This chapter describes what is arguably the biggest failure of democratic government and explains it in terms of triple dysfunction. In doing so it makes three claims. The first is that, as a broad rule for advanced economies, economic growth fails to deliver on its promise and yields net costs instead. The second is that triple dysfunction renders democratic governments blind to this problem, so there is virtually no chance that they will correct it. Instead, they resolutely make it worse; exacerbating costs in what may be the greatest manifestation of triple dysfunction — addiction to economic growth. The third claim follows from these two and is that further economic development should not be undertaken in relatively well-developed democratically governed economies until their triple dysfunction is corrected to enable them to make competent decisions on such development.

The second claim, of addiction to economic growth, is a major failure of citizens compensating for their ignorance of politics and public policy by using heuristics (mental shortcuts or cues, as discussed in §2.2.3). As the political groups, elites and others who provide these heuristics neither recognize nor understand the addiction and its costs, they mislead citizens. This
lack of understanding is due not only to the addiction process being a little complex and obscure (which invokes excessive compromise), but also because electoral incentives (excessive competition) constrain the attention of political agents to the concerns of voters. But ambiguous delegation allows those concerns to focus on the short term and ignore the longer term, where the costs of the addiction arise.

The promise referred to in the first claim is that economic growth will satisfy society’s wants for more employment and more income. This is taken to be the promise of economic growth because it is the rationale that politicians routinely espouse as they pursue that growth. It is also a politically legitimate promise as it offers a public good — the satisfaction of the wants of all or most citizens for more employment and more income. As we will see, growth not only fails to deliver on that promise but it produces the reverse; it increases wants for more employment and more income. Worse still, it also reduces the availability of the natural capital (defined in §2.2.3.2, Distraction by advertising) required to satisfy not only many of those wants (which, taken individually, are for private goods) but many wants and needs for public goods as well.

According to these first and second claims, triple dysfunction must be minimized or eliminated; otherwise growth will be both futile and damaging. So the third claim is that until triple dysfunction is rectified, governments should eschew economic growth. This reversal would require wants for more employment to be addressed by sharing work more equitably and, as indicated in §4.2.3, in most countries that requires measures to reduce inequality of incomes. Those measures would also help to moderate wants for more income. But none of this will be politically feasible until triple dysfunction is corrected. So that is the key, not just to progress, but to preventing further deterioration. The argument in this chapter, together with the postulation of triple dysfunction in previous chapters, elaborates on the original publication of these three claims in an article in Ecological Economics (P. Smith 2009).
The policy failure postulated by the second claim is a blindness or myopia that preserves the *idée fixe* that a positive net monetary return from a commercial development is always a benefit provided that the development does not *directly* produce costs that outweigh the benefit, such as immediate environmental damage. However, as explained below in §5.2.1 and §5.3, the net monetary return may itself be a cost because it produces damaging consequences. Such damage may start to develop during the implementation of a project and grow for many years after its completion. In this process the bigger the net financial gain from the development, the bigger its ultimate net cost. If the reader considers that the description given in §5.3 of this effect mirrors the progress of economic growth in developed economies (perhaps especially those with relatively high ratios of natural capital to population such as Australia, New Zealand and Canada), then its reliance on the triple dysfunction hypothesis might be taken as another indication that this hypothesis has some reliability and could therefore be used as a theory for guiding reforms in democratic government.

The *idée fixe* that positive financial returns are always good in themselves appears to be sensed or understood by many environmentalists as a mistake and bad for public policy, because they tend to rank the value of development projects — and economic growth in general — lower than less environmentally concerned people do. To the latter, this sense of values in environmentalists may seem wishful, selfish and destructive, but the political and psychological processes described below indicate that assigning a low or negative value to economic growth can be wise.

Democratic governments feel compelled to give their citizens what they most strongly want, which is essentially more income and more employment, only to find that they then have to give more of it and are locked into a desperate pursuit of economic growth in blatant denial of obvious limits to natural capital. As discussed below in §5.2.1 and §5.3, when a community gets what it wants, it soon wants more, a response that is strongest for basic wants like food, shelter, energy and the education to get
the employment that provides such essentials in modern economies. For those who observe or sense this endless escalation of wants and have concerns about its impact on limited stocks of natural capital (and also on the personalities of those who always get what they want), rebellious questions arise: What is the point of giving citizens the things they want, especially those they want most urgently, when they will then expect even more? Why produce more economic growth when it recreates and even enlarges the dissatisfactions that demand it?

5.1 Illustrating the problem

The triple dysfunction hypothesis, along with much public choice theory and the other indications of democratic failure discussed in Chapter 2, implies that there will be times when citizens would be justified in engaging in civil disobedience, if this is their only way of trying to influence governments on important issues. Government policy will sometimes be badly mistaken because some irresponsibility towards public goods is built into the democratic system. At times, therefore, citizens are likely to perceive a moral obligation to challenge democratic government in order to try to correct such mistakes. If just a small minority of citizens recognize such a case, they may see civil disobedience as the only way in which they could alert the mass public with enough urgency to create political pressure that might change the offending policy. In addition, such disobedience could be their best — or only — prospect for pushing government to reform its basic processes so that it becomes more responsible. Protest and civil disobedience occasionally erupts in democratic countries, but the protestors usually do not call for fundamental reform of government. Instead, they demand removal of the symptoms of dysfunction, or for reform of government processes at relatively superficial levels, such as laws for freedom of information, commissions of enquiry into corruption and limits to private funding of electoral campaigns. No doubt their focus avoids fundamentals because very few promising reforms for democratic government have been sug-
gusted at that level. Several proposals that try to do this are described and compared in Chapter 6.

A major Australian case of civil disobedience occurred in 1982–83 when hundreds of citizens made illegal attempts to physically block construction of the Tasmanian ‘Gordon-below-Franklin’ hydro-electric project. A total of 1272 people were arrested and nearly 450 remanded in gaol (Thompson 1984, 174). Before that protest and continuing to the time of writing, numerous demonstrations have been made in Australia against developments such as other hydro-electric schemes, the logging of old growth forests and mining projects. Property and jobs have been destroyed, people endangered and many have been arrested and fined. In parallel with similar developments in many other democracies, public anger over environmental destruction has inspired the establishment of a political party, the Australian Greens, to try to more effectively address not only the environment, but all public goods. These tactics of protest, civil disobedience and new political parties have produced some protection for public goods, but it is suggested that because they do not address triple dysfunction, serious neglect of these goods will continue and hostility will smoulder and at times explode between environmentalists and supporters of economic development. However, if both sides of these disputes understand the effect of triple dysfunction on natural capital as described below in §5.3, then they should be more able to understand each other and thus to negotiate constructive solutions.

Damage to natural capital from economic growth is apparent in many countries, whether they are governed democratically or not, so it is clear that different types of political systems have often been unable or unwilling to adequately control that growth. The ‘scarcity multiplier’ analysis developed in §5.3 attempts to explain this failure only for liberal democracies, but such failure in other political systems may have similar dynamics.

The scarcity multiplier describes liberal democratic governments as often unjustifiably depleting natural capital by the choices they make on the issue of whether to expand the economy. These political choices are likely to be incompetent
not only from triple dysfunction but because this particular issue has seven of the eight characteristics that are described in §4.1 as posing difficulties for decisions by democracies. Before setting out the scarcity multiplier analysis, these difficulties are reviewed, and then two concepts that are crucial for the analysis are explained in §5.2.

5.1.1 Characteristics of the choice on economic growth that confuse democracies

The question of whether to have more economic growth creates the following seven difficulties for political choice by democratic governments.

**Complexity.** As explained below in §5.3, expansion of the economy may produce positive feedbacks that defeat the social objectives of the expansion. These feedbacks create a complexity in the issue that is not seen by voters as they are busy with their lives and mostly do not think deeply about public policy.

**Abstraction.** Future expansion of the economy and the likely consequences of this are just ideas. As such, they have little personal impact and voters will give limited thought to them.

**Obscurity.** Important adverse consequences of economic growth develop slowly and may thus be imperceptible. Moreover, the people who produce these costs may be difficult for citizens to recognize and hold responsible because they are themselves. These effects may induce citizens to neglect to think in any depth about this issue.

**Temporal remoteness of consequences.** The adverse consequences of growth are mostly in the distant future; the beneficial ones are largely in the near future.

**Pervasiveness.** As almost all citizens support economic growth and thereby contribute to its consequences, avoiding these con-
sequences poses the massive problem of developing solidarity for unconventional (and counterintuitive) public policy.

**Competitiveness.** Attempting to resolve the issue inflames conflict between those concerned primarily with private goods and those with strong concerns for public goods such as the environment and the equitable sharing of employment and/or wealth. This polarity is close to the power — universalism polarity in human values that is discussed later in §8.1, which is similar to the hierarchist — egalitarian polarity described in §4.1. It is noted in §8.1 that, partly due to genetic predisposition, these diverging worldviews resist modification and have large and stubborn influences on human perception and action.

**Externalizability.** The issue of whether to have more economic growth invites externalization of responsibility. It does so by posing the choice of how to match supply and want, which tempts voters to prefer the match to be made by managing their supplies rather than their wants. If wants are to be managed, citizens will have to be very well informed, not only about relevant issues that might persuade them to modify their wants but they would also need to be well informed about the readiness of fellow citizens to support them in such self-restraint. From the perspective of democratic government, managing the wants of voters internalizes the way the match is made — it is taken into the core of democratic politics — whereas if the matching is done by manipulating supply, it is largely externalized from politics. As internalizing the matching is extremely difficult for democratic politicians (see, e.g. §2.2.2), they externalize it.

The combination of these seven difficult characteristics in the issue of whether to have economic growth produces an almost ‘perfect storm’ of democratic failure. It is therefore chronic and widespread across democracies. It also has enormous impact, although this may only gradually accumulate. It is a failure of government that allows citizens to continue with accustomed ways of acting as individuals rather than as responsible members of society, so they reproduce and consume according to
private considerations and with scant regard for public goods. For some people, consumption may mean migrating to wherever they can do more of it. Such continuation of self-interested behaviour amounts to collective irrationality if it persists when it has become destructive for the society in which it takes place. When democratic dysfunction allows such persistence we have a boom constructing a bust, for consuming and populating will collide with the limits of natural capital. As we see below (e.g. 5.3.1, 5.3.2, and 5.3.3), although technological innovation may delay this impact, it is ultimately inevitable if the dysfunction persists. Global warming and ocean acidification are two current indications of the scale of some of these problems.

The mechanisms producing irrational preoccupation with economic growth are explained below in §5.3, but before this is done two essential concepts are now introduced. These are ‘inflating want by supply’ and the ‘private goods bias’.

5.2 Two key concepts for the scarcity multiplier analysis

5.2.1 Inflating want by supply
The first primary democratic dysfunction, ambiguous delegation causing confusion about who directs public policy, allows citizens to neglect their role as directors of their democracy and focus on narrower interests. These interests may be those of individuals or sub-groups within that democratic society. Such narrow focus allows an apparently instinctive behaviour to assert itself without being disciplined by broader considerations of public goods. This particular behaviour is that of wants inflating when they are supplied—and also when such supplies are increased. This is referred to here as IWS: ‘inflating want by supply’ or ‘inflation of want by supply’. As discussed later in §5.3.1, the IWS response means that the supply of a good or service tends to inflate wants not only for it (referred to below simply as a ‘good’) but for other goods as well. IWS applies to the supply of both private and public goods, but, as discussed in §5.3.1, this response is most pronounced with private goods.
IWS is a ubiquitous tendency and it has destructive aspects, one of which is that the satisfaction of having wants met by an increase in supply is subsequently at least partially eliminated by wants being stimulated by that increase. This decay of satisfaction often persists indefinitely through positive feedback, for when an increase in supply stimulates more want, the larger want provokes more effort to find, or buy, or make, bigger supplies, and if this succeeds, more want is evoked and so on. That erosion of satisfaction may escalate into outright frustration when expanding wants collide with the limits of finite natural resources. The natural human response of IWS therefore obliges societies to exercise strong self-discipline, which as discussed below under ‘The scarcity multiplier’ is a challenge that democracies are not equipped to meet. Adam Smith (1976 [1790], 140) identified this challenge when he wrote that

man, according to the Stoics, ought to regard himself, not as something separated and detached, but as a citizen of the world, a member of the vast commonwealth of nature … [and] to the interest of this great community, he ought at all times to be willing that his own little interest should be sacrificed.

Andrew Bacevich (2008, 16) sees the United States as failing badly to recognize and rise to that challenge. He considers

what it means to be an American in the twenty-first century. If one were to choose a single word to characterize that identity, it would have to be more. For the majority of contemporary Americans, the essence of life, liberty and the pursuit of happiness centers on a relentless personal quest to acquire, to consume, to indulge … Yet the foreign policy implications of our present-day penchant for consumption and self-indulgence are almost entirely negative.

IWS is a positive feedback response not only by individuals, but also by whole populations. A society is likely to grow in response to an increase in the supply of something that its members want, either by more people being attracted to migrate into that com-
munity to take advantage of its increased supply, or by its birth rate being inflated by the increase in supply, or by its death rate being reduced by it, or by a combination of these reactions. If the increased supply creates a bigger population it will also have created a bigger aggregate want for supplies of everything that people want. More effort will then go into expanding the supplies of all these goods and any success in this may encourage the population to grow further and so on.

The general example of IWS is the propensity of all species to fully exploit their ecological niches. All replicating entities consume the food, oxidants, energy (e.g. sunlight), shelter and other things that are available to them that they need for replication, thereby enlarging their populations to the extent permitted by these supplies. If the limiting extent of supplies is expanded by more supplies becoming available, the replicator’s population invariably increases to the new limit established by this expansion. In this situation, predation might be thought of as a negative ‘supply’, a reduction in the supply of shelter. The universality of such growth of consumption or ‘want’ as a response to an increase in supply suggests that it is a product of natural selection. Replicators that did not behave in this way would find their supplies taken over by those that did and would be more vulnerable to elimination by predators, especially those with IWS behaviour.

In the case of humans, an apparent exception to the population growth form of IWS is demographic transition, a failure of populations to respond in this way to expansion of their supplies of goods and services. This ‘failure’ usually occurs as a human population progresses from a low state of economic development to a more prosperous state where most citizens are well educated, child mortality is reduced, contraceptives are available and acceptable, and food, housing, transport and other goods and services are relatively well supplied. However, the lack of population growth IWS with demographic transition tends to be compensated for with an enhanced IWS in the individual, as increasing supplies of goods and services encourage each of them to want more. In addition, recent research indicates that when
a country develops beyond the human development index of 9, birth rates then tend to increase (Myrskyla et al. 2009), which would diminish the strength of demographic transition and encourage population growth IWS.

Organisms that show no evidence of consciousness, such as viruses, bacteria, plants and the simpler animals, cannot be described as displaying IWS because it seems unlikely that they experience wants. But their behaviour is similar, so perhaps IWS should be changed to ‘inflation of consumption by supply’ (ICS), as the universal biological response. This behaviour, whether we call it IWS or ICS, is so pervasive that when we consider humans, we might anticipate that extremely competent social choice is required if societies are to have the capacity to resist it when it is prudent for them to do so.

In economics, demand is want that is backed up by the purchasing power of the individual or entity that wants the relevant good or service. As used here, ‘want’ refers to such demand as well as to want for things that are not paid for by the individual consumer, such as public goods available to all for free from nature and also other public goods that are paid for only indirectly by consumers via taxation, such as government decisions and actions on such things as public infrastructure, public health, justice, education, foreign relations and economic management. In what follows, statements such as ‘matching want and supply’ should be understood to include ‘matching demand and supply’. Similarly, ‘IWS’ includes ‘inflating demand by supply’.

One form of IWS has long been recognized by economists: ‘In the economics literature it is… well known that increased efficiency in the use of a resource leads over time to greater use of that resource and not less use of it’ (Ekins, cited in UK Parliament 2006, 3). Increasing the efficiency of the use of a resource is equivalent to increasing its supply and the resultant ‘greater use of that resource’ is equivalent to a greater want for it, so this effect is IWS. This ‘efficiency’ form of IWS was first noted by the nineteenth century economist William Stanley Jevons, when improvements in the design of steam engines were making them more efficient in their use of coal. He wrote: ‘It
is wholly a confusion of ideas to suppose that the economical use of fuel is equivalent to a diminished consumption. The very contrary is the truth’ (cited in Owens 2011, 104). In 1979–80, the ‘Jevons’ paradox’ was stressed by economists Daniel Khazzoom and Leonard Brookes as a crucial consideration for public energy policy. American economist Harry Saunders (1992) subsequently called this concept the Khazzoom-Brookes (or K-B) postulate. It has also been identified in agriculture, where it was dubbed the Borlaug paradox (Pearce 2011) after Norman Borlaug, the pioneer of the green revolution in agricultural productivity. The ‘paradox’ in that case is that when yields from agricultural land are increased there is no reduction of deforestation by farmers trying to increase their harvests, but the reverse because agricultural yields produce more money for clearing forest. As this type of effect is now well recognized it is no longer seen as a paradox or postulate and has been renamed the ‘rebound effect’ (Herring and Sorrell 2009). This term covers all commercial resources, not just those of energy and agriculture. Rebound is thus the effect that when a technological improvement allows a resource to be used more efficiently it raises its productivity, so that more of it is wanted and consumed. Those increases of want and consumption are driven in two ways: the reduced cost of use makes the resource more attractive as a substitute for other resources; and the money that can now be saved in using that resource can be used to increase investment in production capacity of any type and also to increase consumption in any good or service, so economic growth is boosted, which then further raises the demand for that resource. Economic growth also raises the demand for other marketed goods and services, which is a part of the comprehensive boost to many other wants for both private and public goods that is hypothesized as IWS. Because of the complexity of the rebound effect, Brookes considers this term misleading as it implies a simple one-input/one-output problem, when in reality it is more like a chain reaction with feedbacks (Owen 2011, 118). Energy experts Horace Herring and Steve Sorrell (2009) point out that for energy resources, the ef-
fect can be very significant but the ways in which it takes place are often not amenable to reliable measurement.

As noted above, the rebound effect is only a subset of all IWS responses. The complete set is larger in two ways. The first is that IWS describes inflations of want from increases in the quantity of supply as well as from increases in the efficiency of the use of that supply. The second is that IWS covers wants for public goods as well as for private goods. IWS may be thought to resemble Say’s Law, the historically controversial early nineteenth century idea that was expressed by French businessman and economist Jean-Baptiste Say as ‘products are paid for with products’. In 1808 James Mill restated Say’s Law by writing that the ‘production of commodities creates, and is the one and universal cause which creates a market for the commodities produced’. This is because the money paid for a supply immediately enables the supplier to exert a new demand of the same magnitude, which John Maynard Keynes summarized as ‘supply creates its own demand’. IWS is quite different as it applies to public as well as private goods (so IWS refers to ‘want’, not ‘demand’) and also because it postulates that supply creates wants that are not just equal to wants for that supply, but which may be greater. This exacerbation of wants may occur through the positive feedbacks in per capita consumption and size of population that are noted above and explored below in §5.3.

The next subsection reviews the tendency for public goods to be underprovided by democratic governments. §5.3 then shows how this underprovision permits a complex of four IWS systems to indefinitely escalate the scarcity of natural resources within democratic jurisdictions.

5.2.2 Private goods bias
It was noted in §2.1 that public and private goods usually compete with each other for the resources needed for their production and maintenance. An underprovision of public goods will therefore usually signify, if not actually be caused by, a bias towards the provision of private goods. As triple dysfunction, in common with much other political theory and observation, in-
dicates that democratic governments often under-supply public goods, we may express this by saying that they have a ‘private goods bias’. Notwithstanding this bias to choose private goods to the detriment of public goods, it is obvious that democratic governments do make some attempts to discourage wants for, and supplies of, private goods. Examples are differential taxes (such as excises and progressive income tax) and labelling laws aimed at protecting consumers. However, such measures are usually introduced only after considerable pressure (either from special interests or from the general public) that largely results from the development over time of the recognition by many citizens that there are good reasons why some of their wants for private goods should not be satisfied. However, triple dysfunction indicates that such reforms will not entirely eliminate the private goods bias.

It should be noted that the idea of a private goods bias in democracies is not contradicted by the recognition that these polities may also have some anti-market bias. Anti-market bias might appear to be a bias against the provision of private goods, as the market provides many or most of these goods. Caplan (2008, 30–36) describes anti-market bias as a tendency among citizens to reject market solutions to problems in favour of government solutions because they feel that the market is unethical, as buyers and sellers are driven by self-interest. As a result, crucial functions of the market are often treated with suspicion and, in some parts of the world, rejected. Four examples of this behaviour are: (1) interest payments are considered to be outright gifts to the rich instead of payments for delaying consumption and risking failure to repay; (2) profits are regarded as gifts to the rich instead of earnings for providing goods and services that people will pay for; (3) prices on pollution are viewed as permission to pollute instead of incentives to improve environmental quality as cheaply as possible; and (4) paying a price for something that is offered for sale may be considered to be largely a gift to rich business-people who conspire to extort monopoly prices. Anti-market bias in citizens, to the extent that it occurs, tends to make their democratic governments decide issues that
would be more sensibly resolved by the market. Public and/or private goods may thereby be underprovided. The private goods bias of democratic government differs from anti-market bias in that it directly under provides only public goods. So, while anti-market bias tends to have democratic governments making a wider range of decisions than they should, the private goods bias distorts those decisions to select private goods at an excessive cost to public goods.

Supply bias. A special form of private goods bias is supply bias, a tendency of democratic governments to supply goods (whether private or public goods), rather than to ignore, or try to discipline, citizens’ wants for these in situations where this supply will cause some public goods to be underprovided to an extent that outweighs the satisfactions of wants that the supply is intended to create. Supply bias is a type of private goods bias because it is a tendency for government to choose the private good of supplying the wants of individuals or sub-national entities (which are usually wants for private goods) instead of choosing the public good of ignoring or disciplining these wants in the interests of broad public welfare. Supply bias, along with any other form of private goods bias, reflects the strong tendency for politicians to follow the wishes of citizens, as noted in §2.2.2 (‘Citizens as directors’). These wishes, as discussed in §2.2.3 (‘Ignorant directors’), tend to focus on private rather than public goods.

Some observers have recognized supply bias by remarking on a tendency for politicians and citizens to try to solve public issues with technical solutions that produce greater or more efficient supplies, rather than by controlling wants. For example, in his renowned essay ‘The Tragedy of the Commons’, Garrett Hardin (1972, 251) noted that ‘change in human values or ideas of morality’ was required if problems with ‘no technical solution’ were to be solved. An example of supply bias is the reluctance of the Australian and US governments, for example under Howard, Rudd and Gillard in Australia and G.W. Bush and Obama in the US, to respond to problems of global warming, peak oil and
energy independence by trying to get their publics to minimize their wants for energy. One way they might approach this is to limit the size of their populations through policies to reduce birth rates and immigration. Instead, they have preferred to supply whatever energy is demanded, with technology that either reduces emissions (such as nuclear, wind and solar energy) or expands the supply (for example, by fracking shale and coal seams for oil and gas) or uses the existing supply more efficiently (for example, by more effective insulation of buildings) (e.g. Bush 2006). Of course the deployment of such supply strategies are constrained by politicians’ desires that their costs for citizens do not conflict with citizens’ wants for personal purchasing power.

Thus, for both private and public goods, democratic governments tend to match wants and supplies by managing supply more readily than want. This supply bias is a type of private goods bias as it damages and neglects public goods by supplying wants for private goods that are not disciplined in order to protect public goods.

5.3 The scarcity multiplier

The following analysis describes democratic governments producing mounting problems by inflating want with supply (IWS) through decisions that have a private goods bias (including its supply bias variant). This mirrors and reinforces similar, concurrent decision-making by private enterprise, so that both behaviours together produce the problem of economic growth pushing against both social limits (e.g. Hirsch 1977) and the physical limits of natural capital. Scarcities in positional goods (see §2.2.3.2) and natural capital are thereby escalated with positive IWS feedbacks. As this process is self-reinforcing it is labelled the ‘scarcity multiplier’.

The example of the multiplier described below is the invariable response by democracies to opportunities for economic growth in which natural capital can be ‘macro-allocated’ from the ecosystem into the market, which will then ‘micro-allocate’
it (Costanza and Daly 1992). Macro-allocation of natural capital is the transfer of materials or energy from the ecosystem (which is the macro-system that holds stocks of material and energy that may be extracted without paying a price) to the market (a subsystem of the ecosystem) for micro-allocation, in which those stocks are converted to priced goods and services.

A crucial observation on the macro-allocation of natural capital to the market is that of ecological economists Robert Costanza and Herman Daly (1992, 41), who state that it ‘should be viewed as a social or collective decision rather than an individualistic market decision.’ This is because most natural capital comprises public goods, such as rivers, air, soils, mineral deposits, stocks of fish and wildlife, native vegetation, natural genetic diversity, wilderness, much of the physical space on land, sea and in the air, solar radiation and the climate. The market is unable to sensibly allocate public goods because they are freely available to all and therefore do not have a market price that could guide their allocation. It thus falls to government or some other non-market institution to allocate public goods. This makes politics of fundamental importance for the rational macro-allocation of natural capital. When government malfunctions, this macro-allocation may be destructive and, in democracies at least, it drives scarcity multipliers.

5.3.1 The mechanism
The conditions under which a scarcity multiplier will be driven by democratic political decisions within a given region are as follows.

1. The region in which it occurs has a resident population with an electorally representative liberal democratic government.
2. Migration to and from other regions is possible.
3. Economic conditions are well developed, so a basic level of affluence has been achieved: say over US$15,000 per capita (Common and Stagl 2005, 199). This has produced demographic transition, so the size of the population is currently
controlled largely by the influence on migration of the economic opportunities in the region.

4. Other regions present higher and lower opportunities for earning income. These induce emigration and immigration for this region, which in combination with its birth and death rates may produce a tendency over time for its population to grow, shrink, or maintain its size.

5. The natural capital (both public and private) of the region is, with few exceptions such as air, limited. The per capita availability of natural capital to residents is higher than that in many other regions.

6. Virtually all types of natural capital (both public and privately owned) in the region are in some type of use to some extent, so there is a degree of competition between wants for these uses. Many of these wants may be expressed as political wants rather than as economic wants (which are called demands).

To illustrate these conditions and their multiplication of the scarcity of natural capital, I describe a case from an Australian state. In the first decade of this century there was considerable public dispute over whether to: (a) dam the Meander River in northern Tasmania, to produce private goods in the form of employment and income from agricultural irrigation and hydroelectricity (plus, as a secondary effect, the public ‘good’ of trout fishing in an industrial impoundment); or (b) not dam the river, to protect opportunities for Tasmanians and tourists to enjoy the mainly natural public goods of the area. These goods were: the exceptional scenery of a forested mountain valley (which would be damaged by both the dam and its reservoir with a summer draw-down zone hundreds of metres wide); rare native quolls (carnivorous marsupials, approximately the size of a domestic cat); and forms of appreciation of the river based on natural seasonal flows and largely natural surroundings, such as trout fishing, rafting and canoeing. The dispute arose because it became apparent that projected economic returns from a dam in this place might pay for its construction and operation, so op-
tion (a) became attractive to farmers in the region and to other Tasmanians favouring economic growth.

It must be noted that the private goods primarily produced by (a) would be taxed to finance consequent new public goods such as infrastructure and government services. Moreover, the production of those private goods and consequent public goods would tend to make the economy of the region grow further, producing more private and public goods. The same effects will be produced to some degree by (b) if its primary protection of natural capital supports commercial activity such as tourism and/or the immigration of creative and entrepreneurial talent seeking an attractive environment for work and residence. As in (a), any private goods produced by (b) will be taxed to finance consequent new public goods, and all these activities help the economy to grow. The possible chain of consequences for each option may therefore be summarized (without quantification) as follows.

a. Dam → private goods → public goods (services, infrastructure) → more private and public goods (services, infrastructure) → etc.

b. Not dam → public natural capital protected → private goods → public goods (services, infrastructure) → more private and public goods (services, infrastructure) → etc.

The essential difference in possible outputs is that (a) does not protect public natural capital (denoted below as PuNC) whereas (b) does. Politicians will react to these options with a private goods bias, including its supply bias variant. So if (a) seems to offer a greater or more certain supply of private goods than (b), then politicians will tend to favour (a) and ignore its damage to PuNC. The following four-step sequence gives the likely political choice and its chain of consequences. This sequence is shown diagrammatically in Figure 5.1, where the steps have the same numbers and are prefixed with letters indicating what produces them. For example, the figure shows step 2 occurring in two ways, labelled A2 and P2. It is the P process (P for popula-
tion growth) that is described in the following sequence. The A process is introduced later.

1. Public dispute arises on whether to dam or protect the river, signifying some scarcity of both private goods (water rights, electricity, employment and income) and public goods (PuNC in the forms of natural scenery, endangered quolls and freeflowing rivers). A political decision is required on which scarcity is the greater cost to society and therefore warrants mitigation, or prevention of its escalation. The decision is made with a private goods bias, including its supply bias variant, so it is likely to be political decision (a), to dam the Meander to convert PuNC public goods into a supply of private goods in the form of irrigation water and hydroelectricity. This political decision and consequent development is shown in the centre of Figure 5.1 by ‘Political decisions…’ producing ‘More development’. Step 1 is shown there as A1 together with P1 and is a political decision that is driven in two ways (P and A). As indicated above, the A process is described later in this section (§5.3.1), after the description of the P process is completed. The development produced in step 1 by political decision (a) will create more employment and income in the region— which could be considered to be either the whole of Tasmania or its central northern part, which is an area of about 15,000 square kilometres supporting around 150,000 residents.

2. Those increases in employment and income in this region (say, all of Tasmania) encourage its population to grow as indicated by P2 in Figure 5.1. They do this by attracting migrants from other regions (outside the state) and by retaining Tasmanian residents who might otherwise migrate to other regions for more employment and income (see conditions 2, 3 and 4 above).

3. That expansion of population increases aggregate want in the region for all the private and public goods that people want (arrows P3 in Figure 5.1).
The scarcity multiplier

A system of 4 mutually reinforcing IWS positive feedbacks, operating within a geographic/political region.

(IWS: inflation of want by supply)

NATURAL CAPITAL
Becomes scarcer as stocks deplete (D) and/or as wants (W) for it inflate

MORE DEVELOPMENT
(Produces more personal income)

Political decisions on development proposals
(Proposals usually approved in liberal democracies because of a ‘private goods bias’)

GROWTH OF POPULATION
(In/out migration, births>deaths?)

MORE CONSUMPTION
(Of private goods – which include positional goods)

MORE SALES REVENUE

MORE SALES PROMOTION

HUMAN CAPITAL & INFRA-STRUCTURE

FINANCIAL CAPITAL

Public (PuNC)

Private (PrNC)

GROWTH OF POPULATION
(In/out migration, births>deaths?)

YET MORE WANTS
(Inflated by supply)

For private goods

For public goods

ADAPTATION
Desire for novelty

POSITIONAL COMPETITION
Desires to belong and to dominate. Includes status rivalry

Arrows: Indicate physical flows, perceptions, desires, decisions or actions.

IWS positive feedbacks: P: population growth IWS. A: affluenza IWS. Affluenza is a compound feedback that comprises 3 IWS feedbacks – positional competition (Ap), adaptation (Aa) and sales promotion (As)

System steps: 1 Political decisions. 2 Population growth (P2) and affluenza (A2). 3 Inflation of want (P3 – from population growth, and A3 – from increases in wants of each person). 4 Escalation of scarcity of natural capital from increases in wants for it (W4) and depletion of it (Dpr4, Dpu4).

Fig. 5.1. The scarcity multiplier.
4. Some of this increase in want is for more of the public and private goods that are provided from the natural capital of the region, which is indicated by W4. This natural capital is limited, so the increase in wants for it means that its perceived scarcity rises (see the Natural Capital box in Figure 5.1). That rise lifts the scarcity of both PuNC and privately owned natural capital (PrNC—for example, freehold land) above their scarcities at the time of the initial step 1 from political decision (a). The scarcities of both PrNC and PuNC will be further increased if step 1 physically depletes them (Dpr4 and/or Dpu4 in Figure 5.1).

The rise in scarcity of any type of PuNC (such as our free-flowing river in a beautiful, largely natural valley with endangered native fauna) means that this type becomes more valuable in the eyes of the public, so it then appears less likely that politicians will repeat their step 1 decision to convert more of that type into private goods. However, Step 3 (P3 in Figure 5.1) pushes them to provide more private and public goods so they respond with a second political decision. That decision will have a private goods bias, so it will tend to be for more private goods at the cost of public goods, so we have a second step 1 (P1). A second phase of development follows, converting more PuNC into PrNC or other private goods. This expansion of the supply of private goods evokes a second step 2 (P2), followed by a second step P3 and step W4. The second step 3 will tend to repeat the effect of the first step 3 and so the 1–2–3–4 sequence may be repeated several times. This feedback is basically the loop of steps 1–2–3–1–2–3 and so on, with W4 (wants for natural capital) as well as step 1 being caused by step 3. Step 1 then causes Dpr4 and Dpu4 (depletion of private and public natural capital) as well as causing P2.

To see how long this feedback will continue to operate and therefore how scarce it may make PuNC (PrNC will be considered later), we must inspect the process more closely. Each step 1 diminishes the quantity of PuNC that remains (via Dpu4 in Figure 5.1), making it scarcer and thus perceived as more valu-
able by citizens, so that they give more emphasis to politically protecting its remnants. In the case of PuNC in the form of free flowing rivers, as more of them get dammed, those citizens who become concerned about this will place a higher value on the remaining natural and wild rivers. This means that the step 1 political decision of the multiplier will tend to shift from choice (a) to choice (b). However, such a shift will not take place until the private goods bias of the political process has cycled the multiplier to produce some underprovision of this PuNC. However, as particular types of PuNC become underprovided in this manner, the exploitation that does this is shifted away from these PuNC by the rising public perceptions of their values, onto other PuNC that have not yet gone (or gone so far) through this process. This substitution of less scarce PuNC for more scarce types tends to stop the rising scarcity of any particular PuNC from shifting the political decision at step 1 from (a) to (b), so the under provision spreads widely across different types of PuNC. In the example of hydro-electricity and freshwater from freeflowing rivers, as such rivers become rare the satisfaction of rising wants for energy and water will tend to shift from damming more rivers to using PuNC that is perceived as being more available because there is less want for it, such as (for energy) windy sites for wind turbines and (for irrigation) urban waste water, which is likely to be more expensive to treat and deliver than river water. The result is that the scarcity of PuNC as a whole continues to escalate and the costs of using PuNC increase as less economically attractive PuNC (e.g. waste water and wind) are substituted for PuNC resources that are becoming scarcer (such as rivers for freshwater and hydro-electricity). Such substitutions often further raise the scarcity of PuNC by creating new environmental costs, for example, wind farms may damage scenery, worry people with low frequency noise and kill native birds. In Tasmania, the latter problem is threatening the endangered wedge-tailed eagle and may finish off one of the world’s rarest and most endangered species, the migratory orange-bellied parrot. Such gradually rising costs of growth, both monetary (costs of private goods) and intangible (losses
of public goods), tend to be overlooked by citizens focused on the immediacy of the private goods of employment and disposable income. This compels politicians to pursue private goods via economic growth and minimal taxation, with muted regard to whether those goods are worth the concomitant erosion of public goods.

The 1–4 sequence thus produces a feedback loop that progressively converts more and more PuNC to private goods. As this loop continually escalates the scarcity of the natural capital of the region in which it occurs, it is called the scarcity multiplier. This process will persist until the natural capital of the region becomes scarce enough to lower its economic opportunities to the level of those in places that were previously less well-endowed in terms of their ratio of natural capital to population. As this may eliminate the incentives driving the migration effects of step 2 (P2), it may block further feedback and scarcity multiplication may cease. However, while this block is developing, the remnant relatively high per capita availability of natural capital in this region may attract people looking for the lifestyle that it provides. As the Department of Economic Development in Tasmania (Tasmania 2007) has boasted: ‘More and more people are flocking to Tasmania because we offer a lifestyle that has almost disappeared from the modern world.’ In its enthusiasm for economic growth, the Department appears determined to ignore the awkward fact that this ‘flocking’ will erase that lifestyle. We have here an unabashed display of the private goods bias of democratic government. As growing scarcities of natural capital in Tasmania (or in any other region with the conditions specified above for the multiplier) reduce both economic and lifestyle attractions, the migration effects producing growth of population will diminish and the loop may break when the scarcity of natural capital here is equivalent to that elsewhere. The early stage of this process is described for Tasmania in the Appendix, which looks at the effect of natural capital on growth of population over two centuries of colonization and industrial development.
The scarcity multiplier is a positive feedback because its initial input and drive, the step 1 political decision (a) to allocate natural capital from public to private uses, is repeated to some degree by each cycle. It is also an IWS response, in which supply increases wants by increasing the size of the population (step P2). Although net immigration is predicted to eventually halt with increasing scarcity of natural capital, the scarcity multiplier will keep operating past that point because it has another drive operating in parallel with that of growth of population and which is less affected by rising scarcities of natural capital. This second drive makes the multiplier stronger as well as more persistent. It is the IWS signified in Figure 5.1 as A, which we might consider to start with A2, where the increase in supply of private goods from more development stimulates a rise in consumption by each citizen because the increase in supply of private goods reduces prices and increases incomes. The ‘A’ label for this IWS stands for ‘affluenza’, an ailment described by economists Clive Hamilton and Richard Denniss (2005, 3) as the ‘unfulfilled feeling that results from efforts to keep up with the Joneses’. This status rivalry is part of the socioeconomic competition for what are known as positional goods. In addition to goods valued for the social status they confer, positional goods include other products or services that are in scarce supply relative to the number of people in a society, such that not everyone can have access to them. For example, as Hirsch (n.d.) explains, education can be at least partially a positional good: ‘The value to me of my education — the satisfaction I derive from it [i.e. the interesting and well paid work it gives me access to] — depends on how much education the man ahead of me in the job line has.’ Competition for positional goods is therefore a ‘zero-sum game’ in which my gain creates your loss and vice versa (Hirsch 1977, Frank 2005, Schneider 2007).

Three consequences of A2 result in an aggregate increase in want from step 3, which is shown in Figure 5.1 as Ap3 and Aa3 reinforcing P3, while they themselves are strengthened by As. Ap3 and Aa3 increase want for private goods only, whereas the population growth step 3 (P3) increases wants for PuNC and all
other public goods as well as for private goods, including those that are natural capital (PrNC). So the two types of step 2 (A2 and P2) work together to push wants at step 3. Although this process increases wants for public goods (including PuNC) and private goods (including PrNC), these increases are biased by affluenza towards more wants for private goods. Political decision-making then adds its private goods bias to this emphasis on private goods, so each cycle of the feedback converts more and more PuNC to private goods and the scarcity of PuNC is multiplied.

The affluenza drive of the scarcity multiplier is persistent and strong. As indicated in Figure 5.1 it arises primarily in positional competition and adaptation and, as previously noted in §2.2.3.2, both these behaviours escalate wants for private goods and thus increase efforts to supply them. Consequent increases in supplies of these goods enable positional competition and adaptation to further increase wants for them (Ap3 and Aa3), so both responses produce their own IWS positive feedbacks by stimulating development projects. In addition, both positional competition and adaptation are intensified by sales promotion (labelled As in Figure 5.1), which as noted in §2.2.3.2 may also maintain itself as a positive feedback that strengthens if it increases sales, as it is designed to do. We therefore have another IWS in which advertising raises sales (i.e. supply) that increases producers’ revenues, enabling them to increase their advertising, further increasing wants and thereby sales (supply) and so on, which is Galbraith’s ‘dependence effect’. Affluenza is thus a compound positive feedback of three IWS feedbacks, one of which, sales promotion, boosts the other two and may get stronger over time.

The three components of affluenza cooperate to overturn the law of diminishing marginal utility. This has been a fundamental principle of economics, that while extra income makes a big difference to people’s happiness when they are struggling with physical poverty, it contributes very little to the happiness to those who are no longer poor. Affluenza erases this effect; it
re-establishes people’s wants as they are ‘satisfied’ by increased income.

An important difference between affluenza IWS and population IWS is that affluenza IWS inflates aggregate want by increasing the wants of each individual, whereas population IWS inflates aggregate want by increasing the number of individuals. The total impact of these two IWS on aggregate want is therefore calculated by multiplying the population and affluenza impacts together — not by summing them.

The simultaneous operation of the affluenza IWS complex (the A steps in Figure 5.1) and the population growth IWS (the P steps) means that even after the latter has been stopped by natural capital depletion becoming as acute as that elsewhere (see condition 5 above), the A feedback will persist. The scarcity multiplier will therefore keep running to produce indefinitely deteriorating living conditions as the ratio of natural capital to population declines. Economist Michael Schneider (2007) has expressed this as follows.

Recognition of the importance of positional goods leads to two pessimistic prophecies relating to the future of mankind. It suggests, first, that even if an infinite quantity of consumer goods could be produced in an infinitesimally short period of time, individual human beings would not be happy with their economic lot; Veblen [1899] can be ‘credited’ with being the first to have implied this prophecy. It suggests, second, that even if the rate of growth of the world’s population were zero the world’s non-renewable resources would ultimately be exhausted, due to human beings’ infinite pursuit of status; the ‘credit’ for being the first to imply this prophecy goes to Hirsch [1977]. All is not lost, however. We could all become stoics, accepting that status is available only to a minority. This does not imply the abolition of ambition, however. To adapt Alain de Botton, Stoicism does not recommend inferior status; ‘it recommends that we neither fear nor despise it’ (Botton, 2000, p. 98).
5.3.2 Extreme scarcity from the private goods bias
As discussed in §2.2.2 and §2.2.3, the basic themes of government policy in liberal democracies are driven mainly by public opinion, but most citizens are disengaged from thinking widely and deeply about public goods, especially PuNC, so the minority of public opinion that expresses careful thinking about this tends to be ignored by government. This is ‘excessive compromise’, one of the three ways that the triple dysfunction hypothesis views as producing the private goods bias in the political decisions that drive the scarcity multiplier.

Excessive compromise might be expected to drive the multiplier to exacerbate scarcities of PuNC and PrNC to the extent that these become so obvious and serious that the attention and concern of the usually disengaged majority is aroused, so that those citizens also demand that their government prevents natural capital from becoming more scarce—even if their private goods (such as employment and income for employees and profits for employers) must be restricted in order to achieve this. However, it is difficult to see this happening because the disengagement of most voters prevents them from realizing that the rising scarcities they experience are caused, not only by each person wanting private goods to an extent that reduces the quantity and quality of natural capital, but also by the presence of too many people, most of whom are doing this wanting. Moreover, the inattentiveness and ignorance of voters on this problem of population size is cultivated by the business lobby, which presents only those aspects of the problem that favour its interests as it argues for cheap labour, for ready-made expertise in the form of skilled immigrants and for larger populations of consumers and investors. This lobby has considerable financial ability to manipulate both public opinion and politicians, not only on the issue of the size of the population, but also to get them to want more private goods, which is partially indicated by As, Ap3 and Aa3 in Figure 5.1. The part that is not indicated there is the influence of business lobbyists in encouraging the private goods bias in political decision-making. The combination of excessive compromise and the business lobby
may therefore eventually push the A and P feedbacks to escalate the scarcity of both PuNC and PrNC to extremes that produce such hardship and stress for the mass public that democratic government becomes impossible across large jurisdictions such as provinces and nations.

5.3.3 Three reinforcements of the scarcity multiplier
So far in this analysis, the scarcity multiplier looks like a persistent social mechanism that eventually produces severe degradation of natural capital, then social stress that may foster religious fanaticism and political collapse — unless it can be stopped by reforming the political system so that it no longer has a private goods bias and is therefore able to control both affluenza and growth of population. The urgency of such reform is emphasized by the three following reasons why a multiplier may be even stronger and more persistent than indicated by the foregoing description. The first two of these reasons are likely additional stimulations of wants for private goods and the third is a positive feedback in which the private goods bias supports affluenza while affluenza fosters the bias.

Possible accentuation of wants for private goods from growth in population. It might be anticipated that the multiplier’s population growth step 2 (P2) will not affect the political decision made (with a private goods bias) at step 1 in the consequent cycle of the multiplier because a bigger population has a proportionally bigger aggregate want for both public and private goods. However, if that growth of population adds more (or less) wants for private goods than for public goods, then it will reinforce (or reduce) the effect of the private goods bias in the political decision at step 1. It will not increase (or decrease) the bias, but will push political decisions in the same (or opposite) direction that the bias tends to take them.

What will actually happen depends on the circumstances, but one that seems likely to occur would reinforce the multiplier by adding more citizen want for private goods than for public goods into the choice between (a) and (b) that precedes step 1.
As much of the growth of population will come from immigration, the desires of migrants will affect the ratio of private/public goods wants that politicians express in their policies. The newcomers will often be from less affluent places, many of which are heavily populated and therefore have a relative per capita scarcity of natural capital, which may have cultivated a strong focus on earning a living or acquiring financial wealth. Immigrants may therefore have a higher want for private goods than the population they are joining. Another source of this attitude may be that such immigrants have had relatively limited opportunities (such as access to high quality outdoor environments, to leisure time, to education and to income) to learn how to use natural capital to enhance their quality of life. To be specific, they may not be accustomed to living and holidaying in spacious rural or natural situations that facilitate pursuits such as fishing, hunting, horse-riding, gardening, hobby-farming, all-terrain vehicle use, observing wildlife, surfing, diving, skiing, mountaineering, wilderness backpacking, kayaking and river rafting. Any such effects of immigration at step 2 would strengthen the cultural drift noted above as being produced by affluenza, towards greater wants for private goods.

Accentuation of wants for private goods from human adaptation to loss. The distress of citizens at losses of PuNC due to the scarcity multiplier will fade as time and generations pass, leaving them with lower expectations or wants for these goods. As De Waal (1996, 201) observes, humans are ‘born adaptation artists.’ Layard (2005, 229) notes that if ‘things get better, we after a while take them for granted. If they get worse, we also eventually largely accept them.’ Adaptation to loss occurs not only within the individual, but between generations, for when children grow up in a situation that the older generation recognizes as degraded because of the earlier experiences of its members, the new generation will consider it normal. These young people have known nothing better so they unconsciously tolerate the situation, no doubt employing instinctive coping responses, as observed by De Waal below in §5.3.6.
This inter-generational adaptation to loss takes much longer than the adaptation to gain described above for affluenza and is a different process. With affluenza, a gain in the supply of private goods is fairly quickly adapted to by the individual; so that after a few months or perhaps years she feels that she really requires a higher level of supply. Both inter-generational and intra-generational adaptations to loss occur with natural capital whether it is PuNC or PrNC. Although humans are more sensitive to losses than to gains, their feelings of loss usually fade with time (Layard 2005, 141–42, 167–68, 229) so the individual’s sense of loss of natural capital may diminish over their lifetime. Both intra-generational and inter-generational adaptations to loss will therefore work together with the private goods bias (without changing that bias) to escalate public support for the choice of (a) in step 1 of the scarcity multiplier, assisting it to convert PuNC into private goods. Adaptation to loss thereby shifts the culture from having strong interests in the natural environment, towards a greater focus on people, the artefacts they make and the things they do. This raises the question of whether a culture adapted to crowding is healthier, more fulfilling and more sustainable than one that is not. Evolutionary psychology should help to answer it (for an example of this approach, see the Schwartz analysis of motivational values presented later in §8.1).

**THE PRIVATE GOODS BIAS SUPPORTS AFFLUENZA WHILE AFFLUENZA FOSTERS THE BIAS.** The private goods bias is likely to cause the public cost of the influence of affluenza (a negative public good) to be ignored, so that affluenza (sales promotion, positional competition and adaptation) remains unregulated and free to focus citizens more and more onto private goods. So the private goods bias supports affluenza. At the same time, politicians tend to compete with each other in following citizens as affluenza intensifies their wants for private goods, which means that politicians tend to accentuate their private goods bias. In other words, the bias strengthens because citizens and their political agents pay progressively less attention to public goods. So affluenza fosters
the private goods bias, while it supports affluenza. Affluenza therefore drives the scarcity multiplier not only by producing more want by citizens for private goods (as seen in steps Ap3 and Aa3) but also by tending to strengthen the private goods bias at step 1, with each cycle of the multiplier.

**Summary.** It seems likely that although escalating scarcities of PuNC should increase its value to citizens, this may not happen because the escalation will be concealed from them, in three ways: (a) by affluenza increasingly focusing their wants onto private goods; (b) possibly by immigration focusing their wants more strongly onto private goods; and (c) by their intra- and inter-generational adaptation to loss. While citizens are prevented in such ways from perceiving increasing values of PuNC, politicians will also undervalue PuNC with their private goods bias. That undervaluation is likely to be maintained or even exacerbated over time because the private goods bias is encouraged by affluenza, distracting politicians from appreciating public goods, including the public good of eliminating affluenza.

Democratic governments will therefore persist in the face of increasing scarcities of PuNC to further diminish it wherever this supports the production of more private goods. The scarcity of PrNC escalates at the same time, as a growing economy demands more of it. This escalation may occur more easily than that of PuNC because the private ownership of PrNC may inhibit citizens at large from viewing its growing scarcity as a problem they have in common and which therefore requires correction by collective action. Instead, those who own PrNC may welcome its growing scarcity, as they can make more money by selling it as its price inflates. So citizens may fail to recognize the growth of scarcity of PrNC as a negative public good (it raises costs for subsequent generations) that they should ask their politicians to halt. With such behaviour, each generation will create more scarcity for the next, in both public and private natural capital. This syndrome is alive and flourishing in Australia as its government allows foreigners to buy Australian
PrNC (such as Darwin’s port, residential properties and other freehold land) which accelerates the escalation of its price.

5.3.4 The influence of each IWS system and their control

Either population IWS or affluenza IWS may be enough on its own to drive a damaging scarcity multiplier. If affluenza IWS is blocked, immigration from other regions with fewer PuNC exploitation opportunities may continue to drive population growth (P2) as long as such a difference between this region and any others lasts. As noted above, relatively high wants for private goods by immigrants may assist the private goods bias to drive the multiplier through its step 1 political decisions of type (a) to convert PuNC into private goods. Immigration may thus overcrowd this region to the extent of overcrowding elsewhere on the planet, so the multiplier could eventually produce a very high scarcity of natural resources through population IWS alone. If this is prevented by government restriction of immigration but the affluenza IWS is permitted to operate, that alone may drive the multiplier to indefinitely high levels of scarcity of both PuNC and PrNC.

Affluenza may be countered by devices that provide incentives for people to minimize their positional competition and adaptation. These devices should focus on public goods as well as on private goods. The private goods focus should give incentives for people to refrain from wanting more—including, as Hamilton and Denniss (2005, 34–35) put it, to ‘want what I have’ rather than to ‘have what I want’. One such device would be laws restricting sales promotion. A modest start in this direction was suggested in §4.2.3 with Herman Daly’s (2009, 4) call: ‘Advertising should no longer be treated as a tax deductible ordinary expense of production.’ Devices that focus on public goods may combat affluenza by helping citizens with collective choice, so that their choices of public goods are easier, clearer, better informed and more deliberative; therefore more able to compete against the choices for private goods that they could make instead. Such facilitation of collective choice appears to
require a public forum that assists citizens to jointly deliberate and select strategic public goods, such as controls on advertising and goals on population size. A proposal for this type of institution is given in Part 2.

5.3.5 Motivators of the scarcity multiplier other than political decisions to privatise public natural capital

The multiplier may be stimulated in more ways than that shown above — which is a conversion of public goods into private goods, as by damming the Meander River. The central box of Figure 5.1 indicates that a crucial drive in that version of the multiplier is the political choice of whether to privatise PuNC. There is however, another drive that is assumed for the same step but not explicitly stated there: the desire of private entrepreneurs for development projects. As discussed below, this alone will propel the multiplier in the case of proposals that do not require political approval to privatise PuNC. There are three types of such proposals: To add value to existing privatisations of PuNC; to produce more income from existing PrNC; and to produce more income without utilizing natural capital. As the last of these would not directly deplete natural capital and the first two may deplete it as collateral damage (such as new forms of management further damaging wildlife, scenery and so on), much of their exacerbation of its scarcity may be by elevating wants for it (indicated by W₄ in Figure 5.1) producing crowding effects and raising prices of PrNC.

Adding value to privatised public natural capital rather than privatising more of it. Consider, for example, a new value-adding (‘downstream processing’) project in a region, such as a pulp mill that would use public forest already commercially used in that place to produce wood chips for export. If this new project was environmentally benign, it would appear to be an unmitigated benefit for the region as it would produce more market return from PuNC (public forest) that is already used for private goods (the income and employment from wood chip
sales). However, the increase in income and employment from the pulp mill would fuel both A2 and P2, generating scarcity multiplication.

In 2003 a proposal for a project of this type in Tasmania began a controversy that became increasingly acrimonious, socially divisive and politically corrupt (Beresford 2015). The proponent was the timber company Gunns Ltd., which by 2006 was the largest wood chip exporter in the southern hemisphere. It proposed to build and operate a AUD$2.5 billion pulp mill (Wells 2011), which would be the biggest private project ever undertaken in the state, with the potential to sustainably boost its population by 2%. This proposal created intense public dispute over potential environmental impacts and associated damage to tourism, fishing and wine production, but those arguments did not include the scarcity multiplication that the development would produce (even if it adversely affects other industries to cause some loss of production in those areas). Despite the public’s environmental concerns, the state government approved the proposal and, in its eagerness for economic growth, circumvented the official assessment process being undertaken by its own Resource Planning and Development Commission. This display of private goods bias provoked widespread public outrage against corruption in government. Notwithstanding this deficit of political legitimacy, the federal government exercised its own private goods bias to support the state government by approving the proposal in 2007. Part of this bias was government failure (arguably an unwillingness) to recognize the falsity of the promise of such developments: As shown by the scarcity multiplier analysis, contrary to expectations they do not satisfy citizens’ wants for more employment and more income, instead they are likely to increase them. In this case the private goods bias is expressed by public policy that ignores longer-term public goods.

In September 2012, Gunns Ltd. became insolvent and collapsed, abandoning its mill proposal. This was due to a combination of factors, including the demise of the East Asian market for wood chips from Tasmanian old-growth forests (due to
cheaper, higher-quality resource from regrowth plantations in Vietnam and South America), the high value of the Australian dollar (due largely to Australia’s mining boom) and the expense for Gunns of coping with the anti-pulp mill campaign in Tasmania, which included the revision of the design of the mill, revising environmental impact assessments, legal action against twenty prominent environmentalists and changing its supply source in Tasmania from old-growth to plantations (partly in response to environmentalists pressuring Asian paper makers to avoid using pulp made from high conservation value old-growth forests). In addition, Gunns had difficulty obtaining financing for the project because the vociferous and sustained public opposition made potential creditors wary of being seen to be associated with it and also because of its doubtfulness as an investment in view of competition from cheaper pulp on the world market.

The intensity of public argument over this project indicates that even though it had official approval, it did not have a firm ‘social licence’. If scarcity multiplication had been included with the other arguments against the pulp mill, it is possible that the dearth of social licence would have intensified and become politically recognized as quite rational, forcing the state and federal governments to withdraw their approval. In the future, unless scarcity multiplication is made a public consideration, it appears inevitable that sooner or later another proposal for a pulp mill will be made and that this will follow the pattern discussed above for the dam on Tasmania’s Meander River. That project was approved by the state government and water flowed over the spillway in September 2008. In the case of the pulp mill, the necessary resource is still there and growing—as regrowth forests and plantations. The temptation that this offers requires Tasmanians to think carefully about whether they want their island to carry a bigger population. If they do, then a new pulp mill will help them get it.

Development that officially utilizes either no natural capital or just PrNC. Decisions to initiate these two types of project
tend to be a matter for private entrepreneurs acting within existing environmental and other laws and permits, rather than requiring environmental impact studies and high-level political approval. In the scarcity multipliers generated in these two ways, as well as in the preceding two versions, PuNC might be unofficially utilized and damaged by the externalization of costs, such as by discharging unlicensed wastes.

To visualize the scarcity multiplier with no official use of PuNC and with or without the use of PrNC, Figure 5.1 would give the picture with only two alterations. One is to replace the wording in the central box ‘Political decisions on development proposals (Proposals usually approved … )’ with just ‘Private enterprise decisions on development projects’. The other is to add the label ‘Externality’ to the arrow Dpu4 (from ‘Public’ natural capital to ‘More development’) to indicate that in this case of basically private enterprise decision-making, any such use of PuNC is neither officially sanctioned nor is the state paid for it; so it is a cost externalized from the market to the public at large.

As this modification of Figure 5.1 substitutes private enterprise decisions at step 1 for political decisions at this point, it substitutes one form of private goods ‘bias’ (a private enterprise motive) for another (government failure), so that a similar orientation of decisions is still the central drive of the multiplier. The focus of private enterprise on producing private goods will therefore provide drive for the multiplier whether government approval to use PuNC is required or not — provided that other conditions are conducive to it, which are those specified at the outset of §5.3.1 together with the circumstances necessary for business, such as the availability of markets, labour, materials, infrastructure, energy, technology and finance.

When such conditions are conducive to the scarcity multiplier, government action is required if any of its four versions are to be stopped. The causal chains of Figure 5.1 indicate that this may involve one or more of the following measures: (a) refusal to allow more PuNC to be privatized (whether as an externality or not); (b) combating positional competition and adaptation (for example, with laws that limit sales promotion, with incen-
tives for citizens to deliberate and choose public goods rather than private goods, and with measures to reduce inequality); (c) taking measures that slow or halt growth of population; or (d) refusing to approve many proposals for commercial development. Tourism and eco-tourism ventures are often viewed as highly acceptable forms of such development, but as they also may contribute to scarcity multiplication in any of the modes described above, they too should be assessed for this effect as part of any governmental approval process.

5.3.6 Costs and benefits of the multiplier
The scarcity multiplier operates as self-propagating, expanding sequences of commercial developments of all sizes, many of which are encouraged by political decisions that appear rational to both voters and their political agents because the political and market systems present them with incentives to favour private over public goods. Two major costs of this process are that it makes development reproduce needs for more employment and income similar to and possibly bigger than those the development was politically intended to satisfy, and at the same time it increases the scarcity of natural capital. These two costs are experienced as frustrated wants for private and public goods and they may subsequently produce a third cost: forced changes to the culture as successive generations try to cope with the increasing scarcities.

The version of the multiplier shown in Figure 5.1 produces the second cost (making natural capital more scarce) by progressively converting PuNC into private goods and also by increasing the number of people wanting to use both PuNC and PrNC. Although this process produces other public goods by generating tax revenue, those goods must serve more citizens and they will be limited by the private goods bias in government decisions on tax rates. In addition, the extra public goods provided in this way cannot substitute for some of the types of PuNC that are lost, such as wilderness, biodiversity, living space, arable land and natural stocks and flows of freshwater. Moreover, those extra, tax-financed public goods require paid work by
A pervasive symptom of dysfunction citizens, in contrast with the free services from the PuNC that was eliminated to produce them. These frustrations of increasingly scarce public and private natural capital appear likely to doom citizens’ aspirations for a higher quality of life. The rise of environmental disputes over the last half-century indicates that this regression has now become a very real problem. Over the decades ahead it is possible that the inexorability of this escalation, combined with the very apparent inability of democratic governments to recognize it, let alone prevent it, will frustrate those with a social conscience so that fewer citizens may attempt to resist it. An example of such resignation may be the recent diminution of concern about global warming by citizens in many democracies, as indicated by a ‘shocking deficit of political will’ at the Rio+20 conference (Pearce 2012b). This may be an example of the multiplier’s third cost noted above, of forcing change in the culture as a coping measure.

The multiplier also produces a fourth and fifth cost. The fourth is that it encourages inequality of wealth with its private goods bias and its affluenza IWS. As people are enticed to consume more, some have the ability or the position to gain consumptive advantage over others. Inequality was described in §4.2.3 as discouraging work-sharing, which fuels unemployment while limiting quality of life and productivity. And unemployment fosters inequality so that the situation tends to deteriorate in a positive feedback. Richard Wilkinson and Kate Pickett (2009) have found that unequal societies have significantly worse health and social problems than societies with more economic equality. Moreover they found that the relationship is causal (2009, 190–96), with inequality creating or exacerbating problems in social trust, mental illness (including drug and alcohol addiction), life expectancy, infant mortality, obesity, children’s educational performance, teenage births, homicides, imprisonment rates and social mobility. To explain this, they note that inequality

is a powerful social divider…Our position in the social hierarchy affects who we see as part of the in-group and who as out-
group — us and them — so affecting our ability to identify with and empathize with other people… The search for a mechanism [that causes inequality to damage health] led to the discovery that social relationships (as measured by social cohesion, trust, involvement in community life and low levels of violence) are better in more equal societies. (Wilkinson and Pickett 2009, 51, 192)

They conclude that the major cause of the relative success of more equal societies is that people relate to each other in a more supportive way (2009, 192–93). Rather predictably, as will be seen later from the discussion in Chapter 8 of liberal-conservative differences, Wilkinson and Pickett’s work has provoked much criticism, such as that published by the Democracy Institute, from writer Christopher Snowdon.

The fifth cost of the multiplier is also produced by its affluenza feedback. Hirsch (1977, 87) called this the ‘commercialization effect’, the

effect on the characteristics of a product or activity of supplying it exclusively or predominantly on commercial terms rather than on some other basis — such as informal exchange, mutual obligation, altruism or love, or feelings of service or obligation.

This effect is generated by the positional competition, adaptation and sales promotion of the affluenza side of the scarcity multiplier. As they focus people increasingly on earning and spending money and on valuing things in monetary or commercial terms, the prospect of such external reward crowds out the valuing of things by internal motivations such as those quoted above from Hirsch. As Sandel (2012, 122) puts it: ‘When people are engaged in an activity they consider intrinsically worthwhile, offering them money may weaken their motivation by depreciating or ‘crowding out’ their intrinsic interest or commitment.’ One of his illustrations is the following exchange.

The American Association of Retired Persons asked a group of lawyers if they would be willing to provide legal services to needy
Economists Bruno Frey and Reto Jegen summarize the implications of the commercialization effect as follows:

Arguably, the ‘crowding-out effect’ is one of the most important anomalies in economics, as it suggests the opposite of the most fundamental economic ‘law’: that raising monetary incentives increases supply. If the crowding-out effect holds, raising monetary incentives reduces, rather than increases supply. (quoted in Sandel 2012, 122)

This means that the commercialization effect can make the production of goods and services less efficient because intrinsic motivations that produce them quite well without external monetary incentives are crowded out when the latter are applied. For example, in donating or selling blood, the replacement of ‘feelings of service or obligation’ in donating with the monetary incentive in selling (as is done to some extent in the USA) results in chronic shortages, wasted blood, higher costs and greater risk of contamination (Sandel 2012, 123). However, a more significant cost of the commercialization effect is that it fosters a selfish attitude, such as that described by economist Larry Summers.

We have only so much altruism in us. Economists like me think of altruism as a valuable and rare good that needs conserving. Far better to conserve it by designing a system in which people’s wants will be satisfied by individuals being selfish, and saving that altruism for our families, our friends, and the many social problems in this world that markets cannot solve. (quoted in Sandel 2012, 130)

To which Sandel (2012, 130) replies:
This economistic view of virtue fuels the faith in markets and propels their reach into places they don't belong. But the metaphor is misleading. Altruism, generosity, solidarity, and civic spirit are not like commodities that are depleted with use. They are more like muscles that develop and grow stronger with exercise. One of the defects of a market-driven society is that it lets these virtues languish. To renew our public life we need to exercise them more strenuously.

Perhaps the US displays the commercialization effect writ large, as its politics lacks a left wing that stresses the importance of sharing and other civic virtues and is dominated by individualism such as that of the gun culture and the Tea Party, while, as King observes, there 'are few countries in the world whose collective ideology is more pro-business than that of the United States' (see §3.2). Perhaps the strong tradition of philanthropy in the US is an individualistic response to atrophy of civic virtue at the collective scale.

Against these five ways in which the multiplier is costly, a possible benefit is that it helps more people to live in the region in which it operates. However, sooner or later this is at the cost of rising scarcities of natural capital, which creates an increasingly technological, commercialized, expensive and narrow lifestyle. This combination of having a bigger population while each person has a higher cost of living and lower quality of life is very hazardous, because increasing the population at the risk of the happiness of the individual may result in a rapid and severe reversal from a situation of moderately positive value where the average person generally feels somewhat satisfied, to one of strongly negative value in which there are more people, most of whom feel more or less stressed from crowding effects. In this connection, it is relevant to note De Waal's (1996, 200–201) assessment that

coping with stress is not the same as getting rid of it; constant behavioural (and probably also physiological) countermeasures are necessary under crowded conditions. All of these techniques are
part of the impressive adaptive potential of the primate order ... Human populations with long crowding histories, such as the Japanese, the Javanese and the Dutch, each in their own way emphasize tolerance, conformity and consensus, whereas populations spread out over lands with empty horizons may be more individualistic, stressing privacy and freedom instead ... Adjusting the definition of right and wrong is one of the most powerful tools at the disposal of Homo sapiens, a species of born adaptation artists.

The possibility of rapid and severe reversal of quality of life is envisaged because as people get more stressed, they are likely to become more conservative, less tolerant and more religious. Although such responses may strengthen cohesion within groups, that cohesion may increase conflict between groups. Such tendency for social instability may make the ethical theory that increasing the size of the population compensates for lower quality of life much too simplistic (for discussions of that theory, see Ryberg and Tännsjö 2004).

Many years ago, zoologist Desmond Morris (1967, 177) asserted that we already know that if our populations go on increasing at their present terrifying rate, uncontrollable aggressiveness will become dramatically increased. This has been proved conclusively with laboratory experiments. Gross overcrowding will produce social stresses and tensions that will shatter our community organizations long before it starves us to death.

The results of laboratory experiments may not translate well to human society, but if ‘gross overcrowding’ progresses at a ‘terrifying rate’, then De Waal’s ‘behavioural countermeasures’ of ‘born adaptation artists’ may be overwhelmed. This type of social collapse may be happening now with the failure of the ‘Arab spring’ (except for Tunisia), the collapse of Syria and the rise of the ‘death cult’ Islamic State. It is frequently depicted in film and literature, such as Shane Meadows’ 2007 movie This Is England and J.G. Ballard’s 2006 novel Kingdom Come. Such works focus
on social dysfunction that appears to be caused by poor quality of life. Prudence dictates that we allow ourselves either plenty of ‘Lebensraum’, or several generations to adapt to crowding. The former appears far less risky and much more pleasant, but it requires each nation to restrict the size of its population so that (a) its domestic natural capital seems abundant to each citizen and (b) their wants for external natural capital do not compete too much with the wants of others.

5.4 Implications of the scarcity multiplier

The scarcity multiplier is an example of the government failure of underproviding public goods that is predicted by the triple dysfunction hypothesis (see §2.5 and Figure 2.1, p. 126). The multiplier underprovides public goods by making benefits (in the form of supplies of private goods) produce costs (in the form of scarcities of public goods). This means that the bigger the benefits, the bigger the consequential costs, an effect that can make conventional cost–benefit analyses (CBAs) of development projects totally misleading. To avoid this, CBAs must be preceded by competent political decisions on whether to limit the IWS feedbacks that drive the multiplier — those of population, positional competition, adaptation and sales promotion. In order to achieve that political competence, our hypothesis suggests three democratic dysfunctions must be corrected so that the people then provide good directorship for their democracy. This threefold correction appears to require one or more new institutions that reduce ambiguity of delegation by giving citizens the incentive and assistance to deliberatively participate in government, especially in developing strategic public policy.

In doing this, citizens may see a need to choose limits for the size of their population. To see such a need and also to choose limits, they will need information about the long-term costs and benefits of both high and low ratios of population to natural capital. Unfortunately, research on this is neglected and public debate about it is rare, superficial and distorted by xenophobic, racial, religious and cultural attitudes on immigration and birth
control. As observed in §4.2.1, scholars have noticed that an initially widespread public debate on overpopulation and human carrying capacity was quickly followed by aversion to further participation in such discourse. Forty-four years after Paul Ehrlich’s *The Population Bomb*, the Rio+20 summit failed to make an explicit link between population growth and sustainable development (Sulston 2012). This ‘Hardinian taboo’ (see §4.21) could be, at least partly, a learned response to the inability of democracies to rationally deliberate desirable sizes for their populations, and it blocks attempts to develop effective public policy for sustainability. The quality of life that can be sustained in a particular region or nation largely depends not only on the quantity and quality of its natural capital, but on limits to both the size of the population using this capital and the wants of each individual. The public choices that must be made to select and attain a desirable carrying capacity therefore require a high level of deliberative public participation and cannot be done by most (perhaps all) democracies without new institutions to facilitate it.

To use Tasmania as an example, controlling the operation of the scarcity multiplier in this state demands a sustained public deliberation on the long-term size of population that Tasmanians wish to have. This deliberation must be facilitated by social science data on the costs and benefits of low and high ratios of natural capital to population, and these evaluations must be expressed as sustainable quality of life, not as monetary yields or losses. If such public deliberation resulted in citizens consistently expressing—say every year, for a decade—a desire for a particular firm limit to the size of their population, the discourse could then concentrate more on selecting their method for achieving or maintaining that limit. The mechanics of the scarcity multiplier suggests that if Tasmanians chose to stop their numbers growing further, they would have two options for implementing that choice: (a) restricting the size of the Tasmanian economy (so that the state becomes less attractive for migrants to enter and for residents to stay in); or (b) that the state secedes from Australia so that it can directly control
the size of its population through Tasmanian laws and policies that restrict its immigration and perhaps manipulate its birth rate. The choice of option would require sustained public deliberation among Tasmanians, and this may indicate to them that restricting the size of their economy will not only produce economic hardship but may even fail to achieve its objective by encouraging the birth rate to climb in a reversal of demographic transition. Public discussion of secession may indicate to both Tasmanians and other Australians that the growth issue would be tackled most effectively at the national level — and that this in turn would be assisted by greater international efforts to restrict growth of the global population. As with state and national public policy, at the global level there is also an urgent requirement for new institutions that facilitate the sustained public deliberation required by such issues. For more on the Tasmanian case, see the Appendix.

The scarcity multiplier is a complex of interacting positive feedbacks that are classified in §5.2.1 as IWS — feedbacks that inflate the wants of citizens for public and private goods by supplying their wants for private goods. This concept of ‘inflating want with supply’ is proposed as a crucial replacement for the conventional but myopic assumption that wants are satisfied by supplying them. IWS accepts that this is the initial response, but it then looks further by asking: ‘so what is the effect of that satisfaction?’ As we have seen, the answer is often that the satisfaction increases aggregate want and thereby produces future dissatisfaction, which turns the conventional idea on its head. The initial satisfaction of want does this by driving population IWS and affluenza IWS (positional competition IWS plus adaptation IWS, both being stimulated by sales promotion IWS) so that more unsatisfied want is produced. The current assumption that ‘supply satisfies’ must therefore be replaced by its approximate antithesis, that ‘supply is likely to dissatisfy’. This replacement becomes necessary when we take into account the medium to long term as well as the short term. IWS thereby describes an important effect of economic growth in developed economies over the last half-century: Despite doubling and tripling of real
incomes (the supply of individual wants) in many developed economies, the percentage of citizens in those countries that report themselves as ‘very happy’ has hardly altered and in the US and the UK has declined (Jackson 2009, 40). So despite increase in supply, or because of it (according to scarcity multiplication), individual wants have not been satisfied and in some cases have been inflated. A survey of 61 countries has shown that above an average annual income of around US$15,000, life-satisfaction hardly responds to increases in income (Jackson 2009, 40–42). As noted in §2.2.3.2 (‘Distraction by adaptation’), the level of income that citizens regard as being what they require closely follows real increases in their income.

To apply the concept of IWS at a global scale, we might consider the hypothetical (but likely) case of future industrial utilization of the natural capital of Antarctica. In June 2012 the former leader of the Australian Greens Bob Brown and veteran Australian environmentalist Geoff Mosley proposed that Antarctica, the world’s largest remaining wilderness, be more firmly excluded from commercial use by declaring it a World Heritage Area. Currently, the 1991 Protocol on Environmental Protection (the Madrid Protocol) to the Antarctic Treaty commits the Parties to the Treaty to comprehensive protection of the Antarctic environment, including dependent and associated ecosystems. This protection encompasses a ban on mining and makes Brown and Mosley’s proposal seem superfluous. However, perhaps their thinking might be understood as embodying a recognition of IWS that has led them to apply its logic in two ways. The first application is that the IWS systems of the scarcity multiplier indicate that global economic growth will persist despite rising scarcities of natural capital. Of course, this applies IWS to authoritarian regimes as well as to democracies, but that seems appropriate as around half of the world’s nation-states are democratic to some degree and even authoritarian ones may exhibit IWS behaviour. This implies that, sooner or later, these scarcities will become so acute that the Madrid Protocol will be abandoned, as either individual nations or the global community as a whole resort in desperation to utilizing the natural
capital of Antarctica. Something like this is already happening in the Arctic as the sea ice retreats, but this is more predictable as that region is not covered by a protective protocol. The prospect of the Madrid Protocol eventually collapsing starts to make it sensible for conservationists to try to develop a more impressive international taboo on Antarctic exploitation by having the region declared World Heritage. The prudence of this move is bolstered by applying IWS in a second way. This is that IWS indicates that supplementing the global supply of private goods by using the natural capital of Antarctica will not satisfy global human wants for these. To the contrary, it is likely to further inflate them. Supply from Antarctica is therefore very likely to put off the day when humanity recognizes (not just with words but also in behaviour) the physical limits of the planet, so that when it finally recognizes them and then tries to curb its growth of population and consumption, the accumulated damage to planetary natural capital, the task of curbing growth and the risks of conflict will all be greater.

As scenarios such as this suggest, IWS may be the most important of many issues that require much more thought than is usually given to public policy by citizens and their political agents. This type of requirement for more thought has been called ‘thinking beyond stage one’ by public policy scholar Thomas Sowell (2004, 4). He describes it as responding to the promise of the benefits of a new public policy by asking: ‘And then what will happen?’ On further thought, consequences of those benefits may be predicted, which is a ‘stage two’ realization and should be responded to with: ‘And what will happen after that?’ More thought may reveal the likelihood of stage three consequences, to which the rejoinder is: ‘And then what will happen?’ And so on, if that appears useful. Sowell (2004, 5) claims that thinking beyond stage one is especially important when considering policies whose consequences unfold over a period of years. If the initial consequences are good, and the bad consequences come later — espe-
cially if later is after the next election — then it is always tempting for politicians to adopt such policies.

As the scarcity multiplier is a complex of several IWS feedbacks, each of which extends beyond the view of ‘stage one’ thinking, it is well hidden from citizens. Major effects of economic growth are thus ignored, with citizens and their political agents assuming that the production of more income and employment will satisfy their wants for those things. The first of the three claims made at the beginning of this chapter is that economic growth is now failing to deliver on that promise, so that rather than satisfy wants for more employment and income, it exacerbates them. The falsity of that promise is seen here through the scarcity multiplier analysis, but it was much earlier seen by Hirsch as being guaranteed by competition for positional goods alone — without invoking the other drives of the scarcity multiplier (adaptation, sales promotion and population growth). The New York Times reported him on January 12, 1978 as observing that, because of widespread and growing demands for positional goods, material growth can ‘no longer deliver what has long been promised for it — to make everyone middle-class’ (Hirsch 1978).

The second claim listed at the outset of this chapter is that it is no accident that the deceit of this false promise rules democracies, for triple dysfunction limits their capabilities to analyse such problems to their root causes and then to apply the systemic remedies that such analysis may discover. Ambiguous delegation means that neither citizens nor their political agents are clearly charged with those responsibilities of diagnosis and prescription. Excessive competition between political agents further diverts them from providing public goods, creating opportunities for wealthy private enterprise to use its money and influence to manipulate public opinion and politicians. And the final element of triple dysfunction, excessive compromise, means that the ignorance of most citizens overrules the wisdom of the few, so that public policy suffers and, in particular, the falsity of the promise of economic growth goes unnoticed.
The scarcity multiplier analysis may be categorized as ecological economics for two interrelated reasons. The basic reason is that in its step 1, the analysis utilizes the recognition of ecological economics that decisions on macro-allocating public natural capital from the ecological system to the economic subsystem must be made by government (as noted above in the preliminary section of §5.3). These macro-allocation decisions cannot be left to the market because that system allocates excludable goods according to prices determined by their supply and demand. As public natural capital is non-excludable, it has no price unless government chooses to impose one and can enforce it. Therefore only a non-market institution such as government can make rational choices on the macro-allocation of public goods to the economic subsystem, including the macro-allocation of public natural capital. A further motive for having government make macro-allocation decisions on this natural capital is that they will confront government with the country’s per capita levels of this capital, which should remind politicians (and citizens) to consider — and plan to achieve — the size of population that is most desirable in view of its limited stocks of this capital. This decision is another that cannot be made by markets and must be made by government, for the ratio of population to natural capital is a public good.

The other reason for categorizing the scarcity multiplier analysis as ecological economics is that it demonstrates that discipline’s dependence on political science. This is implied in the previous paragraph by the notion that choices to macro-allocate public natural capital to the economy (which are ecological economic choices) must be made by governments. To do this competently, governments must be entirely free of private goods bias and any other type of failure that might prevent them from providing optimal levels of public goods. As the triple dysfunction hypothesis indicates that democratic governments fail to some degree, ecological economics requires that new institutions be designed to reform them, which is a task for political scientists and is tackled below, in Part 2.
As noted in §5.2.1, IWS is a pervasive reflex. It is a ubiquitous biological response that is in no way confined to humans. IWS is therefore deeply embedded in our psyche, which implies that democratic governments must be very competent indeed if they are to stop driving the scarcity multiplier. The necessary self-restraint is counterintuitive. As Richard Dawkins (2001) has observed: ‘Sustainability does not come naturally.’ We must therefore expect that until democratic government is reformed, the scarcity multiplier is the norm, relentlessly producing endless forms of boom-and-bust. A recent example of such failure of government at both state and national levels is provided by journalist Paul Cleary’s (2011) book Too Much Luck: The Mining Boom and Australia’s Future. Boom-and-busts vary in scale from that of a mine producing a town that becomes a ghost a few years or decades or centuries after the lucky strike, to a region, a country, or the whole planet overexploiting its natural capital, both renewable and nonrenewable, a cycle that may take years, decades, centuries or millennia. As the scarcity multiplier’s population IWS indicates, much of the boom in these cycles is growth in population, and as we have seen, just the population IWS on its own may drive the multiplier to extremes of scarcity. If a boom and bust is local, the bust may be painful but not lethal as the bloated local population can move to more supportive parts of the country. But if the scope of the boom and bust is national, multinational or global, then the enlarged population may not be able to escape. The severity of such a bust is due not just to depletion of natural capital, but also to the number of people trying to live on what is left.

As triple dysfunction tends to make democratic governments of countries with advanced economies boost their scarcity multiplier, they cannot be trusted with decisions on economic growth. Those decisions have a private goods bias that undervalues public goods and thereby fuels damaging scarcity multipliers. When politicians declare they are ‘getting the balance right’ between economic growth and conservation in their decisions on development projects, they are wrong as they are not ‘thinking beyond stage one’ to anticipate inflation of want
by supply. Their political survival does not allow them to do it, because their constituents are stuck in stage one. This might be visualized in Figure 5.1, with public discourse and thinking generally encompassing steps 1 and 2, then failing to see further to steps 3, 4, back to 1 and around again and again, indefinitely. Until democratic governments are reformed to eliminate this myopia, their endorsements of further growth should be taken as good arguments against it. As noted at the beginning of this chapter, this is its third claim: Democratic governments of advanced economies must eschew economic growth until they are reformed to be able to make competent decisions on it.

5.5 Conclusions for Part I

In Chapter 2, the basic structure of electorally representative liberal democracies was predicted to cause, via ‘triple dysfunction’, a degree of failure in their governance. To test this hypothesis, two cases of failed democratic policy were examined to see whether triple dysfunction could account for them. It appeared to do this, so Chapters 3, 4 and 5 investigated other cases of government failure in liberal democracies and found that they also seemed to be explained by triple dysfunction. All of these cases indicated that triple dysfunction inhibits the development and implementation of strategic, or fundamental, long-term policy, such as: the selection of desirable limits for populations; controls on positional competition, adaptation and inequality; sharing employment; and developing the intra-national and inter-national cooperation needed to limit global warming. It was predicted in §2.5 and also at the conclusion of §4.1 that triple dysfunction would make government fail mainly in strategic policy, and although the discussions of strategic issues in Chapters 2, 3, 4 and 5 support that prediction they may be regarded as falling short of confirming it.

Nevertheless, as these examples of government failure appear to show triple dysfunction being realised, they encourage it to be seen not merely as a tentative ‘hypothesis’ of failure, but as a somewhat firmer ‘theory’ of failure that might be reliable enough
to guide the design of corrective measures. Triple dysfunction ‘theory’ is therefore applied in Part 2 to design a new institution to help liberal democratic governments improve their provisions of public goods. The running of that institution in the real world of politics might therefore provide an experimental test of triple dysfunction theory. In addition to the forward and backward mappings of Chapters 2, 3, 4 and 5, the possibility of such experimental testing strengthens the idea that this theory is ‘falsifiable’, which (as philosopher of science Karl Popper observed) is necessary if it is to be regarded as a scientific theory. Some discussion of this aspect is given in the Afterword, but for now we proceed to Part 2, employing this theory to shape a prescription for curing or minimizing government failure.