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DICTIONARY OF Human Geography

NOEL CASTREE, ROB KITCHIN & ALISDAIR ROGERS

A Dictionary of

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A Dictionary of
Human Geography

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Many entries in this dictionary have recommended web links. When you see the above symbol at the end of an entry go to the dictionary's web page at http://www.oup.com/uk/reference/resources/humangeography, click on **Web links** in the Resources section and locate the entry in the alphabetical list, then click straight through to the relevant websites.

Preface

The study of geography can be traced back to ancient Greece. It became a formal school and university discipline in the late 19th century and since then it has developed and diversified both conceptually and methodologically. In this volume we provide concise, straightforward definitions of the terms, concepts, and methods that comprise human geography's contemporary lexicon. It is designed to be used by students of the subject at all levels, and by their teachers. But it's also intended to appeal to others who, for whatever reason, are curious about human geography and how it seeks to make sense of the extraordinary world we live in. It is not an encyclopedia, but it offers more breadth and depth concerning the large and diverse body of knowledge of human geography than one finds in most dictionaries of geography, which try to cover both the human and physical aspects of the subject.

In the following pages we have sought to present the debates and insights of our peers in the world of university geography, even as we have included entries on subjects more commonly associated with a geographical reference work. Consequently, readers will find entries for Afghanistan, Mecca, and Tokyo alongside entries for terms such as placelessness, spatial autocorrelation, and Tobler's first law of geography. We have also included other kinds of entry that will, we hope, be of interest. For instance, there are biographical entries about the intellectual contributions of leading human geographers past and present, entries about key books that have influenced geographical thought, and key events, political agreements, and organizations that have shaped the world and the discipline of geography. In the appendices at the back of the book you will find lists of peer-review human geography journals, geographical societies, and human geographers whose research has been recognized as outstanding by their peers, plus maps that show the location of place entries. We have been selective in our coverage of places, countries, events, organizations, and agreements, only including entries on those that, in our view, were or are iconic or important in economic, cultural, or political terms. Some readers may wish for a larger and wider selection, but this book is not intended to be a gazetteer. Many entries direct readers to websites where they can learn more. In other cases, further reading and references are listed at the end of many entries. The majority of entries contain cross-references to other ones, allowing readers to follow their own paths through the dictionary. We hope these cross-references allow you to widen and deepen your understanding of human geography—even if your initial intention was to get clued-up on just one or two of our 2100 headwords. These cross-references are signalled by an asterisk (for example, *planning), or by '*see*', '*see also*' or '*compare*', followed by the headword (for example, *see* PLANNING). Finally, not a few entries offer considerable detail on the subjects in question because of their importance or complexity.

Just a few minutes dipping into this work will reveal that human geography is porous in two senses. First, its subject matter intersects with virtually every social science and humanities subject, from anthropology to philosophy to sociology, and human geographers are engaged in routine exchanges with their academic neighbours. In each case we try to show their relevance to human geography and how our understanding of them benefits from taking a geographical perspective. Secondly, human geography is in many senses an everyday phenomenon. Many of its key concerns are daily news—for instance, urbanization, deindustrialization, and international migration. Likewise, its concepts are everyday ones, even if professional geographers utilize them in ways that lay actors might

not readily recognize (for example, landscape, nature, and place). These aspects make a dictionary of human geography relevant to many readers in ways that, say, dictionaries of physics or ancient history are not. We hope readers who study the subject formally and those who hold a more general interest will better understand their own human geographies by perusing the entries.

We wish to thank Joanna Harris, Vicki Donald, and Judith Wilson of Oxford University Press for helping us initiate this project. Joanna remained especially patient as deadlines were renegotiated. Nick Scarle at Manchester University did an exemplary job designing the book's visual aids and we thank him warmly.

Noel Castree, Rob Kitchin, and Alisdair Rogers
February 2013

Contents

AAG *See* ASSOCIATION OF AMERICAN GEOGRAPHERS.

Abler, Ronald F. (1939–) An influential American human geographer who co-authored a pioneering text on the *spatial science approach (*Spatial Organization: The Geographer's View of the World*, 1971). He went on to conduct research into the practical effects of telecommunications' ability to collapse time–space distances. He also examined the effects on people's perceptions of terrestrial space and sense of time. Abler took on important professional leadership roles later in his career, notably in the *Association of American Geographers and the *International Geographical Union.

aboriginal The first or earliest known inhabitants of a *place or *region. Aboriginals are often called *indigenous people. Today, their descendants can be found in Australia, New Zealand, the Pacific Islands, Indonesia, Africa, the Arctic Circle, and in North and Latin America. Often cast as primitive or 'backwards', with in-migration through colonization, aboriginal societies were systematically persecuted and marginalized. Recent geographical investigations, overlapping with the research of anthropologists, have sought to understand these societies in their own terms, to document the ways in which they have (and continue to be) marginalized by settlers, and to chart their struggles for self-determination. *See also* RACE; RACISM.

absolute space *See* SPACE.

abstraction The act or process of isolating a phenomenon and removing it from its real context of existence. It has a mental and a material aspect. The former involves carving the world up into categories or units (*see* ANALYSIS) in order to focus on some aspects perceived to be interesting or important at the expense of others. *Critical realism pays scrupulous attention to abstraction in geographical research. The latter involves the physical delimitation and extraction of something from its social or biogeochemical environment. *Marxist geography has scrutinized how *capitalism entails the 'violent abstraction' of things in the interests of making money from their sale as commodities.

academic capitalism A description of universities, academics, and academic knowledge that suggests these are increasingly being driven by commercial values and goals. The term was popularized by American education analysts Slaughter and Rhoades. It challenges the long-held belief that higher education is—or should be—a public good, not a commodity for purely private purchase and benefit. In human geography it is especially associated with discussions about the pedagogic and wider role of *critical human geography.

Further reading Slaughter, S. and Rhoades, G. (2004), *Academic Capitalism and the New Economy.*

accessibility The ease with which goods and services in one location can be accessed by people living in another location. Transportation and communications media are key infrastructures in this regard, with availability, distance, time, and cost being principal

constraints, along with structural barriers such as age, gender, disability, and class. Access to goods and services is often viewed as a key measure of social equity—that is, the greater access one has, the better off one is.

accumulation The process of creating, controlling, moving, and using surplus economic *capital. According to Marxist geographers, who have inquired into the way that accumulation is organized across space and through time, accumulation of a capitalist sort has come to dominate over all others. It involves the production, distribution, sale, and disposal of myriad commodities for the single aim of accumulating more wealth at the end of the process than was laid out by capitalists at the start. The most 'liquid' form in which economic capital can be accumulated is as *money (*see* FINANCE CAPITAL). In the incessant search for sources of new and greater profitability, capitalists can deploy their capital in new locations, in new ventures, and in major new infrastructural investments (perhaps overseas). The financial services industry is usually at the heart of this 'capital switching' process because it can concentrate capital surpluses from multiple investors (*see* FINANCIAL MARKETS). This industry is also in the business of capital accumulation itself, but in a way that is parasitic upon accumulation in the so-called 'real economy'. Marxist geographer David *Harvey argues that early 21st-century *capitalism has relied heavily on 'accumulation by dispossession'. This is a form of accumulation that, unlike its 'classical' counterpart, does not rely on exploiting wage workers so that they are paid less than the value of the commodities they collectively make. Instead, it relies on privatizing the gains of enclosing what were previously open access, common, or communal resources (such as the atmosphere, public forests, or Antarctica).

Further reading Harvey, D. (2003), *The New Imperialism.*

accumulation by dispossession *See* ACCUMULATION; HARVEY, DAVID.

action research An approach that seeks to apply the research tools and knowledge of academia to the practical resolution of social and environmental problems. In addition to producing knowledge about the world, action research explicitly seeks to enact change by addressing specific issues facing people and places. In contrast to *applied geography, wherein academia seeks to aid the state in drafting and evaluating policy or businesses to more effectively compete locally and globally, action research is community focused, working with local stakeholders to achieve outcomes to the benefit of that community. However, unlike *activist geography, action research is not necessarily underpinned by a radical politics, but is guided by a pragmatism to address a particular issue, whether that be helping to more effectively conserve and manage water resources or to make a built environment more accessible to all citizens. This is not to say that action research is ideologically neutral; indeed, as detailed by Ernest Stringer, it is underpinned by a set of broad social values: it seeks to be democratic, equitable, liberating, and life enhancing. It seeks to enact these values and address problems by bringing together all stakeholders, which can include community groups, *non-governmental organizations (NGOs), and state bodies, into a process of investigation. These stakeholders engage in a collectivized process of generating and interpreting data in order to attempt to come to a common understanding of the issue and an agreed plan of resolution. This solution is then enacted and its outcome evaluated. The role of the researcher in this process is one of facilitator, bringing people together, mediating debate, communicating knowledge and best practice elsewhere, and explaining appropriate theory and methodologies, and how to utilize them. In geography, action research has often been framed as *participatory action research. *See also* ADVOCACY GEOGRAPHY.

Further reading Pain, R. (2003), 'Social geography: on action oriented research'. *Progress in Human Geography* 27, 649–57.

Stringer, E. (1999), *Action Research.*

activism The actions of a group of citizens, usually volunteers, who work together to try and redress what they consider to be an unfair or unjust situation. Their activities include campaigning (such as letter writing, marching, and picketing), peaceful marching, civil disobedience, sabotage, or other militant forms of protest. Although usually local in scale, activism can occur at national and supra-national levels, as in the *anti-globalization movement. *See also* ACTIVIST GEOGRAPHY; ADVOCACY GEOGRAPHY.

activist geography The use of a geographer's academic position and expertise in order to influence events beyond the university world. Some geographers not only study *activism, but are activists themselves. While their activism may have no direct relation to their professional work, in many cases the link is organic. Such activist geographers seek to challenge the status quo not only through their research and teaching, but also by using their expertise to effect social, economic, political, cultural, or environmental change in the world. Such practices are ideologically driven and break with traditional notions of the academic as a neutral, objective, and passive scientist. *See also* ADVOCACY GEOGRAPHY; ACTION RESEARCH; OBJECTIVITY.

Further reading Blomley, N. K. (1994), 'Activism and the academy'. *Environment and Planning D: Society and Space* 12: 383–5.

Actor-Network Theory (ANT) An approach to understanding stability and change in the world that situates human *agency in wider networks of non-human actors and materials. From the late 19th century many came to believe that the world of humans was different in kind from the world of non-human entities and processes. This presumed ontological cleavage was reflected in the different subject matter and methods of the social sciences and humanities as compared to the physical, medical, engineering, mathematical, computational, and environmental sciences. In academic geography after 1945 this 'two-worlds' perspective was reflected in the growing schism between human and physical geography. However, in the early 1990s the *Science and Technology Studies scholar Bruno *Latour argued that this perspective was flawed. While humans possess unique attributes and are able to construct their own linguistic, symbolic, and physical worlds, Latour insisted they are also continually dependent on a myriad of non-human 'actants' for their daily survival and for new ventures. Such actants range from the mundane (e.g. a door) to the special (e.g. nuclear rods in a power station). While humans may marshall these actants into various networks—short and long, temporary and enduring—they cannot do without these actants. Latour and like-minded analysts eschew the dualistic language of 'nature' and 'society', 'people' and 'environment', and so on. In British human geography, Actor-Network Theory (ANT) has inspired a large body of research into human relations with non-human entities—be they technical, emotional, aesthetic, auditory, aural, or tactile. Sarah Whatmore's monograph *Hybrid Geographies* (2001) was a pioneering contribution. Physical geographers have been less enamoured and the long-standing division between human and physical geographers has not been significantly reduced because of ANT's prominence in contemporary geography. Meanwhile, Nigel Clark's book *Inhuman Nature* (2011) argues that ANT is too fixated on placid, malleable, or close-at-hand entities, forgetting that much of *nature threatens to overwhelm and overpower humanity. As such, ANT might—ironically—carry its own traces of *anthropocentrism. *See also* ASSEMBLAGE; HYBRIDITY.

Further reading Latour, B. (1993), *We Have Never Been Modern.*

advocacy geography A form of *activist geography and *participatory action research wherein a geographer becomes an advocate for a disadvantaged group or community, working on its behalf to address issues of social and spatial *justice. The approach was pioneered by William *Bunge and co-workers in the late 1960s in their

*Detroit Geographical Expedition and Institute where they worked with deprived communities to campaign on issues of poverty and state provision of services. *See also* ACTIVISM.

aerial photography The photographing of the Earth from above the ground and from within the atmosphere. The camera is usually attached to an aeroplane, helicopter, or balloon, rather than a ground-based structure. Photographs can either be vertical (shot from directly overhead), producing a map-like image, or taken from an oblique angle. The first aerial photographs were taken from a balloon in the mid-19th century, but grew enormously in use during the First World War for identifying enemy positions. Subsequently, aerial photographs became important for surveying vast tracts of unmapped land for cartographic purposes. They are an important source of information for a range of activities including photogrammetric surveys, environmental monitoring, and general surveillance. *See also* PHOTOGRAPHY; PHOTOGRAPHY AND GEOGRAPHY; REMOTE SENSING.

affect **1.** Conventionally, the influence of one thing on another.

2. In psychology, the generation of instinctive feelings or emotions in relation to some external stimulus.

3. In philosophical discourse and in contemporary human geography, a process in which the immaterial (dreams, intuition, imagination, precognitive thoughts) prestructures responses to physical experiences and social discourses. More generally, affect refers to the wide range of registers—beyond sight, image, and word—in which humans interact with, make sense of, and experience the world. Geographer J. D. Dewsbury explains that it is useful to think of affect in four different ways, respectively: a material thing, a force, a theory, and a mode of expression. First, affect is the medium through which the body relates to the materiality of the world in a manner that is outside conscious thought and intentionality. Second, affect is a sensation, a kind of invisible presence, something felt, and known to be there, but at the same time intangible and not quite there; an emotive predisposition for, and response to, a particular set of conditions. Both as a material phenomenon and force, affect concerns *embodiment and how corporeality is choreographed in the world in largely subconscious ways. Third, as a *theory used by human geographers and other scholars, affect is a critique of several dominant strands of research in geographic research. These strands focus either on social institutions and social relations, or on various social discourses and modes of social *representation. They tend to ignore affect and focus on the conscious, cognitive aspects of human thought and practice. As a theory, affect is most clearly articulated through *non-representational approaches and its focus on human embodiment, practice, and performance, and its politics centred on how bodily capacity can affect others or be affected. Finally, as a mode of human expression, affect concerns how emotional responses are manifested through an event and how situations unfold in action. *See also* EMOTIONAL GEOGRAPHIES; PERFORMATIVITY; PHENOMENOLOGY.

Further reading Dewsbury, J. D. (2009), 'Affect', in *International Encyclopedia of Human Geography.*

Afghanistan A landlocked country located between the Middle East, South Asia, and Central Asia. Afghanistan is often considered to be a *failed state because of internecine struggles between rival political, religious, and ethnic groups since at least the 1970s. The country has long been subject to strong external political and economic influence—some would say interference. Most recently, American and British troops spent several years trying to capture members of the Taliban and al-Quaeda as part of the 'War on Terror' begun in 2001. Afghanistan remains politically unstable, despite being notionally a democracy governed by a single, elected executive. Though it has many valuable untapped natural resources, the country remains very poor and is considered among the least developed in the world.

Africa The world's second largest and second most heavily populated continent after *Asia. It is comprised of 54 internationally recognized nation states, is bisected by the equator, and surrounded by the Mediterranean Sea, Indian Ocean, and Atlantic Ocean. The continent is extraordinarily diverse ethnically, politically, economically, socially, culturally, and in religious terms. The same can be said of its physical geography. Africa is the birthplace of *homo sapiens* and was home to one of the first modern civilizations (Ancient Egypt). Slavery was widespread in Africa prior to the 15th century but European explorers escalated the slave trade, transporting an estimated seven to twelve million Africans to the New World (that is, South, Central, and North America, plus the Caribbean) by 1900. By this year the major European imperial powers of the period—including Britain, France, and Germany—had taken control of large parts of Africa. Between 1945 and the 1980s the various African colonies achieved independence, by peaceful or violent means. During this period several countries took sides in the *Cold War, with encouragement from either the United States or the former USSR. At the same time South Africa became the most internationally visible African state because its ruling parties—descendent from Dutch and British colonists—enforced a policy of racial *apartheid. This policy separated 'whites', 'blacks', and 'coloureds' in all areas of life to the advantage of the former.

Despite containing a wealth of natural resources, Africa remains the world's poorest continent. Most of its countries are considered to have achieved low levels of *development, while many are also considered to be *failed states. The reasons are many and complex and include the following: political and economic corruption, ethnic and linguistic divisions, the hoarding of wealth by elites, endemic diseases, *natural hazards, civil wars, and famines. Many Africa countries are said to suffer from the *'resource curse' (or paradox of plenty). Resources that are internationally valued (such as copper or oil) seem rarely to produce high levels of economic growth and development in Africa. In recent years, wars in the Congo, Somalia, Zimbabwe, and Liberia have commanded considerable international attention, and so too the 1994 genocide of Tutsis in Rwanda at the hands of the majority Hutu population. Likewise, serious crises of food supply—often involving the displacement of people (*see* REFUGEES)—have become global issues (notably those in the Sahel and the Horn of Africa). In spite of this, Africa contains several countries that have enjoyed political stability, economic growth, and above-average levels of economic and social development. Chief among them are South Africa and Egypt. In 2011 the popular protests against authoritarian political leaders in Egypt, Libya, and Tunisia made headline news as part of the wider so-called 'Arab Spring'.

Despite its size and diversity, outside perceptions of Africa continue to be simplistic, even stereotypical. Arguably, many of the prejudices contained in Western *geographical imaginations of Africa during the period of pre-20th-century imperialism survived today in more polite forms. For instance, in Britain the annual fundraising event Red Nose Day—organized by the charity Comic Relief—has, for all its good work, reproduced ideas that Africa is essentially an unruly (even chaotic) continent perpetually in need of a hand-up. *See also* ORIENTALISM.

Further reading Binns, T. et al. (2011), *Africa*.

African Union Established in 2002 to replace the Organization for African Unity, it unites 53 African countries, (all those in Africa bar Morocco), into a set of shared supra-national political and administrative bodies. The objectives of the African Union are to foster political and economic development, cooperation, and integration across the continent; combat poverty and war; promote and defend African common interests; promote democracy, good governance, and human rights.

SEE WEB LINKS

- Official website of the African Union.

ageing In population terms, the growth in the number and/or proportion of elderly people. It is generally caused by a combination of longer *life expectancy, falling birth rates, and net migration. The study of ageing populations, also known as gerontology, has become increasingly important in human geography because of its significance at international, national, and sub-national scales. It has implications for the planning and provision of health and welfare services, as well as impacts on pensions systems. Where ageing results in an increased *dependency ratio, there will be relatively fewer people of working age to support the non-working population. The UN projects that the proportion of people over 65 in the world will increase from 5.2 per cent in 1950 to 15.6 per cent in 2050.

Further reading Andrews, G. J. and Phillips, D. R. (eds.) (2005) *Ageing and Place: Perspectives, Policy and Practice.*
United Nations Population Division (2001), *World Population and Ageing: 1950–2050.*

agency The potential and actual ability of individuals and institutions to affect the circumstances that structure their thought and action. Geographically speaking, all agents are place based: even the most mobile, cosmopolitan person has roots as well as routes. To what extent, and how, are individuals with different resources at their disposal (economic, cultural, political, or environmental) able to negotiate the more-or-less favourable circumstances into which they are born and raised? Since the 1970s, in reaction to the so-called 'structuralism' of early *Marxist geography, several human geographers have sought to answer this question. Initially they drew upon the work of environmental psychologists and humanistic philosophers (*see* BEHAVIOURAL GEOGRAPHY; HUMANISTIC GEOGRAPHY). Later they drew upon the theoretical works of British sociologist Anthony Giddens, who sought to resolve the so-called *agency-structure debate. Only the poorest and most vulnerable people have little agency, while others exercise their own considerable freedom so as to structure the life chances of millions of others. This uneven socio-spatial distribution of agency remains a major research concern in human geography. In recent years, the long-standing interest in human agency has been complemented—and complicated—by a focus on the agency of non-humans (*see*, for example, ACTOR-NETWORK THEORY).

Further reading Blij, H. de (2010), *The Power of Place.*

agency-structure debate A long-running discussion about how the thoughts and actions of countless individuals and organizations (agents) together comprise large-scale rules, norms, habits, and processes that serve to govern those self-same agents. One of the major contributions of *Marxist geography was to focus attention on how agents—living and working in different locations on the Earth's surface—were circumscribed by both local and global realities over which they appeared to have little control. In reaction to this perceived '*structuralism', advocates of *humanistic geography paid close attention to agents' personal perspectives, feelings, and actions. From the early 1980s, human geographers sought to move beyond this 'structure versus agency' impasse by citing Anthony Giddens' sociological writings on *structuration. Giddens provided a conceptual vocabulary and a set of logical arguments designed to give socio-spatial and historical researchers the ability to take structure and agency equally seriously. The structure-agency debate is not as visible today as it was twenty years ago, though arguably continues in different guises because it focuses on fundamental questions of human existence in a world where even the wealthiest agents cannot ultimately control the grand forces of geography or history. Equally, one might argue that the structure-agency debate has morphed into one more concerned about how non-human agency affects human agency. This is linked to a move away from the idea of 'structure'—which connotes

rigidity and fixity—towards a more fluid notion of actors existing within 'networks'. *See also* ACTOR-NETWORK THEORY; AGENCY.

agent-based models (ABM) A class of computational *models that seek to represent and simulate behaviour in time and space at an individual rather than aggregate level. The models work from the bottom up, with wider spatial and temporal patterns emerging from the interactions of individual agents. At their heart, agent-based models enact a kind of *social physics in which ideas such as potential energy and gravitational force are applied to social behaviour, with people and goods being attracted to certain phenomena, with this attraction shaped by factors such as distance, time, and cost. They are important tools in urban, land-use, transportation, and disaster modelling where different scenarios can be observed. The model consists of an environment where individual features such as buildings and roads are assigned certain characteristics. This environment is then populated with agents that are ascribed particular qualities. When the model is run, the agents seek to solve a task, reacting to the environment and other agents in relation to their ascribed characteristics. In this way, the model can examine, for example, how people might behave in an enclosed space such as a stadium if a fire breaks out at a particular location and is therefore useful in helping to determine evacuation plans. The largest agent-based models seek to model *spatial interaction across whole cities. A particular class of agent-based models are *cellular automata that work on a two-dimensional lattice grid, where the state of any cell is related to that of its neighbours. *See also* CHOICE MODELLING; REPRESENTATION; SPATIAL INTERACTION MODELS.

age structure The shape of a population shown by the distribution of age groups. A national population may be youthful, with a high proportion of people in age groups below twenty or conversely, ageing with numbers more concentrated in older age groups. *See also* POPULATION PYRAMID.

agglomeration The process and outcome of concentrating in one location a set of interlinked and interdependent economic activities. The word 'agglomeration' functions as both a verb and a noun. Large and/or dense agglomerations are sometimes known as 'growth clusters'. Studies by economic and development geographers have practical implications because governments, among others, are keenly interested in having successful agglomerations in their territories. These not only enjoy sustained growth but are also in locations that, for whatever reason, are deemed to be strategically important. *See also* AGGLOMERATION ECONOMIES; CLUSTERS.

agglomeration economies The economic advantages that accrue to existing and new firms, and to other economic agents, from concentrating commodity production in a single location. Once agglomeration reaches a certain density, the per capita costs of certain activities or functions may decrease to the advantage of many or most spatially propinquitous economic agents. For instance, while a new road or light rail system may be far too expensive to build in the early years of a blossoming city-region, it becomes both cost effective and necessary later on. Equally, real but uncosted economies can accrue to firms from co-location, such as the ability of their senior employees to interact face-to-face and share information. *See also* AGGLOMERATION.

aggregation In order to make sense of very large data sets about individual entities it is common to aggregate *data into classes and to compare those classes through either *descriptive or *inferential statistics. By aggregating the data a more generalized account of a phenomenon can be observed, one that also addresses concerns over confidentiality. One of the possible effects of aggregation is *ecological fallacy. *See also* MODIFIABLE AREAL UNIT PROBLEM.

Agnew, John (1949-) An English-American political geographer who has shown the key importance of both local and global scales to the conduct of modern politics. Agnew is a professor at the University of California, Los Angeles. His early research focused on the importance of place and region—as much as nation—in the actions of voters, political parties, and political leaders. He has also been an important analyst of the global political scene and the links between America's economic and political power on the world stage. Most recently, he has challenged conventional notions of state sovereignty and sought to rethink the nature and importance of political *borders and boundaries. *See also* POLITICAL GEOGRAPHY.

agoraphobia A fear of places or situations in which a person perceives him- or herself to have little control over events or to be vulnerable Such places might include wide-open, confined, or crowded ones, or places where events are unpredictable, or open to change. Agoraphobia sufferers experience panic attacks when confronted with such locations and, as such, try to avoid public and unfamiliar places.

Agrarian Question, The An ongoing debate about the relationship between peasant agriculture and capitalist economic development. Although the issue was raised by Marx and Engels, the Agrarian Question can best be traced back to Karl Kautsky in a book of that name published in 1899 in Germany. Written in the context of a Europe-wide rural and agrarian crisis and falling farm incomes, Kautsky was concerned with three main problems: what was the impact of capitalism on small-scale or family farming?; how important was agriculture to capitalist development in general?; and what was the role of the peasantry in the political struggle for socialism and democracy? Contrary to Lenin's argument, Kautsky argued that small farmers might persist rather than be swallowed up by capital-intensive farm enterprises. In part this was because they could draw upon family labour, but he also theorized the peculiar dependence of farming on natural cycles and conditions, which made it less attractive for capitalist investment. For Marxists such as Lenin, the key question was whether peasants would support revolutionary politics led by urban working classes, or whether they would prove to be conservative and so reactionary. Lenin was sceptical about the peasantry, but his views were challenged by A. V. Chayanov in the 1930s, who conceived of peasant farmers as an independent form of socialism (*see* PEASANTRY). The Agrarian Question continued to surface into the late 20th century, notably in the context of the US farm crisis in the 1970s. Sociologists Mann and Dickinson suggested that small family farms had a future because the slow turnover of farming did not suit capitalist investment, though others disagreed (Henderson 1998). Given that the conditions of late 19th-century European agriculture, including capitalist penetration, technological change, and rural transformation, are being experienced around the developing world, the debates between Kautsky and others continue to interest human geographers.

Futher reading Henderson, G. (1998), 'Nature and fictitious capital: the historical geography of the agrarian question', *Antipode* 30: 73–118.

agribusiness Firms involved in the systematic integration of food production processes, from inputs (seeds, fertilizer, etc.), growing crops, and raising livestock, processing (e.g. canning), distribution to insurance, and finance. This kind of vertically integrated system was pioneered in the 1950s in such sectors as the US poultry (broiler) and grain industries. *See also* AGRO-FOOD SYSTEM.

agricultural geography The branch of geography concerned with the study of spatial variations in agricultural activity. Given that farming in the developed world occupies an increasingly smaller percentage of the workforce, and that food production is largely integrated into economic, cultural, and regulatory networks beyond farms

themselves, the study of agriculture has become closely linked with the human geography of food systems more generally. As a result, a distinct agricultural geography is less prominent than in the period between the 1940s and 1980s: for instance in the *Association of American Geographers, agriculture falls within the remit of the Rural Geography Specialty Group.

Even in 1900 the populations of the USA and France and elsewhere remained predominantly rural, and the study of farming and land use was central to geography. A distinct agricultural geography took shape in the USA from the 1920s, focused in particular on the identification and classification of agricultural regions. Derwent Whittlesey's paper on major agricultural regions of the Earth exemplified this interest. After the Second World War, the focus shifted away from the relations between physical geography and agriculture, to a more statistical analysis of the variation in farm activity, structure, and income. John Weaver's studies of the US Mid-West cast doubt on the homogeneity of agricultural regions. A turn to *spatial science came with the adoption of von Thünen's agricultural land-use model (originally set out in 1826), which sought to explain crop patterns and intensity by distance from markets (*see* VON THÜNEN MODEL). Behavioural studies of farm decision-making qualified these spatial models of agricultural activity. From the 1990s approaches drawing on *political economy, *political ecology, and *Actor-Network Theory (Goodman and Watts 1997) served to bring the study of agriculture in line with industrial and economic geography (*see* AGRO-FOOD SYSTEMS). But, insofar as agriculture involves an irreducible natural element, it is likely to be theorized and understood in terms distinct from manufacturing and services.

Further reading Goodman, D. and Watts, M. J. (eds.) (1997), *Globalising Food: Agrarian Questions and Global Restructuring.*

Robinson, G. (2004), *Geographies of Agriculture.*

Singh, J. and Dhillon, S. S. (3rd ed. 2004), *Agricultural Geography.*

Whittlesey, D. (1936), 'Major agricultural regions of the Earth', *Annals of the Association of American Geographers* 26: 199–240.

Agricultural Revolution A set of transformations in British farming variously dated from the 16th, 17th, or 18th centuries to the 19th century, which resulted in significantly higher levels of agricultural productivity. In the absence of comprehensive statistical data, historians and historical geographers are not agreed on when these processes began, or whether they were gradual or more sudden. There are also questions about its geography, where changes began, and how they diffused. There is some agreement that there were important changes in farming from the 1700s that enabled more food to be grown on less land with fewer farmworkers. These included selective breeding of livestock and the use of turnips, clover, and other fodder crops in rotation, thereby fixing nitrogen in the soil and maintaining its fertility. The pastures freed by mixing fodder and food crops could be converted to arable farming, as could areas cleared of woodland or drained through land reclamation. Towards the end of the period, new machinery for harvesting and threshing grain was introduced, further increasing productivity.

Alongside such technological changes were important social and economic developments, which were both a precondition for the revolution and a consequence of it. Common lands were enclosed, removing communal rights to animal grazing, wood collecting, and other activities in the privatization of land ('enclosure'). Much farming was carried out by tenants leasing land from large estates, making use of landless and relatively mobile wage farmworkers. There was an associate shift towards more commercial agriculture, meeting the needs of urban markets.

Whether there was a single revolution or a series of more local transformations accumulating over time, the outcome was a tripling of grain productivity between 1750 and 1850, sustaining high levels of population growth (*see* DEMOGRAPHIC TRANSITION;

HISTORICAL DEMOGRAPHY). The reduction in the number of agricultural workers encouraged higher levels of manufacturing employment. In these two ways, the Agricultural Revolution may have laid the foundations for the *Industrial Revolution. *See also* GREEN REVOLUTION.

Further reading Overton, M. (1996), *Agricultural Revolution in England: the Transformation of the Agrarian Economy 1500–1800.*

agriculture The farming of crops and livestock to meet human needs. Agriculture involves the manipulation of natural food chains to a greater degree than *hunter-gathering but also includes the production of new organisms through *genetic modification. The result of combining human and natural elements is an agro-ecosystem. The two basic forms of agriculture involve the cultivation of crops on land (arable farming) and the management of animals through herding, breeding, and domestication (including ranching). Fishing and forestry are generally not regarded as part of agriculture, although in practice many agricultural concerns combine them with farming.

Agriculture is arguably the most ubiquitous form of human economic activity, and it occupies up to a third of the world's land surface and engages just under 40 per cent of the world's population, slightly less than services. In more developed countries, agricultural employment is only 2–3 per cent, but in the developing world it can reach 30–40 per cent of the population (China, Morocco, and Thailand, for example). The geography of agricultural activity is governed by a range of physical (e.g. climate, soils, relief) and human factors (e.g. population density, market demand, cultural preference) (*see* AGRICULTURAL GEOGRAPHY). Where soil fertility and market demand are appropriate, agriculture can take *intensive and highly industrial forms (*see* AGRIBUSINESS; AGRICULTURE, INDUSTRIALIZED). Elsewhere, where population density is lower or natural conditions less conducive, more *extensive forms of farming such as ranching may prevail. At one extreme, farming activity is vertically integrated into capital-intensive *agro-food systems, involving large inputs of capital, labour, chemicals, and machinery. An example is the US broiler chicken industry. At the other extreme, *subsistence farmers may produce sufficient for their family but little more. The majority of people involved in agriculture can be classed as peasants, small-scale family producers who may be wholly or partly involved in markets (*see* PEASANTRY). In recent years the interest in alternative, less capital-intensive, and exploitative agriculture has risen (*see* AGRICULTURE, ORGANIC; AGRICULTURE, SUSTAINABLE). Although farming is typically associated with rural areas, urban agriculture is common in Africa, Asia, and other regions of the developing world.

Further reading Robinson, G. (2004), *Geographies of Agriculture.*

agriculture, industrialized The application of industrial techniques, technologies, and labour relations to farming. The farm is regarded as a factory, with inputs of capital, machinery, chemicals, and labour, producing outputs; the aim is to maximize yields, productivity, and profits, so providing relatively cheap food and farm products. Industrial agriculture may involve: monoculture (i.e. concentration on one crop or animal); the standardization of crop and animal varieties; and dependence on chemicals at the expense of the environment and workers' well-being. Farm production may also be integrated with distribution and consumption, organized through transnational corporations. Although industrial agriculture is usually capitalist, it has taken more socialist forms, for example, in the former *Soviet Union. *See also* AGRIBUSINESS; AGRO-FOOD SYSTEM.

agriculture, organic Farming based on holistic principles that seeks to minimize the harm done to agricultural ecosystems by restricting the use of artificial inputs. In practice this means avoiding synthetic fertilizers, pesticides, and other manufactured chemicals,