Chapter Two Ontology

Ontology means 'theory of being' from the Greek words *onto* meaning being and *logos* meaning science or theory. Ontology is concerned with the nature of reality, what exists in the world and how it exists. An ontology is an abstract theory of what the world is like. All teaching about the world reflects an ontology, stated or unstated. For the geography teacher not having an ontology is not an option.

Realism [1] maintains that a mind independent objective reality exists independently of how or whether it is perceived by people. Such realism opposes **idealism** that suggests that reality is entirely a mental construct or that ideas, discourse, language, and signs and symbols of all kinds have the greatest claim to be considered real. **Empirical realism** focuses on entities that can be observed either directly or with the aid of scientific instruments. **Critical realism** looks more deeply at the underlying mechanisms and events shaping these entities while idealism sees them entirely socially or culturally constucted culturally in dscourse etc. For critical realists something is **real** if it has causal effects. Hence ontology does not refer just to things that are **materially real** (e.g. landforms, oceans, weather, ecosystems, cities, data centres, economies, etc.), it slso refers to things that are **socially real** (e.g. market mechanisms, organisations, class and gender relations, norms, rules, convertions) and things that are **culturally real** (e.g. language, discourse, signs, symbols, media, ideas, beliefs, explanations, concepts, models, theories).

Critical realism is a philosophy of science that provides theoretical tools to sharpen social theory and render it a more effective vehicle of human emancipation [2]. It is **critical** of the way in which society is currently organised in seeking to expose the weaknesses of mainstream theory and dominant ways of thnking, advance alternatives, and so empower citizens as agents of social change. As such it finds application among radical teachers, academics, and social / political movements.

Since the world exists independently of our knowledge or awareness of it, critical realists make a sharp distinction between two dimensions of science (geography): the **transitive dimension** which consists of our knowledge of

the world (the facts, concepts, methods, theories, etc) that exist at any time, and the **intransitive dimension** that consists of the objects of science including the nature, places and spaces that geographers study. These objects and our knowledge of them change independently of one another as can be seen by considering the phenomena of climate breakdown and our changing knowledge of it. Critical realists warn against the **epistemic fallacy** or the attempt to reduce ontology to epistemology or the intransitive to the transitive dimension – to reduce what is to what is known.

The three domains of reality

Critical realists see the world as real, structured, and complex. It consists of multiple unobservable structures and mechanisms (operating in the **real domain**) that may under certain circumstances sustain and cause phenomena and events to occur (in the **actual domain**) that we may or may not observe (in the **empirical domain**).

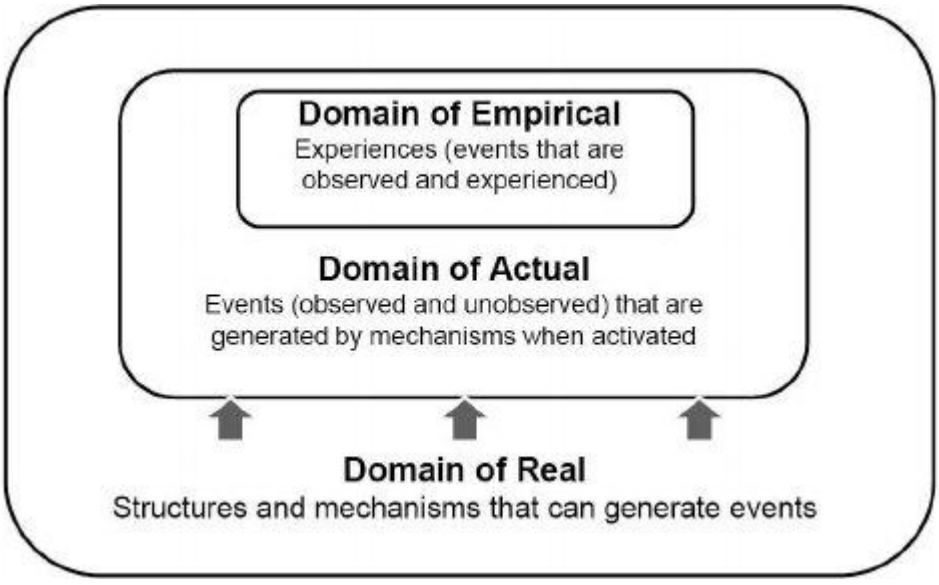


Figure 2.1 **The three domains of reality** [3]

These domains are nested within one another in a layered or laminated system (Figure 2.1) such that the empirical domain consists of experiences and observations that along with events and phenomena are also features of the actual domain. The real domain consists of all these (experiences, observations, events and phenomena) together with structures and mechanisms: bio-physical structures and mechanisms (Earth systems) and

social structures and mechanisms / processes (social systems). These structures and mechanisms can be considered to comprise a **deep domain**. Here in addition to the laws that operate in the bio-physical world are such real social entities as agreements, customs, laws, networks, norms, procedures, rules, regulations, values, beliefs, language, institutions, and organisations.

Earth systems set flexible limits on the development of social systems which distribute resources and power to institutions and citizens across time and space that enable or constrain their actions. These actions (or lack of actions) create events (or non-events) in the actual domain that either reproduce or change structures and mechanism.

Since the phenomena that constitute Earth and social systems are so extensive, geographers have developed specialist branches of the subject: physical, human, environmental, economic, political, cultural, etc. In each of these, knowledge is to some degree contested and those developing a school curriculum are required to select from the totality of geographical knowledge based on their understanding of students' and society's needs. In English state secondary schools, the sparce provision of economics, social studies and political / citizenship education means that geography and history are the main subjects whereby students below the age of sixteen learn about social systems.

Mechanisms

Mechanisms are a core concept in critical realism, often termed **processes.** They are powers that are enabled by structures in the deep domain or things that may make something else happen as an event. They include actors (e.g. landforms, weather, soils, plants, animals, humans, ecosystems, capital, social class, corporations, governments, political parties, left and right populisms, NGOs); their actions; and the languages, discourse, ideologies, rules, institutions, media, beliefs, interests and values that shape the actions of citizens and institutions within society. There are always a multitude of active mechanisms in the real (deep) domain that can trigger, block or modify each other's effects. The relation between mechanisms and their effects is thus **contingent**. A mechanism may or may not be activated, may or may not cause an effect, depending on what other mechanisms are acting in a particular **conjuncture** of mechanisms that is time and place specific. A corporation has the causal power to make profits but whether it does so is dependent on other mechanisms, such as the state of the market for its goods and services.

Enquiry or research guided by critical realism involves abstraction [4] or identifying both the mechanisms at work and the contingent relations that allow them to cause the effect under investigation.

Figure 2.2 draws attention to critical realism's three forms of knowledge: knowledge of what is perceived to be happening, knowledge of what actually happens, and knowledge of what and why (all things) are. School geography that neglects knowledge of what things are and the generative mechanisms they produce (ontology) is clearly deficient.

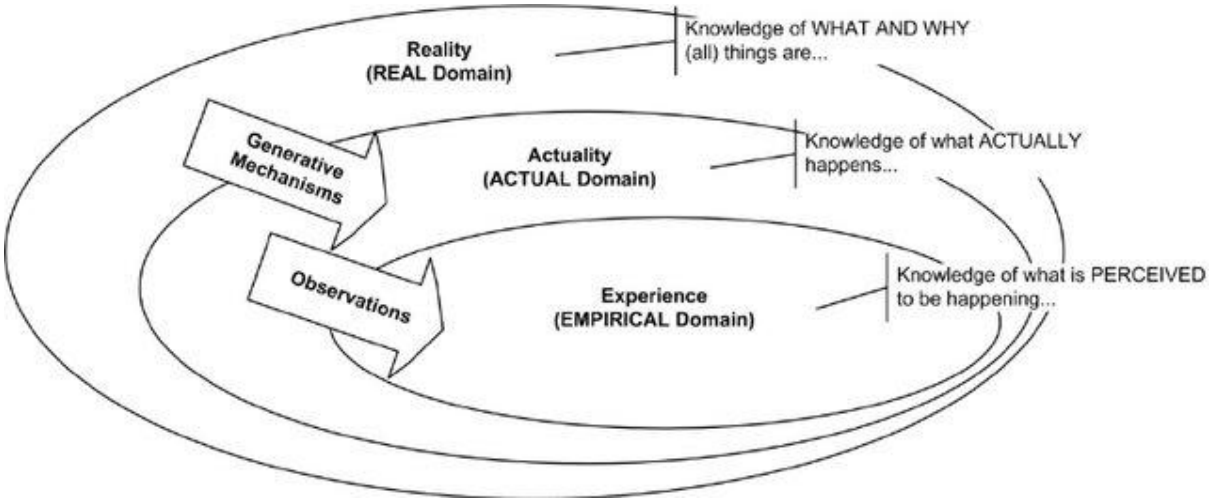


Figure 2.2 Critical realism's three forms of knowledge (Bennett, 2013 [5])

The Iceberg Analogy

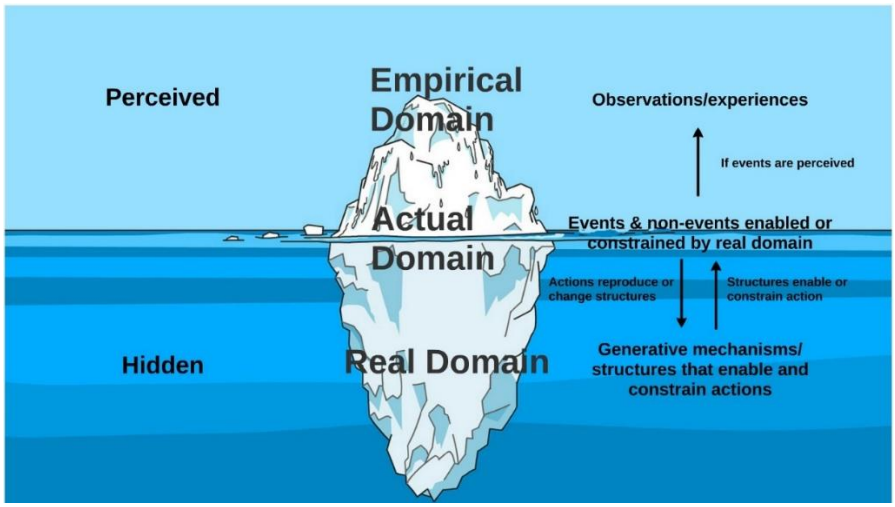


Figure 2.3 The iceberg analogy to the three domains [6]

The iceberg analogy is used by critical realists to suggest that the world as perceived is only a fraction of the world that exists (Figure 2.3). It prompts them to warn against **ontological actualism** – the reduction of the real to what is only actual.

Our experiences, observations, and knowledge do not necessarily reflect how things 'really' are. Reality and our understanding of it can be far removed from one another, a disjuncture that gives rise to critical theory's concepts of **false consciousness, ideology and fetishism**. We may misperceive our position in society and our true interests (false consciousness). We may adopt ideas that serve the interests of the rich and powerful (ideology), or we may come to see existing structures and mechanisms as somehow natural, fixed, and unchangeable (fetishism).

Critical realism warns about basing science or knowledge solely on what we experience (empiricism), what we deduce from one event or a combination of events seeming to cause another event (positivism), or what language, discourse and texts tell us about reality (interpretivism). These philosophies of knowledge will feature in chapter four where their influence on the geography curriculum will be considered. Positivism [7] is currently the dominant or hegemonic philosophy of knowledge lending ideological support to those who rule and manage capitalist society in technocratic ways.

A dialectical view of the world

Critical realism is a **dialectical** philosophy or way of thinking. It suggests that the world is best understood not a complex of ready-made things but as a system of structures and mechanisms through which all things come into being, exist and pass away. The things that geographers study are best viewed as changing systems of structures, mechanisms, and events.

It is the relations between things or their structure that enable systems to function with powers to transform themselves and other systems. Things are the constitutive and constituted moments of systemic processes, or flows of matter, energy and information, and it is impossible to separate things from the network of systems within which they are embedded. Part and whole, organism and environment, male and female, nature and society, social structure and human agency, ruling class and working class, coloniser and colonised, digital capitalism and digital socialism, philosophical realism and social realism, curriculum and pedagogy, all such **opposites or dualities** are related. The one constitutes the other and the tensions or contradictions

between them are what leads to change in the world. There can be few grounds for knowledge that seeks to understand the one without reference to the other.

Hence critical realism is a holist rather than a reductionist philosophy, adopting a both / and rather than an either / or outlook. In this regard it accords with decolonial theory that draws attention to the **non-dual ontologies** of premodern, Indigenous, and some **subaltern peoples** [8] (those socially, politically, and geographically excluded from the hierarchy of power of an imperial colony and from the metropolitan homeland of an empire). It also acknowledges the **social construction of nature** while recognising a **realist nature** (the nature to whose laws human nature (society) is always subject as it works with the rest of nature to realise its needs and wants).

Dialectics seeks to explain the general laws of movement or development in nature, society and thought and reflects four principles:

- **Totality** (everything is related)
- **Movement** (everything is constantly being transformed)
- **Qualitative change** (the tendency to self-organisation and complexity)
- **Contradiction** (the unity and struggle of opposites)

As a philosophy of science, critical realism 'under labours' for critical social theory. For Marxism, it provides additional philosophical insights to add to its dialectical and materialist view of the world that is primarily focussed on the dialectics of global capitalism.

A stratified, emergent and co-determined reality

Returning to the domains of reality (Figure 2,1 page 32) and building on their dialectical worldview, critical realists see the world as characterised by **stratification, emergence and co-determination**. Lower level strata tend to be more enduring than higher level strata with higher level strata (society) emerging from lower level strata (the bio-physical world) and being governed by lower level laws (e.g. the laws of physics, chemistry and ecology). Since the world is stratified, different structures, mechanisms and laws operate at different levels (e.g. those of thermodynamics, ecology, capitalist economies, liberal democratic politics, social media) and interact to co-determine or create environments and societies and related issues and solutions. Geographers should regard these structures, mechanisms and laws as their prime objects of study and seek to uncover them. They can then explain the

development of nature, space and place, analyse issues and suggest solutions, and advance the critique of social structures and false beliefs that harm humans and suggest alternatives.

Naturalism

Naturalism [9] is the belief that nature is all that exists (nothing is supernatural). It holds that our mental powers are causally derived from and ontologically dependent on systems of non-mental properties, powers or things (bio-chemical-physical powers) that are natural. Similarly, society is natural, emergent from bio-physical strata as human animals invent technologies and social systems. Critical realism therefore seeks a science that can encompass both the natural (bio-physical) and social sciences with both engaging in depth explanation whilst acknowledging the limits of viewing social phenomena in the same way as other natural phenomena imposed by humans having beliefs about structures that shape their actions. As we have seen, it critiques empiricism, positivism, and interpretivism as partial explanations of phenomena that can be used to support false beliefs or ideology.

Nature is central to the study of geography which has long supported dualism and separate branches of physical and human geography. Key to addressing this dualism and asserting naturalism and holism is enabling students to consider the social construction of nature [10]. Acknowledging that human natures, human societies, and human environments emerge from and are co-determined or co-constructed with non-human nature, leads to the following ideas:

- Nature and cultures / societies are not separate entities they are intertwined and interdependent. Without this vision it is not possible to understand nor to intervene in terms of a transition to sustainability (ecological transition).
- The way we conceive, explain and deal with nature and ecological challenges is influenced by our social-cultural background, the power relations in society, etc. Instead of a singular reality we have plural meanings, plural natures and plural relations with the rest of human and non-human nature, that co-exist in each territory and condition the ecological transition.

- In the context of contemporary socio-ecological challenges such as global heating and biodiversity loss, a deeper reflection on the concept of nature seems more necessary than ever.

In the light of these ideas, it helpful for geography teachers to distinguish between:

- **First or realist nature** – the nature to which society is always subject as it works with it to meet its needs and wants. A deep nature exhibiting such laws as those of gravity and thermodynamics and giving rise to such mechanisms as the greenhouse effect. While some associate first nature with wilderness the traces of human nature are detectable everywhere on the Earth's surface.
- **Second nature or co-constructed nature** – the nature that human nature produces by working with non-human nature. The nature of farms, factories, settlements, manufactures, commerce, places, the internet,
- **Third nature or nature as represented in culture**. The diverse forms in which we represent nature to ourselves in media of all kinds. Such representations may serve to conceal the role of society and power relations in the construction of nature (see false consciousness, ideology and fetishism above).

Open and closed systems

Co-determination (see above) means that while things have propensities (powers, capabilities) to act in a certain way, they may or may not act in these ways when they interact with other things in open systems. **Open systems** are those that allow energy and materials to flow across their boundaries while **closed systems** allow only energy to cross the system boundary. The Earth system is open to energy and closed to materials and is hence a closed system. **Sustainability** is about the ability of human society and its social systems to continue indefinitely within the limits or planetary boundaries imposed by natural / bio-physical systems (realist nature).

Doughnut economics offers a form of accounting which takes focuses on planetary boundaries and finds application in such fields as city planning. Figure 2.4 (page 39) suggests that there is a safe and just operating space for humanity and that it should plan regenerative and distributive economies that

meet its social needs (social foundations) without breaking through or overshooting the planet's ecological ceiling. Harmful tipping points [11] in the natural world threaten humanity by disrupting life support systems and social stability. The challenge of living within planetary boundaries is to develop positive tipping points [12] that favour regenerative and distributive economies, are self-sustaining, and based on forms of knowledge that focus on such concepts as post-capitalism, post-growth, and degrowth. Eco-socialism (page 9) offers a route to such economies.

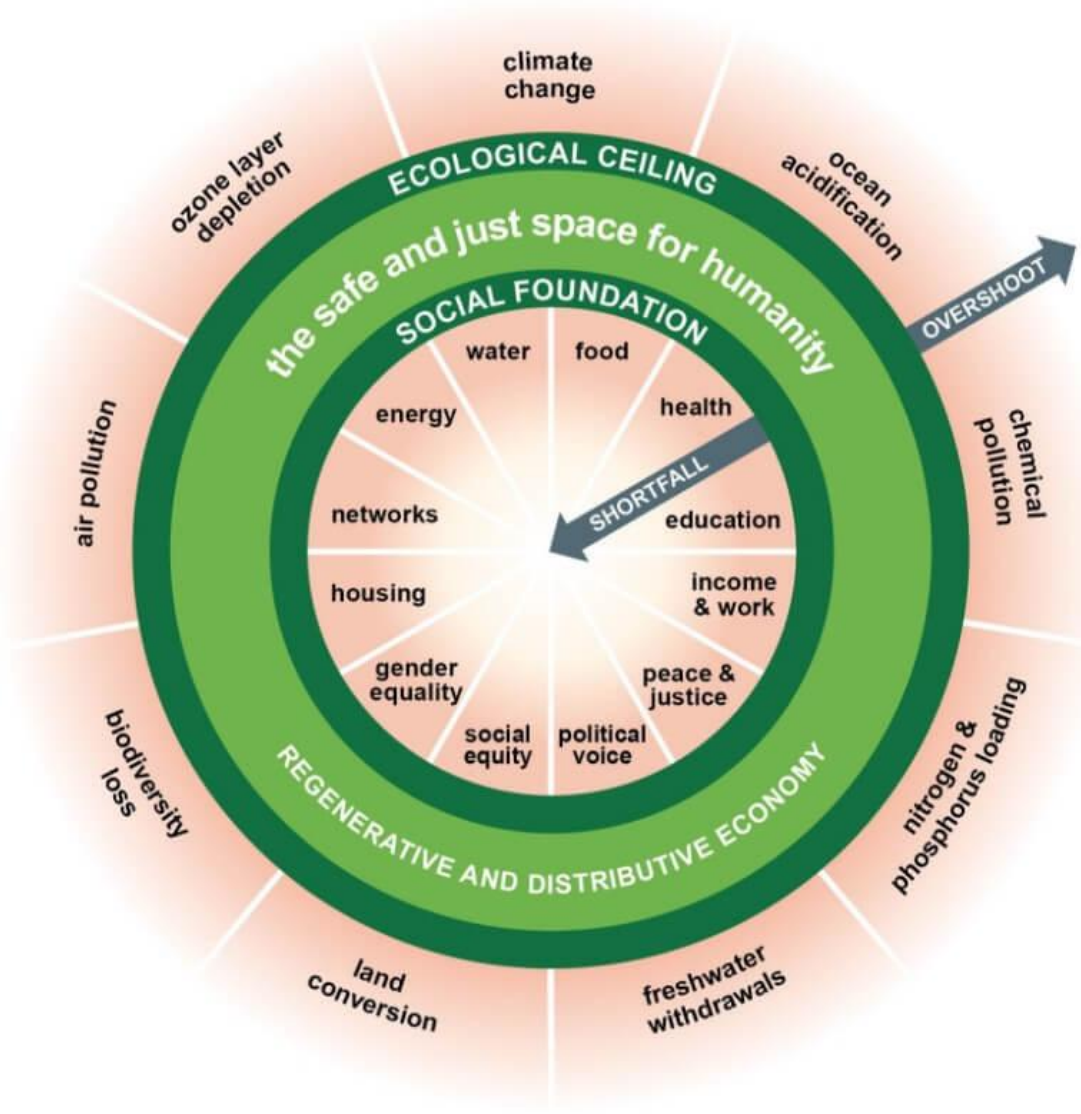


Figure 2.4 Doughnut economics [13]

Degrowth

Degrowth is not another kind of growth or development but a form of 'prosperity without growth' (Jackson [14]), 'a deeply radical socio-ecological transformation' (Demaria [15] or a move to 'half Earth socialism' (Vetesse & Pendergrass, [16]). Burton and Somerville [17] defend degrowth and outline what it might mean while Schmid [18] addresses degrowth in the context of the spatial concepts of scale and site and its potential for a transformative geography.

In reconceptualising degrowth from a critical realist perspective, Buch-Hansen and Nesterova [19] draw on critical realism's four planar model of social being [20] (see page 7). This sees social being and change occurring on four levels: transactions with nature, social relations between agents, interpersonal relations, and intra-subjective relations. Degrowth, which is both anti-capitalist and postcapitalist, requires deep transformations on all four planes with citizens deciding what they want more or less of as outlined in Table 2.1.

	Less	More
Transactions with nature	Matter and energy throughput, extractivism and instrumental treatment of nature, waste, pollution, greenhouse gas emission, production and consumption of unnecessary goods, transportation/food miles, built environments, artificial obsolescence	Cleaner energy forms, regard for planetary boundaries, valuing and preserving biodiversity and life, place-sensitivity, place-based activities/localisation, nature-based economic activities
Social interactions between persons	Competitiveness, greed, individualism, intolerance, racism, sexism, climate change denial, homophobia, xenophobia, hate, fear, alienation, instrumental treatment of humans	Empathy, compassion, peacefulness, solidarity, sufficiency, kindness, generosity and tolerance of diversity, spontaneous right action, fellow feeling, respect and concern for others, care, mutual learning, democracy.
Social structures	Growth imperative, competition, inequality, patriarchy, rigid hierarchies,	Collaboration, equal distribution of economic and

	bureaucracy, structures of oppression, exploitation, domination, poverty, suffering.	other resources, flat hierarchies.
Inner being	Egoism and ego-realisation, egocentrism, equating the ego with the self, short-term orientation, entitlement, possessiveness and materialism ("to have"), hedonism	Love, creativity, oneness, gentleness towards being and beings, awareness, curiosity, transcending the narrow ego self, seeing oneself as part of the broader existence, self-realisation, fulfilment, harmony, joy, reflection/mindfulness

Table 2.1 Degrowth: less and more (Buch-Hansen & Nesterova, 2021, p. 3)

As actors in global society, radical global citizens should adopt an underlying ethic that embraces principles of care, solidarity, and gentleness (a felt sensitivity to the condition and suffering of others, both human and non-human, Bhaskar's ethical naturalism, see page 4); radical democracy that embraces sustainability; and green democratic planning that seeks to reduce 'more items' and increase 'less items'. Degrowth is not a case of choosing between dualisms (e.g. growth / degrowth) but of tipping the balance in favour of items in the more column (a version of both/and, page 36).

The natural and social sciences

Having considered naturalism, rejected nature / society dualism, considered the ways is which nature is socially constructed, and noted the differences between open and closed systems, it is time to turn our attention to the duality of physical and human geography and the ways in which a non-dual or critically realist geography invites both a critical physical and human geography.

As we have seen the assumption of **naturalism** leads to consideration of the extent to which the social and natural (bio-physical) worlds are different and should be studied in different ways. Critical realism does offer a unified approach to the natural and social sciences (physical and human geography) that moves from observed phenomena to the configurations of underlying structures and mechanisms that cause them. But it recognises real but different

structures and processes within the bio-physical and social worlds, the lower and upper strata of reality.

The causal mechanisms and properties of inorganic and organic nature combine with human nature in dialectical ways allowing each to evolve and develop in ways that are more of less sustainable. The new physical and life sciences [21] enable us to understand the dialectical and systemic nature of the processes of emergence that underpin the principle of qualitative change. The critical social sciences enable us to understand the ways in which social mechanisms (e.g. markets, systems of production and distribution, governments, schools, beliefs, values) facilitate or undermine the interactions between human and non-human nature that foster sustainability.

Social science needs to be combined with natural science to understand how society is embedded in nature, while natural science needs to be combined with social science to understand the forms that a socially constructed nature takes in specific social (historical and geographical) circumstances. Social sciences can be sciences in the same sense as the natural sciences but not in the same way.

This is because:

- The subject matter of the social sciences cannot be reduced to that of the natural sciences (e.g. human behaviour cannot be reduced to biochemical reactions) there are qualitative differences.
- We cannot close social systems to outside influences (flows of material, energy and information) and carry out experiments of the kind conducted in the natural sciences.
- Social structures are activity dependent while bio-physical structures are not (a key ontological difference). Society is both produced and reproduced by its members and is therefore both a condition and an outcome of their activity (shaped by social relations and structures). The social sciences have a subject-subject relationship with their subject matter rather than a subject-object one that characterises the natural sciences. The nature of human agents' relations with their social world is the subject of chapter four.
- Social structures, unlike bio-physical structures, are usually only relatively enduring. The processes they enable are not universal or unchanging over time and space. Critical realism suggests that the

social sciences should be critical of social structures and thereby participate in the progressive transformation of global society towards a more just, democratic and sustainable world.

If critical realism offers a means of integrating the natural and social sciences and so overcoming the duality of physical and human geography, geography teachers require a conceptual framework or model of society that reflects its ontological assumptions. That model originates in Marx's political economy and his model of capitalist society that is continually being updated by critical theorists.

Critical realism and Marxism

As mentioned above, critical realism seeks to support Marxism as a form of critical social theory that digs deeply and critically into the world and offers ideas for refection and action that seeks to transform it (praxis [22]). As we will see in chapter four, Marxism regards education as a site of class struggle and school knowledge as political in that it serves to reproduce or challenge exiting social and environmental relations (relations of power between people and between people and the rest of nature).

Both critical realism and Marxism are driven by an ethical or axiological [23] commitment to human emancipation from alienating, undemocratic, de-humanising social and environmental relations (ethical naturalism and universal human flourishing – see chapter one). Both seek social transformation and to that end engage in productive dialogue to support Marx's historical and geographical materialism. Whereas Marxism operates at the levels of philosophy, social theory, and practice, critical realism operates solely as philosophy. Unlike Marxism, critical realism does not advance particular theories or political projects, but a majority of critical realists are on the left and claim to be democratic socialists [24].

Democratic socialism

Collier [25, p. 200] suggests why democratic socialism appeals to critical realists:

- Socialism suggests that change comes about by changing social structures and mechanisms not by changing the way we view the world (idealism).

- There is a correspondence between critical realism' worldview and certain models of socialist radical, cosmopolitan or ecological democracy. Just as the world is one of stratified structures and mechanisms, with wholes not reducible to parts, nor parts to wholes, so a genuine (radical) democracy should embrace all sites of power at all levels from the local to the global.
- A socialist political philosophy should be partly based on knowledge of those constraints which prevent human nature (and the rest of nature) from realising its potential. In that critical realism, linked to critical theory and Marxist political ecology, reveals the contradictions of global capitalism, and the associated causes and possible solutions to its current crisis, it is an appropriate foundation for revolutionary praxis [26].

Marxism and the political economy of capitalism

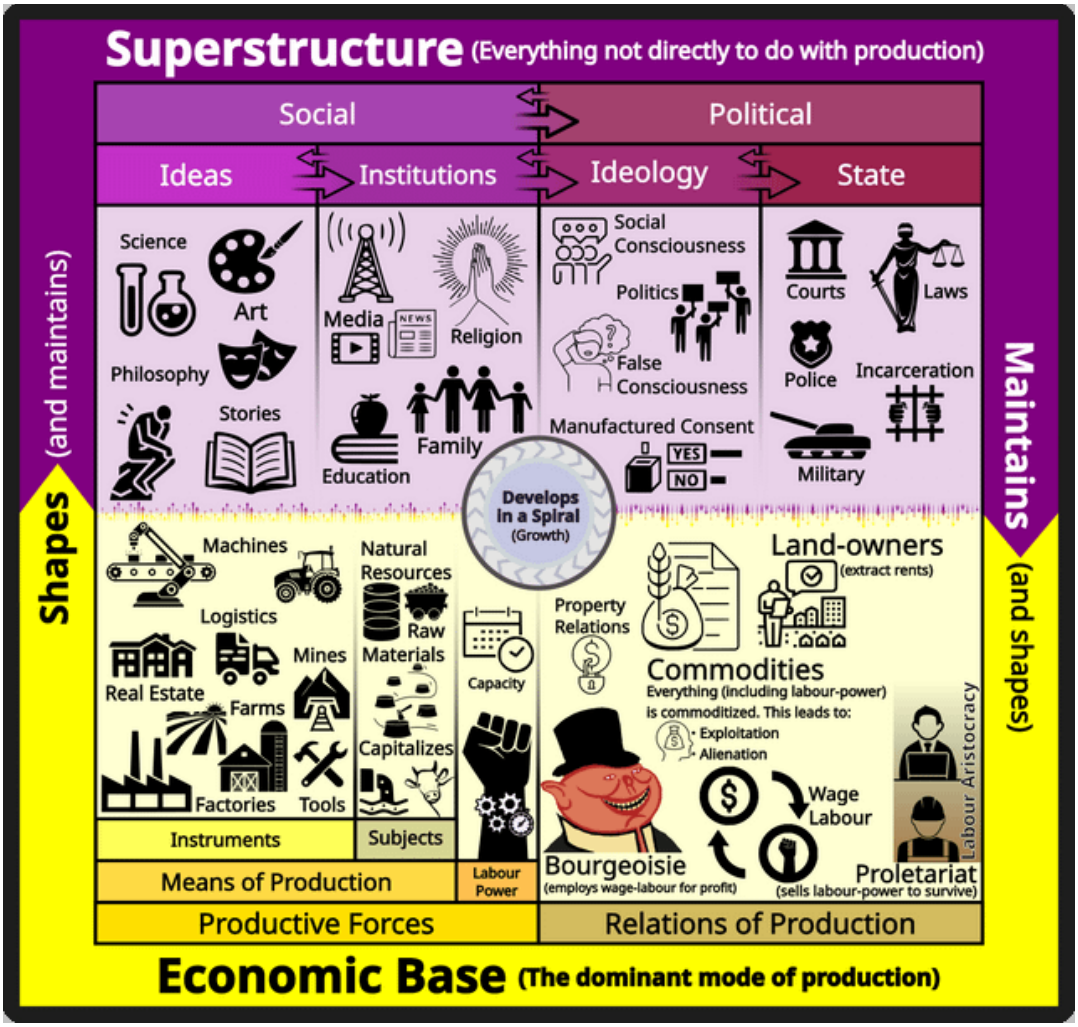


Figure 2.6 Base and superstructure in a nutshell [27]

Political economy models the economic, political and cultural structures and mechanisms that shape society, its social organisation and development. Marx's model of the **political economy of capitalism** accords with critical realism in that is sees an economic base to society (forces and relations of production) emerging from the necessity of people's need for subsistence together with a social and political superstructure developing to govern the resulting economy and society (see Figure 2.6, page 44). Base and superstructure are in a dialectical relation to one another as the figure suggests.

Note that in Figure 2.6 education is one of the institutions within the social superstructure. It takes private and public (state funded) forms and serves to reproduce workers and citizens who can help to sustain capital accumulation. Critical theorists claim that schooling functions as part of the 'ideological state apparatus' [28], manufacturing consent and transmitting false consciousness. This role is however contested with some students demanding a more critical and relevant curriculum and some teachers seeking to offer this. Critical school geography, underpinned by critical realism, is an example of such an offering.

Mainstream, populist right and populist models of political economy

While Marx provided us with a model to understand capitalism, mainstream and populist economists, politicians and policy makers have developed their own variants to meet their differing goals. Asked to compare and contrast mainstream, populist right, and populist left approaches to political economy in a table, with reference to mode of production, social relations and superstructure, Gemini presents Table 2.2. Each of these forms or models of political economy is associated with a philosophy of knowledge, an ontology and epistemology (Table 1.3, page 18). As with philosophy, how should these models, that shape and are shaped by geography, feature in the content of the geography curriculum? And how should critical pedagogy / agonistic debate guide discussion of their merits and demerits and the prospects they offer for human flourishing?

Dimension of political economy	Mainstream (Liberal / Social Democratic)	Populist Right (Nationalistic / Producerist)	Populist Left (Socialist / Anti-Austerity)

Mode of Production	**Globalised Capitalism:** Relies on free-market trade, deregulation, privatization, and global supply chains. Financialization and public-private partnerships are prominent.	**National Capitalism / Protectionism:** Favours domestic production, tariffs, and border controls. It opposes global economic integration while maintaining domestic private property.	**State-Directed / Collective Production:** Prioritizes nationalization of key industries, strict market regulation, heavy wealth redistribution, and public investment.
Social Relations	**Class Compromise / Meritocracy:** Views society through individual economic utility and merit. Social relations are mediated by contract and law, with a reliance on professional managerial elites.	**Cultural / National In-Group vs. Out-Group:** Reconfigures class into "hard-working native producers" versus "parasitic globalist elites" and non-native minorities/immigrants.	**Class Struggle (The 99% vs. The 1%):** Re-emphasizes the divide between the working majority ("the people") and the corporate/financial oligarchy ("the elite").
Superstructure	**Technocratic Constitutionalism:** Standard institutions (independent central banks, courts) shield the economy from politics. Embraces cosmopolitanism and pluralism	**Authoritarian Statism & Traditionalism:** Uses state power to enforce national sovereignty and traditional cultural values. Rejects supranational governance (e.g., EU, WTO, UN).	**Radical Democracy & Egalitarianism:** Seeks to democratize economic institutions. Uses popular mobilization to reclaim state power from corporate capture.

Table 2.2 Mainstream and populist political economies compared (Gemini)

Cannibal Capitalism, an expanded version of Marx's model of capitalism

Fraser's text *Cannibal Capitalism* provides an example of how contemporary Marxists continue to develop Marx's theory. As Table 2.3 (page 47 & 48) explains, in addition to economic injustices (class exploitation of wage workers, a tendency to crisis, lack of economic democracy – column one) capitalism shows non-economic injustices and crisis tendencies grounded in

the relations between the economy and the four non-economic conditions of its possibility. The result is an entwining of economic, ecological and social crises (as in critical realism's four planar model, page 7) with imperialism and racial-ethnic antagonisms as capitalism 'cannibalises' not only workers, but also the peoples and lands of the global South, carers (mainly women, who enable social reproduction), non-human nature, and public goods and services. All such injustices prompt political and social movements of resistance (labour, decolonial, feminist, environmental, anti-austerity, urban-municipal) and Fraser explores how these can combine to campaign for a 21st century socialism that promotes radical democracy and human flourishing. You will recognise similarities between her argument and those in chapter one,

Cannibal Capitalism	**21st Century Socialism**
An institutionalised social order that includes four non-economic conditions for the possibility of a capitalist economy: • a large fund of wealth expropriated from subjugated peoples, especially racialised peoples, • a sizeable fund of unwaged and under-waged labour devoted to social reproduction, • a large fund of free or very cheap inputs from non-human nature, • a large body of public goods supplied by states and other public powers. Each harbours social relations, social activities, and social wealth. When these background conditions are considered capitalism becomes a type of society – one in which the economy is distinct from but dependent upon background conditions that it 'cannibalises' (erodes, depletes, destroys) in its drive to accumulate capital. In additions to economic injustices (class exploitation of wage workers, a tendency to crisis, lack of economic democracy) capitalism shows non-economic injustices and crisis tendencies grounded in the relations between the economy and the four non-economic conditions of its possibility. The result is an entwining of economic, ecological and social crises with imperialism and racial-ethnic antagonisms.	**Social justice**. Systemic change should overcome class-domination AND asymmetries of gender and sex, racial/ethnic/imperial oppression and political domination across the board. Address BOTH labour concerns AND social reproduction, structural racism, imperialism, de-democratisation, and environmental degradation. **Institutional re-design** What capitalism has decided 'behind our backs' should be the subject of democratic institutional re-design. How the social spheres (economy, politics and culture) are delimited, organised and function should be re-thought holistically and democratically to overcome the separation of production from reproduction, exploitation from expropriation, the economic from the political, and human nature from non-human nature. The spheres should be mutually compatible and responsive with soft and porous boundaries**. The priorities among these spheres should be the nurturing of people, safeguarding nature, and democratic self-rule not commodity production and economic growth**. To ensure sustainability all the natural resources and services, public goods, and political capacities used up in social production and reproduction should be replenished. Institutional re-design would vastly expand the scope of democracy by re-framing what constitutes 'the political'. **Social surplus** Questions of what to produce and what to do with the surplus would become matters of democratic decision-making with priority given to unmet needs, both locally

This compound crisis gives rise to decolonial, feminist/anti-austerity/urban-municipal, and environmental, social movements along with movements seeking democratic global governance. Capitalism has a built-in democratic deficit, it erodes our autonomy, shapes our working and non-working lives, social development and all our futures. It cannibalises us by devouring our collective freedom to decide together how we shall live.	and globally, and the payment of historical debts to other societies. **Role of markets.** No markets at the top, no markets at the bottom, possibly markets in the middle Democratic allocation of social surplus at top, democratic provision of social needs via social provision of public goods and services at bottom. Markets, co-ops, commons, self-managed projects and other experimental forms of economy in the middle. Top and bottom are socialised and de-commodified.

Table 2.3 The author's summary of Nancy Fraser's arguments concerning Cannibal Capitalism and 21st Century Socialism

regarding authoritarianism and the erosion of democracy. You might consider the extent to which her advocacy of 21C socialism reflects Mouffe's advocacy of radical democracy and a populist left, is compatible with eco-socialism and degrowth, and how it expands on the outline of a popular left political economy in column four of Table 2.3. You might also consider how Table 2.3 offers a framework for a critical school geography (see Huckle, 2024 [29]).

Cultural Marxism, Gramsci, the Frankfurt School, and Mouffe

Cultural Marxism shifts its focus from the economic base of political economy to the superstructure, seeing the ruling class maintaining its power not primarily by force or by suppressing wages and working conditions, but by making its view of the world the 'common sense' view of the majority (a feature of populist left political economy neglected by Gemini in Table 2.2). Gramsci developed the concept of hegemony to account for such ideological control of citizens and chapter one focussed on the current period of change when what he described as 'morbid symptoms' have reappeared and culture wars for hegemony have broken out between the populist right and left. Mouffe' advocacy of a popular left seeking radical democracy, is an updating of Gramsci's cultural or post-Marxism that we will return to in chapter four.

Other key advocates of cultural Marxist were the members of the Frankfurt School [30]. Seeking to put modernity back on a path that would fulfil its promise (liberty, equality, fraternity), they focussed on ideology, alienation, language, and power arguing that technology and bureaucracy (technocracy) together with consumerism and popular media, encouraged forms of instrumental reasoning that put ethics to one side. Habermas [31] is the

member of the school who has had the greatest influence on critical education and pedagogy. His approach to critical theory focuses on language, political administration (the risk of administrative societies and states) and the roles of rational dialogue, public spheres, and free and open discussion in sustaining and extending democracy. It is compared to that of Marx in Table 2.4. Communicative action can accommodate ethics, discursive democracy is radical, steering crises are those between regimes of accumulation or Kondratieff waves, and legitimation crises result from fiscal crises when the state is unable to sustain citizens' support and populist parties gain voters. Habermas' theory of knowledge constitutive interests features in chapter four since it suggests that the geography curriculum can serve technical, practical, or emancipatory interests depending on what philosophy of knowledge it adopts.

Marx	Habermas
Geo-historical materialism	Comprehensive theory of rationality
Economy	Language, political administration
Labour	Interaction
Mode of production (reproduction)	Ethical systems
Transformation of nature to realise higher states of social development	Transformation of communicative action to realise hight states of moral development
Emancipation through socialising the means of production (and reproduction)	Emancipation through extending the realm of discursive democracy
Contradictions between the forces and relations of production (conditions and relations of reproduction)	Contradictions between steering crises and existing morality / politics
Economic crises	Legitimation crises
Class struggle	New social movements

Table 2.4 Main emphases in the critical theories of Marx and Habermas

The Frankfurt School led to the emergence of cultural studies, new social movements, and youth cultures in the 1950s and 1960s. A cultural revolution

occurred as youth swept aside the deference, conformism, sexism and conservatism of their parents and grandparents. Many called for a world liberated from capitalism, patriarchy, imperialism and oppression, while experimenting with alternative lifestyles and identities. Academics termed this new world 'postmodern' and associated it with the questioning of grand narratives or the unifying stories societies adopt focussed on progress. They opened social and cultural theory to a wider range of philosophies, beliefs, meanings and discourses, with some adopting social constructivism / interpretivism or a philosophy of knowledge that claims reality is simply the meanings we ascribe to it in language, discourse, and signs and symbols of all kinds (see chapter four).

The cultural Marxism conspiracy

Gramsci's idea that the conquest of power comes from the conquest of culture, was taken up by both the left and right with right thinkers in the US proposing a cultural Marxist conspiracy [32] whereby and the ideas of the Frankfurt School were subverting its youth via such mechanisms as the 'permissive society', political correctness, all things 'woke', and critical race theory [33], thereby leading to 'the decline of the West'. This conspiracy was taken up by the Tea Party and became part of Trump's MAGA movement. In the UK it was adopted by right think tanks and parties who employed it to attack the 'looney left', woke capitalism [34], mainstream politicians, and progressive education. The Conservative government updated the definition of 'terrorist ideologies' [35] to include climate activism and pro-Palestinian protest and passed the 2023 Public Order Act that Labour has failed to repeal [36]. Micheal Gove [37] (education secretary, 2010 to 2014) attacked those teachers and civil servants who opposed his reforms as part of 'the blob' (the right's Marxist enemies).

Postcolonial and decolonial theory

While the cultural revolution was occurring in the global North, radical movements in the global South were adopting new postcolonial and decolonial ways of thinking about the world (see Table 2.5). Postcolonial theory examines the cultural, literary, and psychological aftermath of colonialism, mostly focusing on regions like South Asia and Africa after formal independence. Decolonial theory (or decoloniality) treats colonial domination as an ongoing, unbroken system tied to capitalism and Western

modernity, originating largely from Latin American scholarship. Both are responses to capitalism 'cannibalising' the lands and peoples of the global South (see Table 2.3, page 47& 48).

Feature	Postcolonial theory	Decolonial theory
Origins	Rooted in South Asian, Middle Eastern, and African diasporic literary and cultural studies (e.g., Edward Said, Homi Bhabha).	Rooted in Latin American scholarship, world-systems analysis, and indigenous studies (e.g., Aníbal Quijano, Walter Mignolo).
View of the 'colonial'	Focuses on hybrid identities, cultural representation, and how colonial discourses shape post-independence societies.	Focuses on the "coloniality of power"—the hidden, enduring matrix of race, knowledge, and capitalism that survived the end of direct rule.
Relationship to modernity	Often works within or critiques Western epistemology using literary critique and discourse analysis.	Seeks to "delink" entirely from European modern thought and rebuild non-Western modes of thinking and existence

Table 2.5 Postcolonial and Decolonial theories compared (Google Gemini)

The global social theory website [38] provides an overview of thinkers and concepts linked to postcolonial and decolonial theory, while the Progressive International [39]links radical thinkers and movements around the world. Pluriverse [40], a post-development dictionary outlines one hundred reformist (ontologically dualist and epistemologically mainstream or critical) and transformative knowledges (ontologically holist and epistemologically critical), see Table 2.6. The latter challenge the 'modernist ontology of universalism' [41] by offering a 'global tapestry of alternatives' that represent a 'worldwide confluence of transformative economic, socio-political, cultural and ecological visions'. While the editors of Pluriverse dismiss reformist knowledges, there are many entries in the transformative category that find expression in populist left movements in the global North, for example agroecology, degrowth, direct democracy, eco-socialism, ecofeminism, pedagogy, permaculture, radical ecological democracy, and the transition

movement. You might explore some of the transformative knowledges listed in Table 2.6 with which you are not familiar and reflect on which of those listed can contribute to the 21st Century socialism envisioned by Fraser in Table 2.3.

Reformist Solutions are 'a range of innovations devised mainly in the global North and promoted as progressive 'crisis' solution'. p. xix	**Transformative Initiatives** are 'worldviews and practices, old, new, local and global, emerging from indigenous, peasant and pastoral communities, urban neighbourhoods, environmental, feminist, and spiritual movements. They reach for justice and sustainability in a multiplicity of ways.' p. xix
BRIC economies, Circular Economy, Climate-Smart Agriculture, Development Aid, Digital Tools, Earth System Governance, Ecomodernism, Ecosystem Service Trading, Efficiency, Geo-Engineering, Green Economy, Lifeboat Ethics, Non-Extractivism, Reproductive Engineering, Smart Cities, Sustainable Development, Transhumanism. 'A critical review of their rhetoric and practice exposes internal incoherences and suggests that they are likely to become ecologically wasteful profit-making distractions' p. xix	Agciro, Agdals, Agroecology, Alter-Globalisation Movement, Alternative Currencies, Arbitration for Sovereign Debt, Autonomy, Biocivilization, Body Politics, Buddhism and Wisdom-based Compassion, Buen Vivir, Chinese Religions, Christian Eco-Theology, Civilisational Transitions, Commons, Community Economics, Communalidad, Convivialism, Cooperative Ecosystems, Country, Deep Ecology, Degrowth, Democratic Economy in Kardistan, Direct Democracy, Earth Spirituality, Eco-Anarchism, Ecofeminism, Ecology as Culture, Eco-Positive Design, Eco-socialism, Ecovillages, Energy Sovereignty, Environmental Justice, Food Sovereignty, Free Software, Gift Economy, Gross National Happiness Bhutan, Hinduism and Social Transformation, Human Rights, Hurai, Ibadism, ICCAs – Territories of Life, Islamic Ethics, Jain Ecology, Judaic Tikkun Olam, Kamersa Assike, Kawsak Sacha, Latin American and Carribean Feminism, liberation Theology, Life Projects, Mediterraneanism, Minbimautisiiwin, Nature Rights, Nayakrishi Andolon, Negentrophic Production, New Matriarchies, New Water Paradigm, Open Localisation, Pacific Feminisms, Pacifism, Peacewoman, Pedagogy, Permaculture, Popular Solidarity Economy, Post-Economia, Prakritik Swaraj, Queer Love, Radical Ecological Democracy, Revolution, Rural Reconstruction, Sea Ontologies, Sentipensar, Slow Movement, Social Ecology, Social Solidarity Economy, Tao Worldview, Transition Movement, Tribunal on the Rights of Nature, Ubunti, Undeveloping the North, Wages for Homework, Worker-led Production, Zapatista Autonomy

Table 2.5 Reformist and Transformative Knowledges outlined in Pluriverse, a Post-Development Dictionary [42]

Neoliberalism and the transition to post-neoliberalism

Having reviewed the critical understandings of reality offered by critical realism and its followers (Marxist, cultural Marxist, and postcolonial / decolonial), we should now focus on neoliberalism, the dominant way of ordering and thinking about the world during the past forty years. It had a profound impact on mainstream (liberal democratic) politics and as we saw in chapter one, Burnham came to power promising to follow a different path.

The rise of the populist right, autocracies, and administered societies and states outlined in chapter one, owe much to the failures of neoliberalism to deliver on its promise (Table 2.6). While liberalism values individual freedom, privacy, autonomy and private property, and generally means putting the rights of the privileged ahead of others, neoliberalism [43] is a more explicit and aggressively pro-capitalist version of liberalism.

The ideology	The promise	The reality
Citizens should be freed from bureaucracy.	Neoliberals supported politicians who crushed powerful labour movements, privatised public companies and marketized the welfare state. Thay did this in the name of freedom.	Society is as tightly regulated, surveilled and controlled as it was in the period 1945 to 1975. What changed with neoliberalism was who was planning society and whose interests they were serving. Workers were now excluded from both corporate and state planning.
Big government (the state) is inefficient and should be reduced in size.	Societies are too complex to be governed by a centralised authority without unintended consequences. The market is superior to government. The size of government (the state) should be reduced.	Corporations operating in a market that they plan along with their political allies are just as capable as governments of wielding largely unaccountable power. The size of the state has not reduced and its main function is now supporting capital's pursuit of profit and clearing up after crises caused by its greed.
Public spending is wasteful.	Neoliberals claim to reduce public spending and deliver tax cuts. Welfare and public services are deemed inefficient.	Public spending has not fallen, ii has simply been redistributed. States now spend billions on supporting big business and the wealthy with subsidies, tax breaks and bail outs.
Public services should be privatised.	Inefficient public utilities should become efficient profit-maximising corporations.	National infrastructure was transferred to an oligarchy of quasi-public corporations whose profits were guaranteed by the state.
The citizen should	Citizens are urged to become entrepreneurs or 'mini-capitalists' who manage their	Citizens no longer engage in conflict and debate in the political sphere. They become floating voters supporting the

become an entrepreneur.	own portfolios of assets and liabilities.	party they perceive to support their own interests. Politics is depolitiised.
The free market	The free market delivers competition between firms and governments that leads to efficiency and promotes both private and public interests	The reality of capitalism is not numerous small businesses competing with one another for market share but a few vast enterprises co-operating with one another and with states. We live in a world of pervasive private planning that marginalises public interests.
The public interest	Corporations make profits for their shareholders and jobs and products that benefit all. Wealth trickles down.	In largely 'unfree' markets outcomes are not efficient for all. Profits are distributed to the already wealthy and without strong unions, workers face lower wages and higher prices. Wealth 'trickles' up rather than down.
Consumer choice	The market guarantees consumers freedom of choice.	Consumers have limited real choice about the products and services they consume.
Political and economic power are separate	Corporate and state power serve fundamentally different interests. The state is a neutral arbitrator between competing interests. Firms and states are enemies in the free market.	State policy is shaped by the balance of power in society. Politicians and state departments implement laws and regulations in the interests of those best able to influence them. Firms and states are often powerful allies, especially in times of crisis.
Democracy should be replaced by technocracy	Policies created by technocratic elites are superior to those created democratically by citizens	The prospect of government by the people has been replaced by rule by technocratic elites and vested interests. Representative democracy has been suppressed.

Table 2.6 **Neoliberalism, the promise and reality** (Based on Blakeley, 2024 [44])

Its core political imperatives are to privatise public services, deregulate labour markets and the environment (fewer rights and protections for workers and nature), attack labour unions, cut taxes on the rich, contract public spending and welfare entitlements, and force those services, like schools, that remain in the public sector to behave as much as possible like competitive profit-seeking businesses. The rise of neoliberalism [45] has resulted in the ruling class imposing its worldview (its powerful knowledge of the world) on the rest of society as 'common sense' or the widely held belief that there is no alternative to neoliberal capitalism (see Fisher on capitalist realism [46]).

Since 2020, shocks to supply chains, linked to the COVID pandemic, Brexit, wars in Ukraine and the Middle East and a 'new cold war' between the US and China, have led some economists, such as Gabor [47] to theorise an

emerging post-neoliberalism [48] linked to emerging forms of political economy (Table 2.7).

Neoliberalism	Post-neoliberalism
Free and open markets	Protection of key sectors of economy
Globalisation – offshoring	Deglobalisation – onshoring
Small state – limited government intervention. Managerial state	State is back – more government intervention, Transformative state
Investment relies on private sector	State prepared to borrow to invest
Industrial and regional policy left to private sector	Revival of state's role in industrial and regional policy. Planning is back.
Reliance on USA for security	Europe and UK increase arms expenditure as US withdraws support
Privatisation the orthodoxy	Nationalisation of key sectors, e.g. railways, steel
An economy rooted in finance, consumerism and globalism	An economy rooted in production, work and localism

Table 2.7 Neoliberalism and post-neoliberalism compared

Bidenomics and Starmerism can be seen as failed attempt to break with neoliberalism, while the end-times fascism associated with Trump's second term (chapter three) and Burnham's emerging political economy in the UK (page 20) are current attempts. each with a model of political economy and associated ideology. Burnham's political economy [49] reflects foundational economic thinking [50] in its support for public control of essentials, mass social housing, regional devolution, and challenging wealth extraction. It has the potential to focus on basic needs, foster human capabilities, and work in tandem with degrowth in ways that will now be considered.

The foundational economy

The foundational economy [51] works within the framework of **moral economy** (a system of exchange and production based on shared ethical principles, social norms, and mutual responsibilities, rather than just market-driven profit motives). and uses the concepts of **capabilities** and **use values** to radically reorient our ideas of how our economy, or economies, should function (Sayer, [52]). The FE Collective (Arcidacono et al [53]) makes concrete proposals for a socially democratic alternative to neoliberal capitalism that prioritize well-being over economic growth and reconfigures relations between the state, market and civil society in novel ways. It

recognises that mainstream economics is positivist and has sought to exclude basic human values with the result that the global system is in crisis and financialisation has severely eroded public services (Næss & Price [54]). It should to be replaced by a moral economy that sees citizens as deserving of services that develop their capabilities and so allows them to flourish. Sayer notes that the FE brings the capabilities approach [55] to human development and economic organisation together:

Whereas the capabilities approach is normally discussed purely as a normative framework, in abstraction from particular forms of economic organisation, Foudational Economy brings these together at least in outline form. This is particularly welcome, as for too long the capabilities approach has been discussed in abstraction from actually existing economies and their constituent practices with all their failings and injustices, so that it merely appears as a list of good things that threaten nothing. This allows it to be endorsed by a broad spectrum of political views for virtue signally purposes. But if we ask how acturally-existing economic practices measure up in terms of what they support or restrict the capabilities available to people, then the approach has a critical edge. Sayer (2019) p. 43

The FE refers to the basic requirements of civilised life needed by all citizens, irrespective of their income and location, that are provided by material and providential foundational economies (see Table 2.8, page 53). Shifting the focus of development to these economies would improve the welfare of those who do not have access to private provision; improve access to such basic services as the internet; and increase employment in such sectors as home insulation and the care of children and the elderly. Since 1980 welfare provision in the UK and elsewhere in Europe has been eroded by neoliberalism through processes of privatisation, outsourcing, and austerity (see O'Brien on the asset class [56]). Austerity and investment by financial capitalists in the FE have resulted in a crisis of public services, the indebtedness of many local governments, and a growing number of school students living in poverty and suffering from mental ill health. It has also contributed to the rise of the **populism** as citizens seek answers to their justifiable grievances.

The key elements of the FE are outlined in a manifesto (MUP [57]). It rests on a mix of public, private and intermediate providers and reforms outsourcing through a system of 'social licensing' requiring social returns on

investment; placing limits on debt financing; and guaranteeing labour and environmental standards. It is just one of the economic innovations linked to radical municipalism Thompson [58]) (see Burnham's political economy, page 20) that include devolution of economic powers to cities and regions and provision of **universal basic income and services**. Manchesterism [59] is a project in which these ideas have found partial application and students might consider them when studying lesson five of the GA's resource Post-industrial change in the UK, a case study of Manchester [60].

Wahlund and Hansen [61] compare the FE and doughnut economics (page 39) offering a table (Figure 2.8, page 58) that compares their economic models, normative goals, and attention to redistribution. They conclude that there are good reasons for combining the conceptual model of doughnut economics with the explicit policy proposals suggested by the foundational economy. While there are similarities, the models differ in their geographical focus, environmental concerns, and the applications of their policy advice. Wahlund and Hansen suggest that the foundational economy would benefit from a deeper engagement with the socio-environmental perspectives that are central to Doughnut economics.

Table 2.8 (page 58) **Key characteristics of doughnut and foundational economics (Wahlund & Hansen, 2022, p. 176)**

		Doughnut economics	Foundational economy
Economic model	Economic design	Regenerative and distributive by design	Collective provision
	Conceptual model	Socioenvironmental system	Social system
	Dimensions/sectors central to the economy	**Social foundations:** food, health, education, energy, water, housing, networks, income and work, peace and justice, political voice, social equity, gender equality. **Ecological boundaries**: the nine planetary boundaries established by Rockström et al. (2009)	**Material foundational economy:** e.g., gas, water, transportation systems, and food. **Providential foundational economy:** e.g., healthcare, education, social care, police, public administration
Normative goals and economic measurements	Economic metrics	Change from GDP measurements to plurality of metrics which say something about the distribution and quality of economic growth, the plurality of economies, and the hidden values of social reproduction and ecosystem services	Move from short-term measurements of point values, such as quarterly earnings reports, to indicators of long-term values for residents
	Economic goals	Ensure everyone's right to the basic social foundations without overshooting the ecological boundaries	Ensure access and quality of foundational provision to all residents
	Growth	Push the economy toward absolute decoupling of GDP from nonrenewable resources *or* transition to a low- or degrowth economy	Limit growth within foundational sectors
	Innovation	Steer funding and loans toward social and green innovations	Shift focus from exogenous to foundational sectors
Economic distribution	Social polarization	Redistribute the value of land, money, labor, technology, and knowledge	Provide access and quality of foundational services to all Ensure good working conditions within the FE
	Geographical inequalities	Channel part of development aid directly to people living in poverty, introduce global corporate taxes to increase revenues for public services in developing countries, and create global knowledge commons	Focus economic development policy on foundational activities, which are present everywhere
	Mechanisms for redistribution	Reform ownership of land, money, labor, technology, and knowledge to balance incomes Reform tax systems to distribute incomes from wealth	Establish a social license system for corporations in foundational economy sectors. Finance investments in foundational economy infrastructure through taxes on wealth

Critical physical and human geography

Critical physical geography [62] combines critical attention to relations of social power with knowledge of a particular field of biophysical science or technology in the service of social and environmental transformation. It assumes that we cannot rely on explanations grounded in physical or critical human geography alone because physical landscapes and social systems are as much the product of unequal power relations, histories of colonialism, and racial and gender disparities as they are of hydrology, ecology, and climate change. Critical physical geography is thus based in the careful integrative work necessary to render these deep interconnections between biophysical and social systems understandable.

A growing body of research asks what are the opportunities for a more critical physical geography **and** a more physical critical geography? What new research, teaching, and political practices can be built on a foundation of geomorphology, climate science, biogeography, political-economy, political-ecology [63], subaltern studies, and social studies of science? Is critical environmental geography [64] what is needed to help global society realise sustainability?

The UN reports [65] limited progress in realising its sustainable development goals and this is largely the result of nation state failing to implement sustainable practices.

When confronting these challenges, most OECD and EU governments continue to struggle with implementing sustainable policies. Short-term, ad hoc measures often take precedence, while rising debt shifts an unfair burden onto future generations. Persistent inequalities in labour markets, education and health care jeopardize the long-term viability of entire societies. Meanwhile, most countries fail to prioritize the efficient use of natural resources for long-term sustainability. [66]

There are critical geographers among those who consider democratic green socialism (eco-socialism) and associated forms of planning and governance to be key to realising sustainability (living within planetary boundaries) and they can be guided by critical realists who offer a unified model of the natural and social sciences and regard the ecological crisis as but one of the dimensions of the current global crisis. Climate change is one topic that illustrates the need for a

critical environmental geography that is interdisciplinary and researches such topics as climate change / global heating.

Climate change, geography and interdisciplinarity

Geography is interdisciplinary it that its practitioners draw concepts, ideas, methods and values from the discrete disciplines that comprise the natural and social sciences and the humanities. Geographers are therefore well placed to study the phenomenon of climate change (global heating) and advocate transformational geographies beyond accumulation and growth [67], provided they are guided by an underlying philosophy of knowledge that allows them to combine the specialist insights that the various 'adjectival' geographies provide.

In the edited collection *Interdisciplinarity and Climate Change,* Bhaskar and Parker claim that critical realism is uniquely capable to fulfilling this role:

Critical realism is uniquely capable of situating the weaknesses of actualist, reductionist, mono-disciplinary accounts of science and the necessity for interdisciplinary work in dealing with complex concrete phenomena such as climate change Bhaskar & Parker [68] p. ix

In the opening and intellectually demanding chapter of the same text, Bhaskar relates the many branches and developments of critical realism (some covered later in this text) to climate change. In relation to ontology, he warns against confusing what we know about climate change with the phenomenon itself (the epistemological fallacy) and draws attention to the need to find explanation in the totality of a laminated system of coalescing causal mechanisms operating at different levels and at different scales. These include the bio-physical, social and cultural levels, the latter containing discourses that express different views on climate change such as those that support right and left populism.

Bhaskar insists that explanation alone is insufficient:

Radical intellectuals need to show in detail how alternative futures can be coherently grounded in the deep structures of what already exists, of what people know and have. Without this exercise they will not be able to make out a persuasive case for change, Bhaskar [69] p. 23

Explanatory critique of the society that is causing climate change should lead to concrete utopianism and a theory of transition to a more sustainable society with energy sufficiency and security and a stable atmosphere. Bhaskar suggests that pedagogies based on problem-solving and case studies can aid consideration of such theories and the curriculum challenge associated with this chapter requires

you to develop a unit that extends students' capabilities to critical consider and plan a future energy utopia for the UK.

David Harvey's ontology

To conclude this chapter, we can consider David Harvey's ontology. He is among the most influential Marxist thinkers to have shaped geography and in their critical introduction to his thought Castree, Charnock & Christophers [70] summarise his ontology after admitting that they are glossing over some of the philosophical complexities.

- Processes, flows and relationships are as important as objects, entities and things;
- Processes are, as capitalism demonstrates, often structured into totalities, systems or wholes;
- These totalities can be contradictory in their operation, creating forces of stability and change;
- Specific parts or 'moments' within a system offer insights about the whole because they, in effect, internalise all other parts or moments;
- Relatedly, parts and moments of a bigger system can be both causes and effects interchangeably; and
- Processes do not simply have a history and geography but can constitute their own spatio-temporality. (Castree, Charnock & Christophers, 2023, p. 47)

Critical realism suggests that it is the relationships between things in the real domain that causes the processes / mechanisms that drive flows of energy, materials and information. Marx's model of political economy claims that economic, social and cultural systems are emergent from bio-physical systems and that agreements and contradictions between different social classes create forces of stability and change. Postcolonial / decolonial theory further supports such analysis by adding the dimension of coloniality.

The phenomena that geographers study, for example global heating, are specific parts or moments within the global capitalist system. They can provide insights into that system and can be both cause and effect of its ongoing development. Such thinking helps us to rethink the social construction of nature, the concept of sustainability, and the need for new forms of political economy and global

governance and citizenship to deliver sustainability. It also helps us rethink the ways in which social processes exist in time and space and shape (and are shaped by) a changing geography.

Further reading and viewing

Dima Khazem [71] elaborates on the principles of critical realism and their relevance to sustainability, climate change, and global learning. Her article supports the outline of critical realism's approach to ontology, epistemology and methodology in chapters two, four and five of this text. To what extent are the principles Khazem outlines reflected in the GA curriculum resource Global Inequalities and the Climate Crisis [72]?

Leigh Price [73] argues for an enlightened, commonsense approach to environmental education with special reference to climate change. She argues that 'thinking in terms of a layered reality which includes structures and mechanisms allows us to discuss how the Greenhouse Effect continues to act'. How does she suggest its action is mediated by the workings of society? What are the implications of her argument for the teaching of climate change?

Watch An Introduction to Doughnut Economics [74], The Degrowth Paradox [75], and What is the Foundational Economy [76]. Are these approaches complementary? Are they necessary to move us towards post-capitalism and sustainability? Can they be included in the geography curriculum you currently teach?

To what extent do you students hold a dual understanding of society and nature rather than a non-dual or holistic view? Read such research findings as those of Sheldrake & Walshe [77] and Reed, Beames & Macleod [78]. The latter show how young people construct their understandings and interpretations of what nature 'is' through networked environments such as Instagram, TikTok and Minecraft. These networked constructions often contextualised young people's direct, in-person interactions with nature and demonstrated ways in which these online spaces influenced how nature was perceived and understood.

Noel Castree [79] offers a Marxist interpretation of how the biophysical world is entrained in the dynamics of capital accumulation especially during the period of neoliberalism. He argues that Marxist geographers continue to offer important insights into a 'more than capitalist world' that is nonetheless, utterly dominated by contradictory logics of growth, economic competition, endless technological

innovation, uneven development, accumulation by dispossession and crisis. Marx's attention to capitalism as an expansive 'totality' is critical, obliging geographers (including teachers of geography in schools) to attend to how different places, people and political projects are brought into a single, if exceedingly complex, universe. He concludes that the research frontier for Marxist geography focuses on the question of what sorts of political visions and proposals will gain traction in a variegated yet tightly connected world where capitalism is manifestly dangerous for people and planet? What opposition do elements of Marxist geography face when introduced into school geography?

Consult Andreas Malm's reading guide to ecology and Marxism [80] Clearly there are many partly competing and partly complementary schools of thought and you should consider whether such theories / concepts as the second contradiction of capitalism, the metabolic rift, the political ecology of the world system, and energy and capitalism, warrant consideration in secondary school geography. The section on climate politics is particularly relevant to teaching about global heating but note Malm's recommendation of Naomi Klein's *This Changes Everything: Capitalism vs the Climate* [81]. Castree's review of Malm's book *The Progress of This Storm* [82] mentions Malm's dismissal of constructivism, hybridism, and the new materialism and his search for a theoretical position between Cartesian dualism and a 'fairly shapeless holism'. This position, which Malm terms climate realism, can be considered to reflect critical realism and leads him to base his understanding of global heating on Marx's historical materialism.

Simon Boxley's chapter [83] on green Marxism in the *Encyclopaedia of Marxism and Education* covers its origins and its relations to actually existing socialisms, eco-activists, eco-revisionists, and eco-Marxists, all in the context of education. He also considers related branches of green pedagogy: revolutionary critical eco-pedagogy, eco-socialist pedagogies, and total liberation pedagogies, and deeper green variants, together with their themes of the reproduction of labour, alienation, and ideology. He concludes 'the seeds of eco-socialism and communism are alive and germinating within the darkness that lies at the heart of neo-liberal capitalist ideology. As diligent gardeners, Green Marxist educators water and attend to those shoots that dare to erupt into the sunlight'.

Watch this introductory lesson on political ecology [84] and review the background information it provides for teachers. What of this can be incorporated into the curriculum you teach?

Smith argues that China's driver of environmental harm is not simply the market but 'statist-nationalist extra-economic drivers' leading to 'overproduction, over consumption, overdevelopment, profligate resource consumption and wanton dumping and venting of pollution' (Smith 2020 [85] xxi–xxii). How would you explain these drivers to students? Are such drivers in operation elsewhere in the world?

Discussion

Does school geography suggest that there is more to reality than that which we experience? How does the history of geography as a school subject reflect a growing understanding of and attention to 'deep' structures and mechanisms that lie beyond our experience?

Does school geography focus on the actual and empirical domains at the expense of the real domain? If so, is this a greater feature of the human geography taught rather than the physical geography taught? Is such ontological actualism a result of learning theory that suggests concrete experiences and events are more real to students than abstract structures and processes? Or are there other causes linked to the history of the subject, its links to colonialism and imperialism, and its role in sustaining the British empire, capitalism and more recently neoliberalism?

Staying with the history of school geography in the UK, what role, if any, has it played in fostering false consciousness, ideology, and fetishism? What literature would you cite to support and/or deny is role in obscuring the true nature of reality and so fostering these outcomes? You might answer this question with specific reference to the workings of global capitalism as it shapes nature, place and space.

How would you introduce your students of the dialectical nature of the world and the four principles of dialectics?

What geographical phenomena would you use to illustrate the concepts of emergence, stratification and co-determination?

How can case studies of rainforests and cities as ecosystems be used to illustrate the differences between natural and social systems and the natural and social sciences (physical and human geography)?

Are doughnut economics, degrowth, and the foundational economy, economic models that should be explored by 14 to 18-year-olds in their geography lessons? Should these lessons question whether the models help to move us

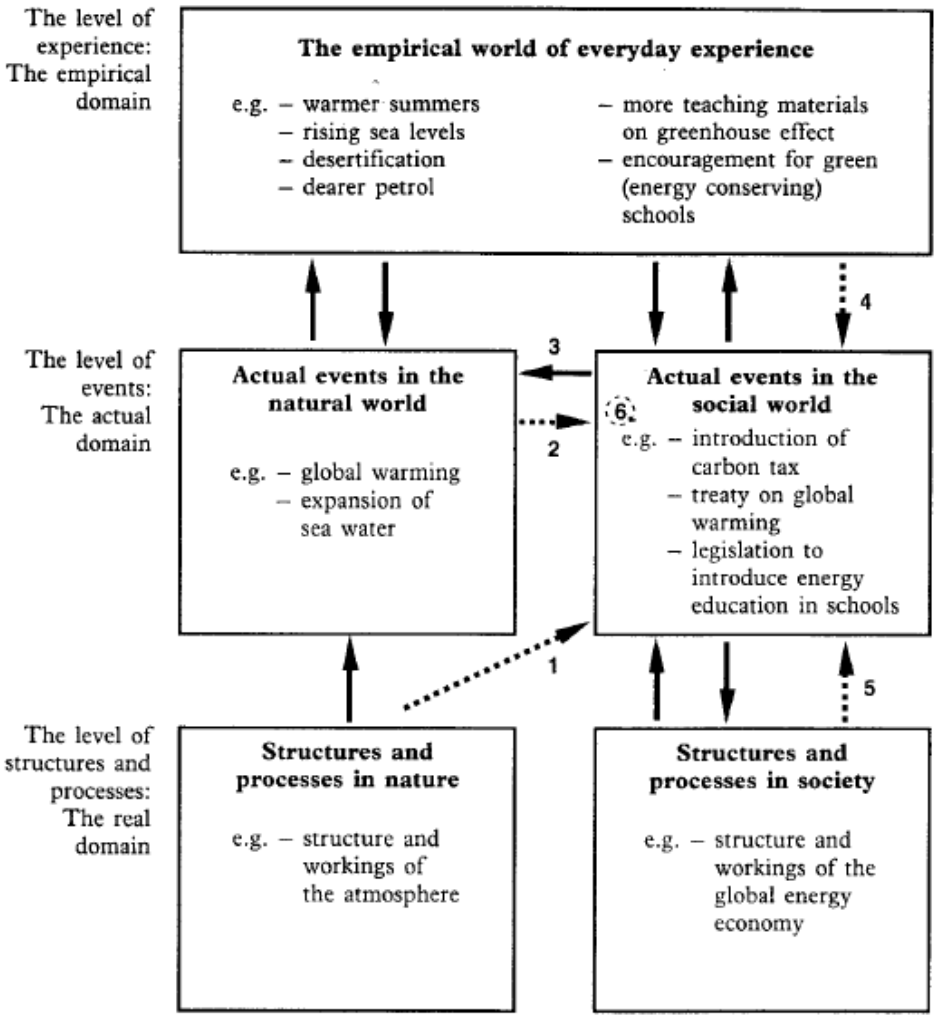
towards societies that foster human capabilities and universal human flourishing?

Figure 2.9 (page 66) is a depiction of how the three domains of reality can be applied to an understanding of global heating. How should a teacher of key stage 4 geography plan a curriculum unit to ensure that all the domains and all the solid and broken arrows are featured? What are the implications of interpreting 'our interpretation' to include Indigenous knowledge?

In what ways are the writings of Castree, Malm and Klein relevant to school geography? How can Boxley's green Marxist perspective be incorporated into the geography curriculum in ways that avoid charges of political bias and indoctrination?

Does education for sustainable development and global citizenship (ESDGC) as advocated by Unesco continue to provide a relevant framework for a critical school geography as explored and developed in the author's 2020 text *Critical School Geography*?

What of David Harvey's ontology is explained by chapter one and what awaits explanation in subsequent chapters?



Key

Interactions between empirical, actual and real domains

Human interpretations of the natural and social worlds that shape human action

1 Our interpretation of structures and processes in the natural world
2 Our interpretation of events in the natural world
3 The actual impact of events in the social world on those in the natural world
4 Our interpretation of our everyday experience
5 Our interpretation of structures and processes in the social world
6 Our interpretation of events in the social world

Source: based on Johnston (1989, p. 61).

Figure 2.9 A realist view of nature, society and climate education (Huckle 1993 [86] based on Johnson 1989 [87].

Curriculum Challenge Two A future energy utopia

In response to Bhaskar's remark about alternative futures (page 60), you might develop a curriculum unit that challenges students to design a future energy utopia.

Bastani outlines such a utopia in the chapter 'Limitless Power: Post-Scarcity in Energy' in *Fully Automated Luxury Communism* [88]. He argues that an industrial revolution based on fossil fuels has led to the arrival of the Anthropocene; that the consequences are severe but survivable; that energy wants to be free (a sufficiency of it should be equitably provided free as a basic need); that the sun supplies the earth with so much free energy that this is possible; that the falling cost of renewables renders a 'quiet revolution' of the energy economy in both the global North and South; and that this revolution should be accompanied by energy conservation, All this can be done to meet a target of absolute zero rather than net zero. Renewables can supply all energy needs with the help of batteries, other forms of storage, the deployment of interconnectors to other countries, and energy conservation. There is then no need to offset carbon, deploy nuclear power, or such geo-engineering as carbon capture and storage, as envisaged by those who seek net zero.

Your curriculum unit should focus on current debates on energy prices and the 'cost of living' and whether energy should be supplied by private corporations, utilities owned by national or local governments, or community owned utilities. It might introduce doughnut economics, degrowth, and democratic socialist planning using such key resources as:

Commonwealth's *How Britain's Electricity System Works – and Why It Needs an Overhaul* [89].This is in three parts: how the UK energy system operates (extraction, power generation, transmission and distribution, supply, role of price cap); problems regarding bills (wholesale market pricing, vital need delivered by for-profit companies, planning infrastructure); and the alternative of a shift from a system of private financing, ownership and governance to an energy future based on public investment and public ownership, non-financial governance, and social and environmental priorities. Transmission and distribution networks would be in democratic public ownership and would operate outside the wholesale market pricing system. Much of this is intellectually challenging for 14 – 18 year old students, but at its core is the case for the public ownership of

energy as outlined by Blakeley 2022 [90]and Unite's 2025 report *Energy Profiteering* [91].

Prime Minister Burnham announced the creation of Great British Grid [92] as a new publicly owner branch of Great British Energy [93] at the 2026 Labour Party conference. He claimed it would accelerate electricity infrastructure delivery, increase competition, and reduce connection times for businesses

Key concepts to introduce include privatisation [94], the privatisation premium [95] and fuel poverty [96].

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