

Patterned Ground

Entanglements of Nature and Culture

Edited by Stephan Harrison, Steve Pile and Nigel Thrift

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Pipes

Stephen J. Collier

A visitor to cities in post-Soviet Russia cannot but be struck by the obtrusive presence of pipes. Thick silver heating pipes up to a metre in diameter emerge suddenly from the ground, in the midst of a park or walkway, often two in parallel. Heating pipes and slim yellow gas pipes may run discreetly along fences or buildings, but then leap over driveways and roads, the heating pipes often draped with shreds of insulation or metal wrapping. Hot water (or steam) flows from massive centralized boilers through these pipes, which pass indoors through bathrooms and kitchens on their way to upper storeys and wind through radiators that lack control mechanisms. Residents can adjust indoor temperature only by casting windows open or huddling in the kitchen with the stove-top and oven turned on.

The impositions of indoor temperature and the omnipresence of pipes in the urban landscape can stand for the broader intransigence of pipes amid post-Soviet reform in Russia. Whether through urban services such as heat or through national gas production and distribution systems, pipes materially link geology, geography, industrial activity, human settlements, valuable resources and incredibly expensive but vital services to the Russian population in a network of common fate. Thus, if one wants to understand the human, political, economic and natural geography of Russia today – or, for that matter, the political economy of post-socialist reform – pipes are not a bad place to start.

The system of pipes in Russia was produced by the distinctive Soviet projects of economic coordination and social regulation. Soviet planners sought to organize rational adjust-

ments among industrial firms, workers and the distribution of resources required to satisfy daily needs. The integration of national space through infrastructure and utility networks was an essential part of this project.

While there was some integration of national space (through railways and electricity) during the late Tsarist and early Soviet periods, daily life remained little touched. In the first Soviet decades, urban infrastructure was virtually absent in new industrial sites. Significant gains in balanced urbanization came only in the post-Second World War period. Universal social services (health and education) and protections (pensions) were instituted. Ramshackle houses and barracks were replaced by concrete apartment blocks, which were plugged universally and uniformly into national utility infrastructures. No system illustrates more vividly the new spatial and material relationships among infrastructure, human populations and natural resources than that of heat.

Soviet heating systems incorporated two great networks of pipes, both built largely in the last three decades of the Soviet period. First, a national network of gas pipes linked virtually all elements of industry and most urban heating systems with newly exploited Siberian gas deposits, as gas became the most important primary energy source in Russia and provided a critical source of hard currency from exports. Second, heat pipes plugged the apartment blocks that housed most Soviet citizens into massive centralized boiler complexes. The largest of these, the co-generating heat / electric complexes, each serve millions of residents in big cities, while entire small cities are served by single heat-only complexes.

The heating 'apparatus' – not just the material structure, but the entire biological, geological, technical and administrative ensemble – served to 'hard wire' spatial and



3 Heating pipes in Moscow.

institutional relationships between the natural and human worlds, linking a planned distribution of human settlements, climatic conditions (cold), natural resources (gas in remote deposits) and facilities for the production of a basic service (heat). The exigencies of climate and the disposition of natural resources were calibrated in human terms through technical norms that defined the heat requirements – and thus resource requirements – of human beings in given climatic conditions. Further, as the heating apparatus incorporated more and more of the Soviet population, humanism and heat were ever more tightly linked in the moral project of the Soviet state. To indulge an anthropological conceit: in Soviet Russia *anthropos*, as a subject of need, an object of regulation and a bearer of dignity, was a warm body in a cold country.

At one level, these developments were typical both inside and outside the socialist world. Networks of pipes, wires, cables and roads fixed interactions among human settle-

ments, climate, natural resources and physical geography in many twentieth-century projects of national social and economic regulation.¹ But the Russian case was distinct. Nowhere else (not even in the rest of the former socialist bloc) was such a large percentage of a national population linked to a service as vital and as centralized as heat in Russia. Nowhere else did utility networks inscribe a distribution of population and production characterized by such a remarkable preponderance of small and geographically dispersed industrial cities. And nowhere else were these networks so rigidly fixed by an inflexible infrastructure that contained no mechanism for differentiated delivery or user control.

The fixities of the heating apparatus followed logically from the unbending certainties of Soviet social and economic regulation. For post-socialist reformers, however, these certainties and fixities appear as problematic sources of allocative inefficiency. In neo-liberal times, questions are raised that were foreign to Soviet administration. Can the State still treat heat as a social *sine qua non* – delivered without reference to cost – in what is now a quite poor country? Are there not better ways to manage Russia's unique gas resources (the domestic price of which remains a fraction of European prices) than to provide effective cross-subsidies to what have become non-viable cities and non-viable industries? Should inhabitants of such cities move somewhere richer . . . or warmer? Reformers insist, in any case, that the reassuring regularities of a system oriented to normatively defined 'need' must be balanced with the imperatives of allocative efficiency and fiscal balance.

Consequently, reform of the heating apparatus emerged as a crucial element in programmes for 'structural adjustment' in post-Soviet Russia.² Reformers propose the

creation of a real price mechanism by deregulating tariffs and permitting choice, calculative action and competition at every level in the system: the production and delivery of gas, the production and delivery of heat, and the consumption of heat by end-users. They propose, in short, that the heating apparatus be transformed by automatic adjustments resulting from the formally free action of producers, users and administrators. Normatively defined 'need' would be replaced by 'effective demand' as a central allocative mechanism.

These programmes for reform seem splendid in early summer, or during an economic boom, when cost recovery can rise with personal income and the burden of delivering heat seems less overwhelming. But the material characteristics of the heating apparatus itself, and its intimate entanglement with human needs, mean that in late autumn – or when terms of trade shift – reforms suddenly seem problematic. Because the system is technologically collective – it is impossible to regulate individual use or shut off individual households – the 'pain' of payment discipline is felt collectively, and is thus politically impossible to impose. And the stakes are very high. A shut-off can result (and has indeed resulted) in the destruction of much of a city heating system in 24 hours on a cold winter day. Because heating systems require massive commitments of resources, a transfer of the cost burden to 'users' – in the name of rationalization, fiscal prudence, individual discipline – might undermine the viability of entire cities, particularly the ubiquitous small, dispersed, mono-industrial cities in which 30 million Russians live. Because Russia is *really* cold, the policy on heat is a matter of life and death. As one observer put it, in other countries turning off heat 'might be

unpleasant. But in Russia it could be [and has been] fatal'.³ Finally, because the State can tap domestic energy supplies, it is extraordinarily difficult to forego the material possibility of providing heat. And indeed, despite the poverty of the population and despite the endemic failure of local governments to pay heat producers, shut-offs have been a rare exception.

The continued embeddedness of human need fulfilment in the concrete, inflexible materiality of pipes, boilers and apartment blocks helps us to understand the stuckness of resources and human beings in post-Soviet Russia around the heating apparatus. Thus far, in any case, there has been no great outflow of population from poorer areas, and a large proportion of national resources remains tied up with the spatial pattern of Soviet modernity. Structural adjustment has been forestalled, for now at least, by intransigent infrastructure.

Cities

Eric Sheppard and William S. Lynn

When we think of cosmopolitan cities, we think of places like London or Toronto. Contemporary globalization has opened up cities of all sizes to new and rapidly changing influences from the world at large, including a profound diversification of city populations. Urban landscapes are being transformed by their diversifying populations, whether temporarily, as when London's Caribbean population celebrates their distinct heritage in Notting Hill during Carnival week, or more permanently, as diverse groups of residents in cities such as Toronto seek to express and reinforce their

Deleuze, avec Claire Parner' (2000), http://www.langlab.wayne.edu/Romance/FreD_G/ABC1.html.

- 71 Kwa, 'Romantic and Baroque Conceptions', pp. 22–52.
- 72 C. J. Stivale, 'Summary', p. 2.
- 73 D. W. Smith, 'Deleuze's Theory of Sensation: Overcoming the Kantian Duality', in *Deleuze: A Critical Reader*, ed. P. Patton (Oxford, 1996), pp. 29–56. Quote from p. 40.
- 74 Smith, 'Deleuze's Theory', quote from p. 43.
- 75 B. Massumi, 'The Autonomy of Affect', in *Observing Complexity: Systems Theory and Postmodernity*, ed. W. Rasch and C. Wolfe (Minneapolis, 2000), pp. 273–97. Quote from p. 288.
- 76 And they seem to do this in some profusion. So, for example, ecosystems exhibit 'the baroque of nature' (Margalef, cited in R. Solé, R. Goodwin and B. Goodwin, *Signs of Life: How Complexity Pervades Biology*, New York, 2000, p. 179) in that they contain many more species than would ever be necessary if biological efficiency were the only criterion for their organization.
- 77 Here, we are registering our pleasure and indeed surprise at the 'pre-disciplinary' (rather than 'post-disciplinary') feel to this project, despite the 'disciplinary' divides that would normally keep the pieces that this book contains well apart!
- 78 G. Deleuze, *Spinoza: Practical Philosophy* (1970) (San Francisco, 1988), p. 124.
- 79 R. E. Kohler, *Landscape and Landscapes: Exploring The Lab-Field Border in Biology* (Chicago, 2002).

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STEPHEN J. COLLIER: 'Pipes'

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- 3 Anna Raff, 'Gazprom Follows Path Laid by the West', *Moscow Times*, 26 July 2001.

ERIC SHEPPARD AND WILLIAM S. LYNN: 'Cities'

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LAURA CAMERON: 'Ecosystems'

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- 2 A. G. Tansley, *The British Islands and their Vegetation* (Cambridge, 1939), p. vi.
- 3 A. G. Tansley, 'The Use and Abuse of Vegetational Concepts and Terms', *Ecology*, xvi (16 July 1935), p. 303.

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- , 'Tansley's Psychoanalytic Network: An Episode out of the Early History of Psychoanalysis in England', *Psychoanalysis and History*, II/2 (2000), pp. 189–256

KEITH RICHARDS: 'Rivers'

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- 2 *Ibid.* Quote is from p. 71.
- 3 P. A. Shaw, 'Late Quaternary Landforms and Environmental Change in Northwest Botswana: The Evidence of Lake Ngami and the Mababe Depression', *Transactions of the Institute of British Geographers*, x (1985), pp. 333–46.
- 4 International Court of Justice, *Kasikili-Sedudu Island* (Botswana / Namibia, 1996–9). <http://www.icjij.org/icjwww/idocket/ibona/ibonaframe.htm>

MARTIN KIRKBRIDE: 'Scree'

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- 2 C. K. Ballantyne and C. Harris, *The Periglaciation of Great Britain* (Cambridge, 1994), p. 220.
- 3 *Ibid.*, p. 219.

Contributors

KAY ANDERSON is Professor of Geography at Durham University, where she teaches courses on race, colonialism, culture and nature. She is the author of books, articles and chapters on these subjects, and co-editor of the *Handbook of Cultural Geography* (2002) and the journal *Progress in Human Geography*.

STEVE BAKER is Reader in Contemporary Visual Culture at the University of Central Lancashire. He is the author of *The Postmodern Animal* (2000) and of *Picturing the Beast: Animals, Identity and Representation* (2nd edn, 2001), and is on the Board of Editors of *Society and Animals*.

VIC BAKER is Regents' Professor and Head of the Department of Hydrology and Water Resources, Professor of Geosciences and Professor of Planetary Sciences at the University of Arizona. His varied research interests include fluvial geomorphology, palaeohydrology and planetary geomorphology. His particular research focus is on flood processes.

TREVOR BARNES is a Professor at the Department of Geography, University of British Columbia. His research interests are in economic geography, and, most recently, in the history of that discipline. He is the co-editor of *A Companion to Economic Geography* (2000), with Eric Sheppard.

ANDREW BARRY is Senior Lecturer in Sociology, Goldsmiths' College, University of London, and author of *Political Machines: Governing a Technological Society* (2001). He comes from a family of Somerset farmers, but now lives near an agrochemical research laboratory on the outskirts of Cambridge.

MICHAEL MAYERFELD BELL is Associate Professor of Rural Sociology at the University of Wisconsin-Madison and a part-time composer of songs, fiddle tunes and

classical music. He is particularly interested in dialogue, democracy and un-finalizability in social, ecological and musical life. His most recent book is *Farming for Us All* (2004).

TED BENTON is Professor of Sociology at the University of Essex, where he teaches social theory, philosophy of social science and environmental sociology. Recent books include *The Greening of Marxism* (1996) and, with Ian Craib, *Philosophy of Social Science* (2001). He is an active field naturalist and wildlife photographer.

STEPHEN CAIRNS writes on architecture, urbanism and post-colonial theory, and has particular interests in Southeast Asia. He teaches in the Department of Architecture at the University of Edinburgh.

LAURA CAMERON is Canada Research Chair in Historical Geographies of Nature at Queen's University, Kingston, Ontario. She is the author of *Openings: A Meditation on History, Method and Sumas Lake* (1997). Much of her work explores local and disciplinary studies of natures / cultures, particularly in the context of British and Canadian ecology and conservation.

SARAH G. CANT is a Lecturer in Human Geography at the University of Wales, Aberystwyth. She was a graduate student in the Department of Geography at Royal Holloway, University of London. Her doctoral thesis examines cultural geographies of cave exploration and speleology in Britain during the twentieth century.

NIGEL CLARK lectures in Social Science at the Open University, Milton Keynes. His recent publications, 'The Demon-Seed' (*Theory, Culture and Society*, 2002) and 'Turbulent Prospects' (in *Shaping the City*, ed. Tim Hall and Malcolm Miles, 2003), explore the implications of the dynamic and unpredictable aspects of the natural world for both environmentalism and social thought.

STEPHEN J. COLLIER is Core Faculty at the Graduate Program for International Affairs at the New School University. He is co-editor, with Aikwa Ong, of *Global Assemblages: Technology, Politics and Ethics as Anthropological Problems* (forthcoming), and author of a book on post-Soviet Russia, *Post-Soviet Social: City Building in Neoclassical Times* (forthcoming).

IAN COOK is a Lecturer in Human Geography at the University of Birmingham. He traced papayas from UK supermarkets to Jamaican farms. But he promised not to name the fruit. Farmers feared consumer boycotts. That was ten years ago. Now, you can't find Jamaican papayas in UK supermarkets. So, he can write.

DENIS COSGROVE is Alexander von Humboldt Professor of Geography at UCLA. He has written and edited books and scholarly papers in cultural geography, notably on landscape, historically and, today, in Italy, Britain and America. His most recent book, *Apollo's Eye* (2001), explores the history of visualizing the globe.

MIKE CRANG grew up on a farm but wanted a job with holidays and a pension, so he left Devon and became a Lecturer in Geography at the University of Durham. He now produces papers and talks about things (including *Thinking Space*, co-edited with Nigel Thrift, 2000).

ANNA R. DAVIES is a Lecturer in Environmental Geography at Trinity College, University of Dublin, Ireland. She has research interests in the broad field of environmental policy and politics and is currently examining the role of transnational environmental networks in relation to environmental governance.

GAIL DAVIES is a cultural geographer interested in the hybrid spaces of science, nature and the media. She is currently working on a public consultation on options for organ transplantation, including xenotransplantation. Previous research has looked at the contested wildlife value of brownfield sites, and the development of natural history film-making.

ALASTAIR DAWSON is Professor of Quaternary Science in the Division of Geography at Coventry University. His research interests lie in palaeoclimatology and in the geomorphology of sea level change. He is the author of *Ice Age Earth* (1991).

JOHN DEARING is Professor of Physical Geography at the University of Liverpool. His main research interests lie in the use of environmental magnetism on lake sediments to reconstruct Holocene environmental change. He is

leader of the IGBP-PAGES Focus 5 programme: Past ecosystem processes and human-environment interactions.

DYDIA DELYSER is an Assistant Professor of Geography at Louisiana State University. A former resident of Bodie, California, she has published on ghost towns in journals such as the *Annals of the Association of American Geographers* and the *Geographical Review*. She is currently at work on a book about ghost towns.

RICHARD DENNIS teaches historical geography at University College London. He has published extensively on housing in nineteenth- and early twentieth-century cities, and is currently working on a book on cities and modernity, incorporating material on London, New York and Toronto.

JULIAN A. DOWDESWELL is Director of the Scott Polar Research Institute and Professor of Physical Geography in the University of Cambridge. Julian is a glaciologist, whose research interests include investigating the form and flow of glaciers and ice caps and their response to climate change, and the links between former ice sheets and the marine geological record.

FELIX DRIVER is Professor of Human Geography at Royal Holloway, University of London, and the author of *Geography Militant: Cultures of Exploration and Empire* (2001). His current research is concerned with British visions of the tropical world. He recently worked on a collaborative art project at Royal Holloway entitled *Visualising Geography*.

NANCY DUNCAN, an affiliated Lecturer in the Department of Geography, University of Cambridge, is a cultural geographer with interests in social and political theory. She is a co-author of a monograph on the politics of a suburban landscape and editor of a collection of articles on gender and sexuality in the production of space.

PHIL DUNHAM is a Senior Lecturer in Geography at Coventry University. His principal research interests are in the fields of rural economic change and local economic development, but he has also published articles on the philosophy of geography using ideas derived from quantum theory.

NICK FYFE is Reader in Human Geography at the University of Dundee. His research interests include the geographies of crime and criminal justice and the voluntary sector and volunteering. He is author of *Protecting Intimidated Witnesses* (2001), editor of *Images*