discovering spatial patterns in geographical data sets, the geographical explanation machine tries to ‘explain’ them by identifying predictor variables with a spatial distribution matching the patterns found. As a tool for computer-assisted learning, GEM is pioneering. The problem, however, is that looking hard enough through sufficient data sets – as a computer can – will probably reveal an association although not necessarily one with scientific or rational meaning. Many geographers will balk at an approach to social scientific explanation that is so avowedly empiricist and not guided by theory. Perhaps the ‘E’ in GEM could better be described as exploration.

Suggested reading

gеогrаphісаl іmаgіnаrу A taken-for-granted spatial ordering of the world. ‘Imaginary’ is a concept derived from psychoanalytic theory, in particular the work of Jacques Lacan and Cornelius Castoriadis, and in its original versions it implied a sort of primitive or ur-geography: ‘The imaginary is the subject’s whole creation of a world for itself’ (Castoriadis, 1997; cf. Gregory, 1997a). In human geography, a ‘geographical imaginary’ is typically treated as a more or less unconscious and unreflective construction, but it is rarely given any formal theoretical inflection. It usually refers to a spatial ordering that is tied either to the collective object of a series of imaginative geographies (e.g. ‘the geographical imaginary of the Tropics’: see tropicality) or to their collective subject (e.g. ‘the imperial geographical imaginary’). Watts (1999) brilliantly combines the two in an exceptionally careful reconstruction of the ways in which the Ogoni people of the Niger delta fashioned a precarious sense of collective identity tied to space, territory and land. Like Watts, most studies recognize the crucial importance of language, especially metaphor, and of visuality in producing these orderings.

Geographical imaginaries involve bordering as well as ordering: the hierarchical division of the globe into continents, states and other sub-categories (see scale), for example, and the oppositions between global north/south, urban/rural, inside/outside and culture/nature. These divisions also often act as tacit valorizations (‘civilized’/‘savage’, for example, or ‘wild’/‘safe’) that derive not only from the cognitive operations of reason but also from structures of feeling and the operation of affect. As such, geographical imaginaries are more than representations or constructions of the world: they are vitally implicated in a material, sensuous process of ‘worlding’. Thus, for example, Howitt (2001a, pp. 236–7) identified a geographical imaginary that was intimately involved in the European construction of a ‘bounded self’ and which, in the colonial past of Australia and on into its present, worked to construct equally bounded spaces ‘that provided certainty, identity and security’ from which indigenous peoples were excluded. More generally, but closely connected, Massey (2004, pp. 9–10) attributed a pervasive ‘Russian-doll geography of care and responsibility’ to ‘the persistence of a geographical imaginary which is essentially territorial and which focuses on the near rather than the far’. It follows that a vital critical task for human geography is the disclosure of these taken-for-granted geographical imaginaries and an examination of their (often unacknowledged) effects.

Suggested reading
Watts (1999).

gеогrаphісаl іmаgіnаtіоn A sensitivity towards the significance of place and space, landscape and nature, in the constitution and conduct of life on Earth. As such, a geographical imagination is by no means the exclusive preserve of the academic discipline of geography. H.C. Prince (1962) portrayed it as ‘a persistent and universal instinct of [humankind]’. The geographical imagination as he saw it was a response to places and landscapes, above all to their co-mingling of ‘culture’ and ‘nature’, that ‘calls into action our powers of sympathetic insight and imaginative understanding’ and whose rendering ‘is a creative art’ (cf. Cosgrove, 2006b). Prince’s emphasis on art and, by implication, on geography’s place among the humanities, was in part a critical response to the reformulation of the discipline as a spatial science. To Prince, these formal abstractions were ingenious and inventive but, ‘like abstract painting’, they would always remain indirect approaches to a world to which the freshest, fullest and richest response was, in his view, literary (whereas Cosgrove, who was profoundly sympathetic to Prince’s vision, made a compelling case for a visual and aesthetic sensibility – though he expressed this in luminous prose too). In Prince’s view, it was vitally important to preserve ‘a direct experience of landscape’ through the art of geographical description (see also representation).
Some ten years later, David Harvey (1973) provided a discussion of the geographical imagination that also recognized the value of the aesthetic, but Harvey departed from Prince’s account in two particularly significant ways: Harvey’s critique of spatial science was much more open to formal theoretical vocabularies (indeed, it relied on them), and its characteristic emphasis was on place and space rather than landscape and nature (which had occupied a much more prominent position in Prince’s discussion). In Harvey’s eyes, therefore, the geographical imagination enables ‘individual[s] to recognize the role of space and place in [their] own biographies, to relate to the spaces [they] see around [them], and to recognize how transactions between individuals and between organizations are affected by the space that separates them . . . , to judge the relevance of events in other places . . . , to fashion and use space creatively, and to appreciate the meaning of the spatial forms created by others’. Harvey wanted to contrast the geographical imagination with, but also to connect it to, what sociologist C. Wright Mills (1959) had called ‘the sociological imagination’, a capacity that ‘enables us to grasp history and biography and the relations between the two in society’. Neither Harvey nor Mills confined the terms to their own disciplines; they both said they were talking about ‘habits of mind’ that transcended particular disciplines and spiralled far beyond the discourse of the academy. Nonetheless, much of the discussion that followed from Harvey’s intervention was concerned with formal questions of theory and method.

A central preoccupation was the articulation of social theory, broadly conceived, and human geography. ‘It has been a fundamental concern of mine for several years now,’ so Harvey (1973) had written, ‘to heal the breach in our thought between what appear to be two distinctive and indeed irreconcilable modes of analysis’, and he presented his seminal Social Justice and the City as (in part) a ‘quest to bridge the gap between sociological and geographical imaginations’. It was urgently necessary to humanize human geography, and ideas and concepts were drawn in from the humanities and (especially) the social sciences – in particular, from political economy, social theory and nominally ‘cultural’ disciplines such as anthropology and cultural studies. En route, however, it became clear that the reverse movement was equally important, sensitizing these other fields to a geographical imagination, because most of them took a so-called ‘compositional’ approach that had no interest in place or space (cf. contextuality). This was a challenging project, and it involved not only geographers but also original, vital contributions from other disciplines. Indeed, some of the most intriguing and influential spatializations were produced by scholars outside the formal enclosures of Geography: Foucault and Deleuze in philosophy, Giddens and Urry in sociology, and Jameson and Said in comparative literature. Some ten years after Social Justice, Harvey (1984) calibrated the magnitude of the collaborative, interdisciplinary theoretical task like this:

The insertion of space, place, locale and milieu into any social theory has a numbing effect upon that theory’s central propositions . . . Marx, Marshall, Weber and Durkheim all have this in common: they prioritize time over space and, where they treat the latter at all, tend to view it unproblematically as the site or context for historical action. Whenever social theorists of whatever stripe actively interrogate the meaning of geographical categories, they are forced either to make so many ad hoc adjustments to their theory that it splinters into incoherence, or else to abandon their theory in favour of some language derived from pure geometry. The insertion of spatial concepts into social theory has not yet been successfully accomplished. Yet social theory that ignores the materialities of actual geographical configurations, relations and processes lacks validity.

Subsequent commentators reported considerable progress in sensitizing social theory and social thought more generally to these concerns. There was (and remains) an immensely productive dialogue between marxism and human geography, especially through economic geography and historical geography (see also marxist geography), and these conversations and their critiques spilled over into a number of other politico-intellectual traditions (Harvey, 1990; cf. Castree, 2007). The rise of postmodernism was hailed as emblematic of a distinctively geographical (or at any rate ‘spatial’) imagination (Soja, 1989), and the interest in post-colonialism and post-structuralism contributed in still more radical ways to the critique of abstract and universal models of subject, society and space. But three other dimensions of the geographical imagination have received close attention in recent years, and each of them works towards the production of ‘impure’
geographies that depart considerably from the closures and clinical approaches of Geography-with-a-capital-G.

In the first place, there has been a renewed interrogation of academic versions of the geographical imagination, and in particular of the two versions proposed by Prince and Harvey (above). Influenced by post-structuralism in different ways and to different degrees, and in particular by a focus on geography as discourse, several critics have argued that geography is not simply framed by or reflective of changes in the ‘real’ world: on the contrary, its discourses are constitutive of that world. For Gregory (1994) and Deutsche (1995), drawing on Mitchell’s (1989) account of the world-as-exhibition, human geography is construed as ‘a site where images of the city and space more generally are set up as reality’, as fabrications in the double sense of imaginative works and works that are made, and hence as ‘the effects rather than the ground of disciplinary knowledge’ (emphasis added). Thus the modern geographical imagination, in its usual hegemonic form, not only ‘stages the world-as-exhibition and at the same time is fabricated by the picture it creates’; it also characteristically disavows its dependence by adopting an objectivist epistemology that separates itself from the picture as an autonomous, all-seeing ‘spectatorial’ subject (Deutsche, 1995). Such an epistemology is, as she remarks, a vehicle for ‘the silent spatial production’ of ‘the self-possessed subject of geographical knowledge who, severed from its object, is positioned to perceive an external totality and so avoids the partiality of immersion in the world’ (cf. situated knowledge).

Gillian Rose (1993) emphasizes that this is both an act of mastery – hence her critique of the masculinism of geographical knowledge – but also an act that is shot through with ambivalence:

In geography, a controlling, objective distance is not the only relationship which positions the knower in relation to his object of study. There is rather an ambivalence, which produces the restlessness of the signifiers within the discipline’s dualistic thinking. On the one hand, there is a fear of the Other, of an involvement with the Other, which does produce a distance and a desire to dominate in order to maintain that distance. This is central to social-scientific masculinism. On the other hand, there is also a desire for knowledge and intimacy, for closeness and humility in order to learn, and this is the desire of aesthetic masculinity to invoke its other. (Rose, 1993, p. 77)

Rose’s critique identifies the first position (‘social-scientific masculinity’) with projects such as Harvey’s and the second position (‘aesthetic masculinity’) with projects such as Prince’s.

Rose and Deutsche both urged that this recognition of the limits (rather than the presumed completeness) of geographical knowledge’s involve an engagement with psychoanalytic theory in order to grapple not with the conscious and creative exercise of the ‘imagination’ – something that concerned Prince (1962) in particular and humanistic geography in general – but with the imaginary: in other words, with ‘the psychic register in which the subject searches for plenitude, for a reflection of its own completeness’ (cf. geographical imaginary). By this means, Rose (1993, p. 85) suggests, it is possible ‘to think about a different kind of geographical imagination which could enable a recognition of radical difference from itself; an imagination sensitive to difference and power which allows others rather than an other’ (see also feminist geographies; queer theory). In the same spirit, experiments with non-representational theory may also be seen as creative attempts to apprehend the world in terms that are not limited to cognition and consciousness (see also affect).

In the second place, and closely connected to these departures, there has been a pluralization of geographical imaginations. Many human geographers have become reluctant to speak of the geographical imagination – unless they are referring to a hegemonic form of geographical enquiry, and then usually as an object of critique – and are much more interested in the possibilities and predicaments that arise from working in the spaces between different philosophical and theoretical traditions (see Gregory, 1994). Closely connected to the production of these ‘impure’ geographies, there has also been a considerable interest in geographical knowledges that are not confined to (indeed, have often been excluded from) the formalizations of the academy. The boundaries of geography have thus been called into question through the recovery of quite other imaginative geographies that can have extraordinary powerful effects (cf. performativity): for example, the geographical imaginations deployed to wage war (see military geography), conveyed through travel.
writing, or mobilized in popular culture and politics (e.g. Pred, 2000). Critical studies of these geographical imaginations are not being conducted in an annex to the central structures of geography. Not only are they informed by contemporary politico-intellectual preoccupations but they also contest the conventional partitions between ‘high’ and ‘low’ cultures and imaginations. The circulation of discourses in and out of academic institutions is of vital importance to the elucidation of the politics of geographical imaginations, but also to their conduct: hence the interest in PUBLIC GEOGRAPHIES that transcend a narrow, instrumental concern with policy formulation to address political issues within a wider public sphere. A number of these contributions have been informed by post-colonialism, which has inspired a belated recognition of the importance of geographical imaginations and the importance of geographical imaginations outside the global NORTH (see ANGLOCENTRISM; ETHNOCENTRISM; EUROCENTRISM).

Third, there has been a renewed engagement with ‘nature’. The impetus for this has come from outside the discipline as much as from within, through precisely the political engagements and public, ‘popular’ geographies identified in the last paragraph. And yet in the previous paragraphs ‘NATURE’ has effectively been displaced from the central position it was once accorded within most major traditions of geography and its place taken by SPACE. The price paid for the articulation of a distinctively ‘human’ geography in the wake of what many critics saw as a dehumanizing spatial science was ‘a peculiar silence on the question of nature’ (Fitzsimmons, 1989). This has changed dramatically in recent years. These newer formulations do not eschew the significance of space – on the contrary, often informed by ACTOR-NETWORK THEORY, they elaborate a TOPOLOGICAL ‘spatial imagination’ – but they do so in ways that produce a much more sensuous, lively geographical imagination. For they ‘alert us to a world of commotion in which the sites, tracks and contours of social life are constantly in the making through networks of actants-in-relation that are at once local and global, natural and cultural, and always more than human’ (Whatmore, 1999b, p. 33). Such an approach, as Whatmore notes, ‘implicates geographical imaginations and practices both in the purifying logic which … fragments living fabrics of association and designates the proper places of “nature” and “society”, and in the promise of its refusal’ (p. 34; emphases added). To fulfil such a promise, critical enquiry will require the production of radically ‘impure’, heterogeneous geographies. The philosopher A.N. Whitehead once famously remarked, ‘Nature doesn’t come as clean as you can think it.’ And for the reasons spelled out in these paragraphs, many would agree that geographical imaginations are – at last – becoming much dirtier.

All that said, there are two further dimensions of geographical imaginations that have received rather less attention, and both return us to the concerns originally voiced by Prince and Harvey. On one side, there have been attempts to experiment with forms of geographical expression – to realize the imaginative capacities and creative potential of geography in something like the sense that Prince used the term, the sort of sensibility that invites a reaction of surprise, even wonder: ‘I’ve never thought of the world like that before.’ Most of these have been confined to linguistic play in the pages of academic journals or monographs, however, though some human geographers have been drawn to the possibilities of art installations and dramatic performances as ways to reach wider audiences in non-traditional, non-academic forms. Without this outreach, which will almost certainly also involve the imaginative use of new technologies of COMMUNICATION, the possibility of public geographies will remain just that – a possibility. On the other side, and closely connected to this concern, there have been remarkably few attempts to imagine other worlds in the sense that Harvey (2000b) gave the term: ‘spaces of hope’. This too is crucial; the transformations and extensions of geographical imaginations described above, and throughout this Dictionary, reveal an extraordinary capacity within and beyond the discipline for critique, for the pursuit and even the privileging of what Benhabib (1986) identified as the explanatory-diagnostic. But, as she also shows, a genuinely critical enquiry must also include the anticipatory-utopian (see UTOPIA); without releasing and realizing our geographical imaginations in this vital sense, then, we will turn forever on the treadmills of somebody else’s present.

Suggested reading
Gregory (1994, ch. 2); Harvey (1990); Rose (1993, ch. 4).

geographical societies Voluntary organizations, some of them professional, whose goal is the promotion of GEOGRAPHY as a subject and/or an academic discipline.