martin Franc notes the contrasting demands placed upon its people by the state, its health reformers and fashion images. In fact, in a previous ICREFH volume he has shown that arguments for and against a Czech national cuisine led to contradictions in the state’s aims, though then, as in this account, supply difficulties frustrated the authorities’ plans.¹⁶ The final study, by Ulrike Thoms, also looks behind the Iron Curtain into East Germany, contrasting its nutrition with that of West Germany from 1945 until reunification. Health policies in the divided Germany reflected the different regimes in the light of the extent and treatment of diabetes.

This book illustrates a major economic and social trend in Europe in the twentieth century which has great significance for the health of its contemporary population. While more research is required, for instance, on countries not included as case studies in this volume, a new sub-theme of European food history has been opened up by this Symposium. Its significance lies in the need for each country to gear its anti-obesity policies to its own specific historical dynamics.

References

- Beck, U. *Risikogesellschaft – Auf dem Weg in eine andere Moderne*, 1986, later published as *Risk Society: Towards a New Modernity*, London, 1992.
- Carson, R. *Silent Spring*, Boston, 1962.
- Cummins, S. and Macintyre, S. ‘Food Environments and Obesity: Neighbourhood or Nation?’ *International Journal of Epidemiology* 35, 2006, 100–04.
- Harrington, D.W. and Elliott, S.J. ‘Weighing the Importance of Neighbourhood: a Multilevel Exploration of the Determinants of Overweight and Obesity’, *Social Science and Medicine* forthcoming, 2009.
- Holsten, J.E. ‘Obesity and the Community Food Environment: a Systematic Review’, *Public Health Nutrition* 12, 2009, 397–405.
- James, W.P.T. ‘The Fundamental Drivers of the Obesity Epidemic’, *Obesity Reviews* 9, supplement 1, 2007, 6–13.

15 As both Chapters 11 and 12 have been written by historians, readers should note that they have set their data in the context of the nutritional knowledge of the day. Contemporary recommended nutrient intakes may have changed significantly from some of those quoted. Recommended protein intakes, for example, underwent marked reductions during the course of the twentieth century.

16 See ICREFH VIII: Chapter 20.

- Lindberg, J. *Food, Famine and Relief 1940–46*, Geneva, 1946.
- Monda, K., Gordon-Larsen, P., Stevens, S. and Popkin, B.M. ‘China’s Transition: the Effect of Rapid Urbanization on Adult Occupational Physical Activity’, *Social Science & Medicine* 64, 2007, 858–70.
- Nelson, N.M. and Woods, C.B. ‘Obesogenic Environments: Are Neighbourhood Environments that Limit Physical Activity Obesogenic?’ *Health & Place* forthcoming, 2009.
- Nielsen, S.J. and Popkin, B.M. ‘Patterns and Trends in Food Portion Sizes, 1977–1998’, *Journal of the American Medical Association* 289, 2003, 450–53.
- Offer, A. ‘Body Weight and Self-Control in the United States and Britain since the 1950s’, *Social History of Medicine* 14, 2001, 79–106.
- Penrose, E.T. *The Economics of the International Patent System*, Baltimore, 1951.
- Penrose, E.T. *The Theory of the Growth of the Firm*, New York, 1959.
- Pischon, T. et al. ‘General and Abdominal Adiposity and Risk of Death in Europe’, *New England Journal of Medicine* 359, 2008, 2105–20.
- Popkin, B.M. ‘Urbanization, Lifestyle Changes and the Nutrition Transition’, *World Development* 27, 1999, 1905–16.
- Popkin, B.M. and Gordon-Larsen, P. ‘The Nutrition Transition: Worldwide Obesity Dynamics and their Determinants’, *International Journal of Obesity* 28, 2004, S2–S9.
- Pyke, M.A. *Townsman’s Food*, London, 1952.
- Schwarz, H. *Never Satisfied: a Cultural History of Diets, Fantasies and Fat*, New York, 1986.
- Smith, D. and Cummins, S. ‘Obese Cities: How Our Environment Shapes Overweight’, *Geography Compass* 3, 2009, 518–35.
- Stearns, P.N. *Fat History: Bodies and Beauty in the Modern West*, New York, 1997.
- Townshend, T. and Lake, A.A. ‘Obesogenic Urban Form: Theory, Policy and Practice’, *Health & Place* forthcoming, 2009.
- Weindling, P. ‘From Sentiment to Science: Children’s Relief Organizations and the Problem of Malnutrition in Inter-War Europe’, *Disasters* 18, 2007, 203–12.
- Zweiniger-Bargielowska, I. ‘The Culture of the Abdomen: Obesity and Reducing in Britain, circa 1900–1939’, *Journal of British Studies* 44, 2005, 239–73.