**The Political Economy of Street Trees**

**Abstract**

Over the last 50 years there has been a paradigmatic shift in the climate of ideas and governing orthodoxy from Keynesian-corporatism to neoliberalism. Such paradigms provide the philosophical goals that are pursued by policy and practice and determine what are considered to be the legitimate means of attaining those goals. We use evolving policy and practice relating to the protection and management of street trees as a vehicle for examining the relations between the competing paradigms of corporatism and neoliberalism, and the ways that they are expressed ‘on the ground’. In doing so we highlight the tensions between the amenity value and the economic value of street trees and between techniques for their estimation. The legitimacy of measures of the former, such as Helliwell and CAVAT, that embody corporatist concepts are subject to continuing challenges based on their (lack of) scientific rigour or economic principle. The strengths of measures of the latter, such as i-Tree, are emphasised on the same grounds. Such is the success of these efforts that the equation of the value of a street tree with an estimation of the price that people will pay for the ecosystem services it delivers is not seen as controversial.

**Introduction: a changing political economy**

As many of the chapters in this book demonstrate, street trees make a valuable contribution to urban life by, for example, enhancing citizens’ wellbeing, increasing biodiversity and contributing to the mitigation of climate change. While the benefits of street trees may be clear, there is continuing debate about how their role in the city might best be recognised and factored into decision-making. Various approaches to measuring the benefits and costs of street trees have been developed. Discussion has tended to focus on their contrasting technical strengths and weaknesses. There have also been philosophical criticisms of the very idea that a financial figure has to be attached to a tree for it be properly valued. In this chapter we explore the relations between these two perspectives, the concrete and the abstract, by examining ideational change in English political economy and its impact on the deployment and legitimacy of different methods of defining and measuring the value of a tree. The context for this analysis is the paradigmatic shift in the climate of ideas and governing orthodoxy that has occurred since the late 1970s.

The accumulation of crises besetting the Keynesian-corporatist state – such as deindustrialisation, stagnant growth, rising inflation and unemployment, and declining profitability[[1]](#footnote-1) – led to the rise of an alternative, more classical liberal vision of a smaller state guiding the market[[2]](#footnote-2). The election of right-wing governments in Britain and the USA, among others, marked the beginning of the institutionalisation and internationalisation of neoliberal ideas and their elevation to hegemonic nostrums; nostrums that privileged private decision-making and free exchange over public ownership. There followed the dismantling or reorientation of many of the key aspects of the Keynesian-corporatist state. To this end, the power of trade unions and collectivist bargaining was broken, large sections of government-owned industries were privatised, and the introduction of the New Public Management brought various practices and mentalities of the private sector into the public sector[[3]](#footnote-3). The reach of spatial planning was also challenged with the aim of reducing the scope for local discretion[[4]](#footnote-4).

Despite increasing inequality and its failure to avert the financial crash of 2008, neoliberalism remains at the heart of the international economic regime[[5]](#footnote-5). Its resilience has been due in part to the concerted efforts of its champions to work against challengers by seeking new ways to (re)legitimise the paradigm, adapting it to changing circumstances[[6]](#footnote-6). At the core of neoliberalism is the intent to convert the political into the language of the economic, particularly in terms of quantification[[7]](#footnote-7). Markets (or their proxies), not democracy *per se*, allow the efficient distribution of resources and, in turn, individual liberty. A defining characteristic of all variants of neoliberal reasoning is its commitment to economic indicators, particularly the market price system.

“From a neoliberal perspective, price provides a logical and phenomenological ideal of how human relations can be mediated without the need for rhetorical, ritualized or deliberately performative modes of communication. Indeed, price may even suggest that peaceful human interaction is feasible without speech at all. The reduction of complex and uncertain situations to a single number, as achieved by a market, appears as a route out of the hermeneutic pluralism and associated dangers of politics.”[[8]](#footnote-8)

Neoliberalism embodies an epistemic shift that aims to govern the social – and the ecological – through the interface of economic incentives[[9]](#footnote-9). Such *economisation* is a form of *de-politicisation*, operationalised through the application of technocratic governance – for example, through the extensive use of cost-benefit analysis in decision-making – and the naturalisation of economic practices. Economisation suffuses environmental political economy in governing practice. Neoliberal reason has been extended into the environmental sphere through formulations such as ‘ecosystems services’ and ‘natural capital’ whose application support the commodification and privatisation of nature[[10]](#footnote-10). Green growth and sustainable development are not paradigms that displace neoliberalism; rather, they are colonised by it. Not only has there been a financialisation of social relations[[11]](#footnote-11), but also of nature.

This leads, *inter alia*, to questions about the everyday effects of neoliberalism and how it plays out in diverse contexts. “Actually existing neoliberalism” [[12]](#footnote-12) is polymorphous in character and takes a variety of forms.

“[It]has become cumulatively embedded across multiple sites and spaces such that it increasingly defines the rules of the game and the terrain of struggle, even if never acting alone or monopolizing that terrain.”[[13]](#footnote-13)

We use evolving policy and practice relating to the protection and management of street trees as a vehicle for examining the relations between the competing paradigms of corporatism and neoliberalism, and the ways that they are expressed ‘on the ground’. Discursive institutionalism provides the conceptual framework for our analysis.

**Analysing political economies through discursive institutionalism**

Discursive institutionalism is concerned with both the substantive content of ideas and the contexts in which they are used, that is, the discourse[[14]](#footnote-14). Institutions, from this perspective, are systems of ideas and the practices they sustain[[15]](#footnote-15); social constructs that have their own causal effects[[16]](#footnote-16). Just as institutions may be path dependent, so ideas may exert constraints on political action. Paradigmatic ideas act as cognitive filters that pervade the worlds of politicians, bureaucrats, epistemic communities and even the wider public. They provide “the overarching hierarchical goals that guide policy”[[17]](#footnote-17)and influence the instruments that are considered legitimate means of attaining those goals. As they become normalized and institutionally embedded, paradigmatic ideas are codified and frame actors’ interpretations of the wider environment[[18]](#footnote-18), defining the boundaries of what is understood to be politically and practically feasible at particular points in time.

However, ideas are not immutable but are contingent on evolving circumstances. Significant institutional change may be engendered when established paradigms and their related cognitive filters – and, therefore, the principles and practices associated with them – are contested and replaced[[19]](#footnote-19). The extent of institutional change depends on the level at which ideational change occurs.

Ideas and change happen at three distinct levels of generality[[20]](#footnote-20). *Macro-level* effects are the ideas and assumptions that operate across broad swathes of policy (e.g. Keynesianism or neoliberalism). Because these paradigmatic ideas are less regularly debated than lower-level types of ideas they remain “background ideas”[[21]](#footnote-21). *Meso-level* changes are focused on the particular institutional arrangements and instruments that are used to achieve the objectives established by paradigmatic ideas. An example of this is how different forms of support may be available in a welfare system under different paradigms[[22]](#footnote-22). Finally, *micro-level* ideas and change can be identified in the precise settings of those instruments in quantitative or numerical terms. An example of this might be the detailed setting of income tax thresholds or the level of relief offered to people through social security.

Cutting across these levels of abstraction, Schmidt[[23]](#footnote-23) adds two more dimensions: cognitive and normative ideas. Cognitive ideas span the three levels outlined above by linking individual policies (micro-level), to the wider problem definition and associated sets of appropriate policy interventions (meso-level), through to how these “mesh with the deeper core of [macro-level] principles and norms of relevant scientific disciplines or technical practices.”[[24]](#footnote-24) Normative ideas similarly bridge the three levels but do so to persuade others of the efficacy and desirability of action, from individual policy interventions, through to wider values of a society. Ideational power is hence the “capacity of actors (whether individual or collective) to influence other actors’ normative and cognitive beliefs through the use of ideational elements.”[[25]](#footnote-25) For Gamble, neoliberalism’s success as a political project is due to its “chameleon-like” quality of taking a variety of forms that incorporate different aspects of liberalism and, crucially, of operating successfully across different levels of abstraction:

“It is a set of doctrines, some of them developed at a high level of abstraction. It is also a set of policy tools. Most important of all it is expressed as a form of common sense derived from the lived experience citizens have of being buyers and sellers and market agents. These experiences are associated with certain forms of individualism, autonomy, self-reliance and the notion of equal rights.”[[26]](#footnote-26)

Neoliberal reason is hence most successful when it ‘grounds’ high level ideas in the lived experience of citizens along both cognitive and normative dimensions. However, it is also clear that ideas are more successful in a policy environment when linked with powerful economic interests[[27]](#footnote-27).

The shift from one dominant political-economic paradigm to another – from, in this case, Keynesian corporatism to neoliberalism – is rarely quick and definitive. The process is more likely to be long-drawn-out and uneven, with rapid far-reaching changes occurring in some functions at some levels, while others prove resistant to these tendencies. In addition, while political actors might be constrained by macro-level ideational configurations, the various strategies of selective mobilisation pursued by them may result, over time, in adjustments to public philosophies themselves[[28]](#footnote-28). Paradigmatic ideas are often far more dynamic than is recognised, changing significantly in order to remain relevant in the face of emerging challenges and foregrounding different aspects of their ideational formation at different times[[29]](#footnote-29). What is required, therefore, is sensitivity to the ‘micro-structure’ of ideas to account for incremental and paradigmatic forms of ideational change[[30]](#footnote-30).

**Corporatist planning and street trees**

We adopt an elastic definition of street trees in our analysis. Strictly, street trees are trees adjacent to public highways and are usually the responsibility of the relevant local authority (see Figure 15.1). However, local planning authorities have responsibility for the regulation and planning of all trees and woodlands in their areas, including trees on private land abutting a public highway. The latter play a similar role in the streetscape to street trees (see Figure 15.2) and are, therefore, included in the discussion.

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**Figure 15.1: A street tree**

(image taken by John Henneberry)

**Figure 15.2: A tree on private land abutting a public highway**

(image taken by John Henneberry)

“Trees are clearly, so far as town and country planning is concerned, a matter of amenity. Indeed, the powers which local authorities have with regard to trees can be exercised only if it is ‘expedient in the interests of amenity’.”[[31]](#footnote-31)

The concept of ‘amenity’ was introduced into planning by the Housing and Town Planning Act 1909, although the term has never been defined, then or since[[32]](#footnote-32). The Town and Country (Interim Development) Act 1943 first provided local planning authorities with the option to adopt Tree Preservation Orders (TPOs) that prohibited “the cutting down, topping, lopping or wilful destruction of trees” without consent” (s 8(1)(a)) with the main purpose of preserving amenity[[33]](#footnote-33). The Town and Country Planning Act 1947 assumed that in their decisions local planning authorities would consider the ‘interests of amenity’ and subsequently it became the “‘hardest-worked word in planning language”[[34]](#footnote-34). “The phrase 'injurious to amenity', first coined in 1914, rapidly established itself as the most frequently-cited reason for the refusal of planning permission.”[[35]](#footnote-35)

Successive planning legislation has given local planning authorities power to control the appearance of individual buildings and of areas within which they are set. This includes policies and policy instruments relating to the protection and management of trees that are negative and reactive (refusal of planning permission or its grant subject to conditions) or positive and proactive (the making of TPOs, the inclusion of relevant policies in development plans, the provision of Supplementary Planning Guidance on the subject) or both. But central government “did not elaborate upon how this was to be achieved, relying on the all-encompassing and vague idea of protecting 'amenity'”[[36]](#footnote-36).

This vagueness persists in current guidance on TPOs and trees in conservation areas[[37]](#footnote-37). TPOs can be made by LPAs “if it appears to them to be ‘expedient in the interests of amenity to make provision for the preservation of trees or woodlands in their area’”[[38]](#footnote-38). They are encouraged to consider what ‘amenity’ means in practice and what matters contribute to amenity value. On the former, “… authorities need to exercise judgment … Orders should be used to protect selected trees and woodlands if their removal would have a significant negative impact on the local environment and its enjoyment by the public.”[[39]](#footnote-39) On the latter, “… authorities are advised to develop ways of assessing the amenity value of trees in a structured and consistent way, taking into account the following criteria: visibility […] individual, collective and wider impact […] other factors, such as importance to nature conservation or response to climate change.”[[40]](#footnote-40)

What is notable about planning’s treatment of (street) trees is its openness. There is no definition of a tree: “anything that may ordinarily be termed a tree”[[41]](#footnote-41) is covered. No priority is given to trees of specific species, ages, sizes and so on. The only categories applied to trees are loose and are based on trees’ position or spacing: individual trees, treed areas, groups of trees or woodlands. Amenity is not defined. Its meaning and interpretation are left to the judgement of local authorities. The same holds for amenity value, which is related simply to the visibility and impact of trees and their role in nature conservation and in the response to climate change. How local planning authorities might assess amenity value is a matter for them.

**Valuing street trees**

There are different ways to value a (street) tree. This micro-level aspect of practice applies the meso-level policy principles embodied in the macro-level paradigms to which they relate. Consideration of various approaches to valuation offer a way to ‘read off’ the relations between the three ideational levels, particularly the ways that conflicts or complements may be developing between actions that draw from competing paradigms.

Three (street) tree valuation systems have been widely used in the UK[[42]](#footnote-42). The first is the Helliwell system[[43]](#footnote-43). It was introduced in 1967 and has been used for public inquiries, court cases and insurance claims. It “can be seen as valuing trees in terms of their contribution to visual amenity rather than valuing them *per se*.”[[44]](#footnote-44) The approach is based on expert judgement. The estimated value is independent of both the original cost of growing a tree and of its replacement cost. It is derived from a three-step process. First, trees are scored according to six factors related to visual amenity (size, useful life expectancy, importance of position in the landscape, presence of other trees, relation to setting, and form). Next, the scores are multiplied together. Then an additional factor

“... can ... be used to convert this numerical score into a monetary figure. The conversion factor was derived historically by postulating what appeared to be an appropriate figure in the first instance, and this was subsequently modified, on a consensus basis, in order to obtain monetary values which users regarded as ‘realistic’ in terms of their experience, and which related appropriately to the effect of trees on property prices.”[[45]](#footnote-45) [[46]](#footnote-46)

The Helliwell system has been criticised on several grounds[[47]](#footnote-47). The scores are based on expert judgement rather than empirical evidence. The method for deriving the unit monetary value is opaque and again seems reliant on expert opinion. The system does not estimate the value of the environmental and social benefits provided by trees. Given these issues, the approach “... should not be used for economic valuation and hence cost-benefit analyses or in any context where the value is compared with other values obtained elsewhere.”[[48]](#footnote-48)

The second system is the CAVAT approach, first presented in 2003[[49]](#footnote-49). It has been used by many local authorities to persuade developers to alter designs to avoid the loss of trees or to receive adequate compensation where this cannot be avoided. CAVAT adjusts the estimated replacement cost of a tree by factors relating to the tree’s health, and amenity and social value. It has seven steps. First, the trunk formula method, combined with a unit value factor based on the depreciated replacement cost of an ‘average’ tree[[50]](#footnote-50), is used to estimate the basic value of the tree. Then allowance is made for (i) the tree’s location in terms of the population density of the surrounding area; and (ii) its public accessibility and visibility. Next further adjustments are made to reflect (i) the tree’s crown size; and (ii) the condition of its crown. Then, allowance is made for how well the particular tree species characteristics are suited to its location. Finally, an adjustment is made for the tree’s safe useful life expectancy to produce its estimated full value.

“The methodology used in CAVAT is inconsistent with the principles of economic valuation”[[51]](#footnote-51). This is for two reasons. First, value is equated to the adjusted replacement cost of a tree rather than to the value of “the increase in human welfare due to the benefits provided by” the tree[[52]](#footnote-52). Second, the adjustment to the replacement cost is determined by expert judgement rather than scientific evidence. Consequently, neither the Helliwell nor the CAVAT system is compatible with the structure of the UK National Ecosystem Assessment[[53]](#footnote-53) because they do not attempt to estimate the value of the ecosystem services provided by the tree; nor do they comply with economic analysis rules set out in the Green Book for appraisal and evaluation[[54]](#footnote-54).

The third system is i-Tree[[55]](#footnote-55). It quantifies the monetary value of the annual benefits and management costs arising from selected ecosystem services (ES) provided by a tree/s. Four ES are assessed in monetary terms: savings from reduced energy use in buildings; flood mitigation arising from reduced pluvial run-off; air quality improvements; and carbon sequestration and reduced CO2 emissions[[56]](#footnote-56). These benefits are set against the costs of (street) tree management to estimate the net annual benefits. In turn, these financial data may be used to derive the annual return of a tree and its capital value (using discounted cash flow (DCF) analysis over the tree’s expected life). Appropriately manipulated, these data may be used as the basis for estimating the internal rate of return (IRR) and net present value (NPV) of investing in trees.

Because i-Tree Eco assesses only a subset of the ES and other benefits of amenity trees it is likely to undervalue many trees[[57]](#footnote-57). However, its application within an ES framework, its estimation of the value of ES benefits and its scientific, empirical basis result in i-Tree being compatible with both the UK National Ecosystem Assessment and HM Treasury’s Green Book. Thus, “if UK data are inputted”[[58]](#footnote-58), “the tool can be applied to the UK to estimate the economic value of” selected ES provided by trees[[59]](#footnote-59).

**The conflict between amenity value and economic value**

Consideration of the contrasting strengths and weaknesses of the different methods for valuing trees cannot be separated from their political-economic context. The rise of neoliberalism has seen the development of a global movement to describe the natural environment as a set of ES that have economic value. It has shaped environmental policy and governance at the highest levels[[60]](#footnote-60) and is underpinned by a substantial volume of on-going empirical research that includes the Millennium Ecosystem Assessment[[61]](#footnote-61) and The Economics of Ecosystems and Biodiversity[[62]](#footnote-62). Such work is being integrated into accounting processes both internationally[[63]](#footnote-63) and within the UK (ONS, 2017). In short, there has grown a regime of organisations, experts and practices that legitimate and operate the process of valuing nature. Participation in the process requires compliance with its methods, criteria and standards. They prescribe what parts of nature get calculated, what calculations are undertaken on those parts and by whom. It is this economistic perspective that informed some leading assessments[[64]](#footnote-64) [[65]](#footnote-65) of the different approaches to valuing trees (above).

The tensions between the approaches – between Helliwell and CAVAT, on the one hand, and i-Tree, on the other – arise from an intrinsic characteristic of nature. It is simultaneously holistic and infinitely varied: characteristics that hold at multiple levels, including that of a specific tree. Such an entity cannot be valued accurately and holistically, so it must be ‘unbundled’ into separate, clearly defined elements[[66]](#footnote-66). i-Tree is based on

“… the foundational conceit of the bundle [such as a particular street tree] that can be decomposed into components … Value, if and when it comes to rest in the social abstraction that stands in for the complicated ecosystem [the tree], comes from the success of rendering the ecosystem measurable and comparable with other ecosystems, not from nature itself.”[[67]](#footnote-67)

Thus an entity, such as a particular street tree, and its elements, such as the ES that it delivers, are defined and classified. These processes incorporate some characteristics of the entity and reject others. They make things partial and reduce difference. What is excluded are those factors that are not recognised or favoured by the dominant paradigm. In this case, neoliberalism. Entities and their elements may then be measured or counted. Conceptually, this requires the recognition of some property or dimension possessed by all members of a class of entity or element (such as height [of a tree] or area [of a tree canopy]) and the application of a measure to it (such as the metre or the hectare). The specifics of units of measure and of the relations between them are less important than their standardisation and compatibility[[68]](#footnote-68).

The counting or measurement of entities or their constituent features again involves selection and simplification. We apply numbers to those aspects of them that are important or measurable or both and ignore or exclude other aspects that do not meet those criteria. We measure by how much trees improve air quality (using i-Tree) but not by how beautiful trees are (addressed indirectly by Helliwell’s and CAVAT’s focus on the amenity value of trees). By attaching numbers to bits of nature we imbue nature with the properties of numbers such as their apparent order and precision. And once numbers, measures, classes and categories become established and standardised – as they are in the practice of estimating the economic value of nature – they become transferable and are able to transcend the particular contexts, whether locational or functional, within which they were generated[[69]](#footnote-69). All of these factors are reflected in the i-Tree approach to valuing street trees but are absent from the Helliwell and CAVAT systems.

**Conclusions**

The three valuation methods all produce a monetary value of the subject tree/s. Helliwell attempts to capture the intrinsic amenity value of the tree in its setting. It is largely based on expert judgement and contrivance, resulting in very limited consistency and comparability between results for different trees in different settings. CAVAT’s starting point is the adjusted replacement cost of a tree. This provides greater transparency regarding the basis for deriving a monetary value and may increase consistency between valuations, but significant adjustments are then made to the figure that are based on expert judgement. Both these methods produce a single (capital) value for the tree.

i-Tree is quite distinct because it adopts an ES approach. This involves identifying the services provided by the tree and estimating their annual value by drawing on wider scientific and economic research, using the benefits transfer technique. In order to do this as accurately as possible, much greater effort is devoted to the definition of the tree. i-Tree’s emphasis on definition, consistency and comparability, and its generation of a range of monetary values and performance measures is supportive of the commodification of trees.

The differences between the two types of approach are also evident in larger, structural terms. Under the corporatist approach rooted in the land use planning system, trees are treated as contributors to the local sense of place; a sense that combines social, aesthetic, cultural and historical aspects of the physical environment that are particular to that area. Trees in one locale are, therefore, similar to but different from trees in another locale. This is because the way that trees are conceived and defined is largely a matter of judgement. Judgement of how a local authority decides to specify trees’ amenity and of how it decides to estimate the value of that amenity; using, for example, the Helliwell or CAVAT system.

In comparison, neoliberalism strives for consistent definition and valuation. This is necessary to achieve commensurability[[70]](#footnote-70) and, thereby, to enable comparison[[71]](#footnote-71). To make them commensurable, trees are not made equal. Instead, trees are broken down into a set of defined characteristics (species, age, height, health, etc) that are linked to a set of defined ‘products’ (ecosystem services) that have defined outcomes (carbon storage, flood amelioration, etc) that have definable value (arising, for example, from lower energy or insurance costs). These elements are specified, fixed and consistent over space and time. This allows a tree in London to be compared with a tree in Sheffield or, if the requisite adjustments are made, with a tree in Auckland[[72]](#footnote-72).

The corporate approach is inappropriate to the application of calculation to trees and especially to the use of economic or financial methods for estimating their value. However, it has proved resilient to the advance of neoliberalism. The latter is articulated, *inter alia*, through continuing challenges to the legitimacy of techniques such as Helliwell and CAVAT that embody corporatist concepts on the grounds of (lack of) scientific rigour or economic principle. It is possible here to see how nested ideas at macro, meso, and micro levels are being deployed to buttress the processes of neoliberalisation against those of a rival paradigm. The power of numbers[[73]](#footnote-73) offers the impression of objectivity, and their use by neoliberals lends weight to the depoliticised vision of society - and ecology - that is common to all variants of neoliberalism. But the production, circulation and promotion of the techniques of economisation involves considerable effort and resources. Such is the success of these efforts that the estimation of the price that people will pay for the ecosystem services delivered by street trees is not seen as controversial.

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