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Making sustainability laws work while treating our addiction to growth: an application of scarcity multiplier theory

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ABSTRACT

Planning laws promoting sustainable development have not stopped the depletion of natural capital and global life-support systems, fuelling arguments for degrowth and transitions to steady-state economies. To address this weakness, we employ scarcity multiplier theory (SMT) in a case study of Tasmania, Australia, where planning laws have the statutory objective of promoting sustainable development. By drawing on two seminal contributions of John Kenneth Galbraith, his *squirrel wheel* and *problem of social balance*, SMT explains how we fail to limit growth to match natural capital capacity. This application of SMT shows that new industrial developments in regions with circumstances similar to those of Tasmania produce two forms of unsustainability: 'unsustainability of satisfactions of wants' and 'unsustainability of per capita abundance of natural capital', the former producing an addiction to economic growth. We thereby argue that applications for approval of new industrial developments under Tasmania's planning laws should be rejected *unless* these expansions are countered by a commensurate contraction elsewhere in that economy. In addition, we employ SMT to identify deficiencies in those planning laws that stop them producing sustainable development, demonstrating a need to reform government (and planning) to prevent such failure.

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1. Introduction

Sustainability, as an end, and sustainable development, as a means (Goodland and Daly 1996) have been required by policy and legislation in many jurisdictions across the world since the 1990s (e.g., Howes 2000; Ross 2008). A central purpose of such legislation is that proposals for new developments must be assessed to make sure they are sustainable (Goodland 1995), according to the definitions and guidelines set within its planning tools and processes. Twenty to thirty years on, despite these laws, there has been a global deterioration in environmental, economic, social, and political conditions (Moran et al. 2008; Raworth 2017; Weidmann et al. 2020), including inability to make fair contributions to reducing global greenhouse gas emissions (Höhne et al. 2020) and to prevent biodiversity extinctions (Bradshaw et al. 2021). This failure has sparked a growing interest globally in degrowth (Demaria et al. 2013; Hickel 2020; Kallis et al. 2018), sufficiency-oriented strategies (Haberl et al. 2020; Heindl and Kanschik 2016; O'Neill et al. 2018) and transitions to steady-state economies (Daly 1974; O'Neill 2012).

However, the focus on degrowth and the steady-state economy has largely avoided a critical examination of the ability of existing planning legislation to

achieve these objectives (for an exception, see Ruiz-Alejos and Prats 2021). These laws were specifically developed with the stated goal of promoting ecologically sustainable development, by improving 'total quality of life' whilst maintaining 'the ecological processes on which life depends' (Howes 2000, 78). Whilst the intent of this legislation was to reconcile human 'needs' (as opposed to wants) within the 'limits' of the planet, both principles, of recognising needs and limits, have been lost in the application of those laws (Gale 2022). In other words, a major problem with such legislation is that it ignores growth in consumption while merely attempting to make its supply sustainable. As Hobson (2003, 148–149) notes, despite the United Nations *Agenda 21* of the early 1990s requiring the practice of *sustainable consumption*, this 'has been publicly and politically marginalised in high-income countries such as Australia' and 'has failed to become a political or public issue.' More fundamentally, there is a lack of consideration of how to reform our political processes to make them capable of addressing challenges such as that of reducing consumption and achieving sustainability (Smith 2016). In democracies, this would require citizens to ask and deliberate questions such as 'what [do] people need for a good life[?]' (Creutzig et al. 2021, 8).

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To address these needs, this article offers a strategy for improving the quality of government in liberal democracies that have laws requiring industrial developments to be ecologically sustainable. The strategy is to use those laws to block new development projects and thereby apply pressure on the government to reform its laws and institutional structure (e.g., Reybrouck 2016; Smith 2016) to enable it to govern more wisely. Such blocks may be possible if scarcity multiplier theory (SMT: Smith 2009; Smith 2016) is utilised in legal appeals against development applications, to have them rejected as unsustainable. SMT may be able to do this, as it explains why growth in production and of the aggregate size of the economy continues, without necessarily resulting in an increase in welfare. This theory is a concise description of development motivations and processes in liberal democracies that is comprehensive enough to realistically describe their results, as it accounts for political behaviour, the behaviour of producers and consumers (and therefore both supply and want), the characteristics of natural capital and the effects of the interactions of these factors over both the short and long-term. In doing this, SMT shows how increased production can fuel an unending sequence of feedback loops that drive greater production while increasing human wants, simultaneously undermining government ability to meet public needs and depleting natural resources.

SMT is based on John Kenneth Galbraith's *Dependence Effect* (or 'squirrel wheel') and his *problem of social balance* (Galbraith 1958/1999). It inspects these dynamics in the geographic context of a particular region, as this allows their impacts to be assessed on the size of the region's population, on its natural capital and on its political decisions on industrial development. By 'industrial development' we mean any commercial, government or other activity that produces more income and employment. SMT shows that in regions with specific conditions (one of which is a relatively developed economy, or in the words of Galbraith (1958/1999), an 'affluent society'), the combined impact of Galbraith's 'Effect' and 'problem' is the 'scarcity multiplier', a positive feedback system in which new industrial developments fail to sustain their politically intended satisfactions of citizens' wants and also fail to sustain the ratio of natural capital to population. More recently, Costanza (2023) has termed this condition as an 'addiction' to growth (also see Costanza et al. 2017).

As an example of making sustainability laws work while treating our addiction to growth, we apply SMT to Tasmania. This application shows that new industrial developments cannot be the 'sustainable development' required by that State's planning laws and therefore SMT may be invoked to reject applications for developments. We also use SMT to

demonstrate four deficiencies of those laws: (1) They only address the sustainability of supply, while neglecting the potential of want to destroy that sustainability; (2) they do not fully state what must be sustained; (3) they ignore the unsustainability of several types of developments; and (4) they do not require processes for public deliberation that are necessary for good public planning. We thereby argue that SMT may be applied in jurisdictions with circumstances similar to those of Tasmania to: (1) apply their own laws to reject environmentally damaging developments; (2) broaden those laws to make all development sustainable; and (3) reform their institutions of government so that all development is subject to rational democratic choice. We hope the application outlined here will help us find ways of addressing citizens' wants for more employment and income without forcing a relentless escalation of the scarcity of their natural capital. Thus, we seek to advance discussions on degrowth, the steady-state economy and sufficiency-oriented strategies in a novel way. Especially, by showing how those schemes utterly depend on government processes, we highlight the need to engage with and reform those processes, even in advanced western democracies where they have long and revered histories (Mahbubani 2018).

2. Galbraith's 'squirrel wheel' and 'problem of social balance'

In 1958, the eminent North American economist John Kenneth Galbraith (1908-2006) published *The Affluent Society* (Galbraith 1958/1999). In his opening pages, Galbraith set out to challenge what he famously referred to as the 'conventional wisdom'. One of his challenges was to characterise the modern economy as a *giant squirrel wheel*.

Consumer wants can have bizarre, frivolous or even immoral origins, and an admirable case can still be made for a society that seeks to satisfy them. But the case cannot stand if it is the process of satisfying the wants that creates the wants. For then the individual who urges the importance of production to satisfy these wants is precisely in the position of the onlooker who applauds the efforts of the squirrel to keep abreast of the wheel that is propelled by his own efforts (Galbraith 1958/1999, 125).

Galbraith noted that this idea was of such importance

that it had perhaps best be put with some formality. As a society becomes increasingly affluent, wants are increasingly created by the process by which they are satisfied. This may operate passively. Increases in consumption, the counterpart of increases in production, act by suggestion or emulation to create wants. Expectation rises with attainment. Or producers may proceed actively to create wants through advertising and salesmanship. Wants thus come to depend on output. In technical terms, it can no longer

be assumed that welfare is greater at an all-round higher level of production than at a lower one. It may be the same. The higher level of production has, merely, a higher level of want creation necessitating a higher level of want satisfaction. There will be frequent occasion to refer to the way wants depend on the process by which they are satisfied. It will be convenient to call it the Dependence Effect (Galbraith 1958/1999, 129).

On the basis of research that was done well after *The Affluent Society* was published, Dutt (2008, 548) concluded that ‘Galbraith’s analysis [i.e., his Dependence Effect or squirrel wheel] seems, fifty years later, to be right on the mark even though at the time, the argument could not be fully developed and firm empirical evidence was not yet available.’ Dutt came to this conclusion after following three lines of enquiry: (1) on the ability of firms to influence consumption through marketing and other related efforts; (2) on increases in consumption and income (driven by economic growth) that are not necessarily linked with an increase in well-being (also see Wilkinson and Pickett 2010); and (3) on the likelihood of increases in sales promotion having ‘adverse long-run macroeconomic effects by increasing consumer indebtedness and inequality’ (also see Douglas 2016). The net outcome of the squirrel wheel is a continued growth in production and of the aggregate size of the economy, without necessarily resulting in an increase in welfare (e.g., Kubiszewski et al. 2013), the end for which production and consumption is meant to serve as means (Daly 1974).

Galbraith (1958/1999, 101) observed that modern economies were trapped in this squirrel wheel, and it is ‘only by an act of will we can hope to escape’. Since the time of his writing, that act of will has not been summoned and the assumption of an overriding need for continuous growth in gross domestic production (measured as GDP) remains core macroeconomic policy in the affluent societies of developed nations (Jackson 2011; Kallis et al. 2018; Raworth 2017; Schmelzer 2015). As Galbraith’s formal term signifies, his Dependence Effect is an addiction: In this case, of society to economic growth.

The other major issue raised by Galbraith and utilized by SMT is his ‘problem of social balance’. He considered this ‘one of the enduring contributions of his book’ (Berry 2015, 139) and described it as ‘an implacable tendency to provide an opulent supply of some things [private goods] and a niggardly yield of others [public goods]’ (Galbraith 1958/1999, 189, 186). More than half a century later, the ‘atmosphere of private opulence and public squalor’ that Galbraith (1958/1999, 191) observed in the United States is as striking as it was then. For example, the country has by far the greatest accumulation of private wealth in the world, yet its public infrastructure suffers from a

chronic deficit in investment and has been rated as D + (Poor) in consecutive recent assessments (Kelton 2020).

As Galbraith’s *niggardly yield* is produced by government, while his *opulent supply* is produced by the market economy, his *problem of social balance* is what is now called *government failure*. This is the failure of governments to perform the only function that we need them for (Olson 1965; Taylor 1987), which is to provide important public goods that would not be provided unless there was a government capable of doing it and willing to act. Democracies produce government failure because politicians who advocate policies favouring private goods (which they may present as public goods) over public goods tend to be more successful in elections (Leeson 2006; Mickelthwait and Wooldridge 2014; Olson 1965; Smith 2016; Tullock 1993). This is a strong finding by social scientists over the last half-century, such as in the research program of public choice economists. One of the founders of this program, James Buchanan (2003, 8) observed that in ‘a very real sense, public choice became a set of theories of government failures’. The current ‘deliberative turn’ in political science also recognises government failure as it proceeds from two postulates: democratic governments need improving; and more effective deliberation of public policy by citizens would do much to achieve this (e.g., Fishkin and Laslett 2003; Gastil and Levine 2005; Smith 2016). In the description of SMT in the following section, government failure is referred to as the *private goods bias*, to identify its relevant effect.

3. Scarcity multiplier theory (SMT)

As noted above, SMT is a concise description of development motivations and processes in liberal democracies that is comprehensive enough to realistically predict that growth in the aggregate size of the economy continues, without necessarily resulting in an increase in welfare. It describes dynamics that are collectively called a *scarcity multiplier* (Smith 2009) and which will occur in any region, which may be multinational, national or subnational and has the following circumstances:

1. It has a *resident population* with an *elected democratic government*.
2. It is *open to migration* from and to other regions.
3. It has a *relatively well-developed economy* that provides at least a basic level of affluence (i.e., Galbraith’s ‘affluent society’), which has produced demographic transition, so the size of the population is controlled largely by the influence on migration of its economic and other lifestyle opportunities.

4. Some *other regions have lower indicators of quality of life* such as less per capita income (or affluence), greater inequality, less political freedom, more damaged environments, and relatively strong crowding effects (in that their per capita availability of natural capital is lower).
5. *Sales promotion* is permitted for a wide range of private goods and services.
6. Virtually all the region's *limited stock of natural capital* (both public and private) is 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 or economic demands. Some of the political ones may take the form of environmental or cultural heritage activism.

It should be noted that even if these six circumstances are not all fully present in a particular region, it may still be subject to a scarcity multiplier. Each region of concern must therefore be individually assessed for its susceptibility to this dynamic and the factors driving it (e.g., more or less immigration, income). In particular, if a multinational (e.g., European Union) or subnational region (e.g., an Australian State or urban centre) is chosen, its openness to migration is an important consideration (e.g., for Sydney, see Searle 2020).

In reading the following description of the scarcity multiplier, its operation and impacts may be envisaged as occurring in Tasmania, as it clearly has the six circumstances that produce the scarcity multiplier. This description refers to Figure 1 as an aid to visualising the relevant dynamics and gives a few Tasmanian examples of these. Sections 4, 5, 6 and 7 progressively focus more intensively on Tasmania to discuss the implications of SMT there, by way of an illustrative example.

To read Figure 1 we start with its central box, labelled 'Political decisions on development proposals'. This refers to decisions by government on applications to introduce or allow state or private industrial developments and also its decisions to seek, promote and even subsidise private enterprise projects. As noted in that box and described above in Section 2, democratic governments usually have a *private goods bias*, a tendency to neglect their mission of providing public goods in order to provide the private goods produced by industrial enterprises instead.

As indicated in Figure 1 by the arrows pointing from 'Political decisions ...' up to 'More Development', the private goods bias means that applications to democratic governments for official approval of industrial developments are usually successful, often despite widely recognised substantial costs for public goods such as the natural environment (e.g., Spash 2015). Although the main (and driving) purpose of

these developments is to produce profit or income for their operators, which is a private good, they may also produce public goods, such as taxes levied on the sales, incomes, and payrolls of those operators (as such taxes create the fiscal space to afford public goods such as public health services, public infrastructure, education, immigration and quarantine controls and defence: Kelton 2020). As those public goods are by-products of each development and are usually less significant than the intended commercial returns from the private goods they produce, our analysis is simplified here by not considering them further.

However, there is another public good yielded by industrial developments that must be taken into account, as it is a powerful motive for politicians to seek and approve them. This is the public good of satisfying at least some of citizens' wants for more employment and income. Politicians frequently cite this as a major reason for them to support industrial developments (e.g., Mishan 1967; Smith 2014). The phrase 'It's the economy, stupid' has been used to demand such action so often that it has become a cliché (e.g., Krugman 2010).

Thus, to satisfy at least some of citizens' wants for more employment and income, governments usually approve applications for new industrial projects. As intended, the construction and subsequent operation of these increase employment and income; and that tends to support a larger population (Figure 1: arrow P2 to 'Growth of Population'). Such growth in population takes place largely through migration. In our example of Tasmania, more people are attracted by the extra income and employment to live in the State and fewer are compelled to leave in order to earn a living. This is routinely recognised by the Tasmanian Government. Its 2019–2020 Budget Paper states:

As a consequence of the strength of the Tasmanian economy, labour market conditions have been favourable over recent times, resulting in positive net interstate migration into Tasmania due to higher retention of Tasmanian workers and a greater number of people moving to Tasmania from other Australian states and territories. This has resulted in strong population growth that has further supported demand and economic activity in the State (Department of Treasury and Finance (Tasmania) 2020, 35).

As indicated by the two P3 arrows from 'Growth of Population' to 'Yet More Wants' in Figure 1, this increase in population makes aggregate wants rise in Tasmania, for both private and public goods. This growth of wants creates greater pressure to use the State's limited stock of 'Natural Capital' (upper left box in Figure 1) for both private (marketed at point of sale) and public (free access) goods. The growth of wants for more private and public goods is interpreted by government (with its private goods bias)

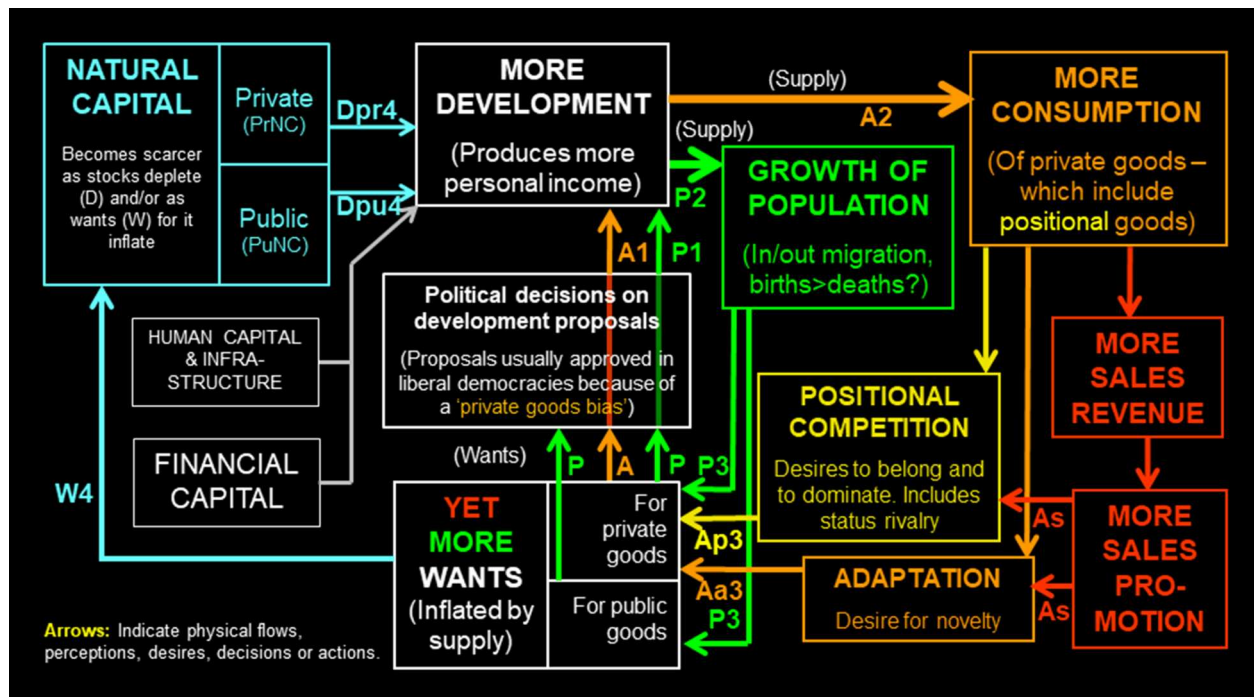


Figure 1. The scarcity multiplier – a system of four mutually reinforcing positive feedbacks, operating within a geographical/political region. System steps: 1. Political decisions; 2. Population growth (P2) and affluenza (A2); 3. Inflation of want (P3 – from population growth, and A3 – from increases 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).

to mean a more urgent need for more private than more public goods. This relative lack of political influence by wants for public goods is shown in Figure 1 by the arrow from ‘Yet More Wants For public goods’ halting when it hits ‘Political decisions ...’, whereas the arrows from ‘Yet More Wants For private goods’ pass through ‘Political decisions ...’ (shown as P1) to produce ‘More Development’.

While ‘More Development’ produces ‘Growth of Population’ to produce ‘More Development’ then more Growth of Population and so on, ‘More Development’ also helps to drive Dpu4 (the conversion of public ‘Natural Capital’ into private goods – D meaning depletion, or escalation of scarcity) and Dpr4 (depletion of the per capita availability of private ‘Natural Capital’ – such as freehold land – which increases its price as there is increasing demand relative to supply). While doing that, ‘More Development’ encourages in-migration (Figure 1 arrow P2 to ‘Growth of Population’) that further increases wants for both private and public goods (Figure 1: arrows P3 to ‘Yet More Wants’), which increases the perceived scarcity of the limited stock of natural capital (Figure 1: arrow W4 to ‘Natural Capital’).

This repetitive process is a *positive feedback*, a cycle in which the initial drive (shown in Figure 1 as ‘Political decisions ...’) for more development is restored (at least partially) in each cycle. How far this feedback cycles is open to question (e.g., Harvey 2017), but immigration from other regions with fewer opportunities to exploit natural capital may continue to

drive it as long as that difference between Tasmania and other regions exists. Net migration may therefore overcrowd this State to the extent of overcrowding elsewhere, which would make its natural capital very scarce on a per capita basis. As this population feedback repetitively heightens that scarcity, it is called the *scarcity multiplier*.

As the negative feedback from overcrowding in Tasmania depends on the positive feedback (the scarcity multiplier), it initially has little effect in opposing the positive feedback. But in the longer term, overcrowding effects (e.g., costs of living) could likely slow population growth and thereby oppose the positive feedback (as is happening in Sydney: Searle 2020). Another negative feedback that is also subservient to the population feedback is that the increasing scarcity of Natural Capital (top left hand box) may increase public demand for political decisions to curb development in order to protect remnants of natural capital that are public goods (PuNC). Examples of such concessions made to protect or restore PuNC are common, but the prevailing effect is one of decreasing Natural Capital (e.g., Cresswell and Murphy 2017; Tasmanian Planning Commission 2009).

As can be seen in Figure 1, the scarcity multiplier also has three other positive feedbacks. As they all work in the same direction as the population feedback, they strengthen its escalation of the scarcity of natural capital. These feedbacks form a subsystem identified in Figure 1 by arrows marked A, A1, A2, As, Ap3 and Aa3, where A denotes ‘affluenza’ (Hamilton and

Denniss 2005, 3), or addiction to consumption. Affluenza is the current term for Galbraith's squirrel wheel or Dependence Effect. It might be considered less descriptive than Dependence Effect as it ignores the feedback implied by that term. In Figure 1 this feedback starts after More Development produces more personal income, as this allows More Consumption, which produces two psychological responses. The first is that citizens want to consume even more private goods in order to maintain or elevate their social status relative to others. This is status rivalry or keeping up with the Joneses, one of several problems that economists classify as *positional competition* (Hirsch 1977). This is a problem because as some people raise their status by consuming more, others respond by wanting to do the same (Wilkinson and Pickett 2010), even to the extent that they increase their household debt to fuel this process.

Consumption growth therefore increases the political pressure for More Development to provide more income for More Consumption. When that happens, the process is repeated and we have an indefinite positive feedback in positional competition. As Galbraith (1958/1999) was writing two decades before that term had been coined, he used the word *emulation*, after Veblen's (1899/2007) earlier seminal work. It is notable that Veblen (1899/2007, 26) had tacitly observed that 'pecuniary emulation' is a positive feedback, in which, as 'the struggle is substantially a race for reputability on the basis of an invidious comparison, *no approach to a definitive attainment is possible*' [emphasis added].

The other psychological response to More Consumption is *adaptation*. This is that people soon adapt to a raised level of consumption, no matter how high it is, by thinking that it would now be more interesting, or convenient, or in other ways pleasant, to consume even more. This has also been described as the 'the relentless pursuit of novelty' (Jackson 2011, 160). As with positional competition, adaptation produces more pressure on politicians to seek and approve More Development to produce the extra employment and income required for More Consumption, which creates more adaptation so that we have another positive feedback of indefinite persistence. One potential countervailing force that is conventionally assumed here is the law of diminishing marginal utility (Douglas 2016). This indicates that adaptation will quickly fade, as it postulates that the utility or benefit gained from the consumption of each successive unit of a good or service declines until a point of satiation is reached. But as Berry (2015, 87–88) observes, Galbraith had argued that economists:

accept the reality of the declining urgency for individual goods, but not for goods in general. There may

indeed be a hierarchy of need but no limit to what one wants. Once one set of goods is consumed, consumers move seamlessly in pursuit of a never-ending stream of new goods ... Once satiety is reached in one line of consumption, plenty more lines appear ... [therefore] it is not possible to say that income and wealth – the means of increasing consumption – obey the law of diminishing marginal utility. Since individuals have an insatiable demand for goods in the aggregate, then they also crave without limit the means of satisfying that demand [also see Gryshova et al. 2019].

Figure 1 shows Positional Competition and Adaptation creating, via Ap3 and Aa3, Yet More Wants for private goods – and not for public goods (Layard 2005). They continue to do this indefinitely, as Yet More Wants for private goods provoke More Development and thus More Consumption, which produces more Positional Competition and Adaptation and so on. Note that in this process, Positional Competition and Adaptation increase the public pressure for the political approval of new development projects ('Political decisions on development proposals' in Figure 1) but do not affect the private goods bias of those 'Political decisions ...' (which, as noted above at the end of Section 2 is postulated to be a structural bias that leaves democratic governments vulnerable to excessive pressures to favour private over public goods). As such public pressure and the private goods bias push in the same direction, they strengthen the political thrust for More Development ('Political decisions ...' in Figure 1).

A key enabler that accelerates both the Positional Competition and Adaptation feedbacks is the Sales Promotion feedback. This is driven by industrial enterprises promoting their sales with advertising (Redmond 2001). The resultant increased sales produce More Sales Revenue, which allows increased expenditure on More Sales Promotion, which excites Positional Competition and Adaptation (As), leading to Yet More Wants for private goods (Ap3, Aa3), leading to more political decisions for More Development resulting in more Sales Revenue, More Sales Promotion and so on. This system cycles indefinitely and as it progresses, it converts the limited stocks of free *public* natural capital (such as rivers, wilderness and even the climate) into marketed private goods (irrigation, hydroelectric dams, tourist accommodation and travel, guided walks and so on) and increases the prices of the limited stocks of *private* natural capital (such as water rights and freehold land).

In Section 2 we quoted Galbraith observing that his Dependence Effect (our affluenza) had both a passive component and an active one. The passive part comprises the two feedbacks driven by the automatic psychological responses of Positional Competition

and Adaptation. The active part is the Sales Promotion feedback, as it is driven by the deliberate efforts of producers and suppliers (Dutt 2008). With both the Growth of Population and the affluenza feedbacks operating simultaneously, the force of the scarcity multiplier may be formidable because their growths of want are multiplied together rather than added. While growth of population increases the number of people, affluenza increases the wants of each one. If the size of the population remains stable, rising per capita consumption on its own is quite effective in reducing the per capita abundance of natural capital, and usually does so despite technological improvements that increase the efficiency of its utilization, often because of the rebound effect (Herring and Sorrell 2009; Toth and Szigeti 2016; Weidmann et al. 2020).

4. The impact of the scarcity multiplier on sustainability

SMT agrees with orthodox economics that each expansion of industrial activity will satisfy some of the wants of citizens for more income and more employment. But, unlike the orthodoxy, SMT looks further ahead in time ('thinking beyond stage one': Sowell 2009), to see that in a region with circumstances conducive to scarcity multiplication, those satisfactions will be ephemeral, lasting only a few months or years. In the case of want for more income, positional competition and adaptation will soon restore it, especially as both responses are stimulated by sales promotion (Dutt 2008; Redmond 2001). So direct attempts to satisfy want for more income by supplying it, will eventually fail. In the case of want for more employment, the initial satisfactions of wants for *both* employment and income will encourage more people to migrate into the region and less out of it, increasing the population. The larger population will tend to have a larger aggregate want for more employment, so the initial satisfaction of that want is not sustained. This unsustainability is exacerbated by the larger population having unsatisfied wants for more income, leading it to want more opportunities for the employment that produces it.

SMT thereby demonstrates that in any region with the circumstances that induce scarcity multiplication, expansions of income-producing activity will eventually fail to sustain their satisfactions of citizens' wants for more income and employment and may even increase those wants, *unless* the expansions are countered by an equal, concomitant contraction in such activity elsewhere in that economy. On their own therefore, according to SMT, expansions of industrial activity in regions with scarcity multiplying circumstances are *unsustainable developments*. They fail to sustain the satisfaction of strong wants.

SMT also demonstrates another type of unsustainability: New industrial developments in a region with the circumstances that produce scarcity multiplication do not sustain, and instead diminish, the region's per capita abundance of natural capital. They do this in two ways. First, new industrial developments increase the human population (P2 in Figure 1) making the limited stock of natural capital scarcer in a per capita sense (W4 in Figure 1). This scarcity comprises crowding effects. One of these is higher *prices* of natural capital such as land and water. Another is impairment of the quality of the human *experience* of natural capital such as wildlife and fish (when stocks are diminished or exterminated by increased human activity), natural scenery and wilderness (made less natural and wild by the presence and physical impact of more people and their artefacts).

The second way in which new industrial developments make natural capital scarcer per capita is that they tend to destroy that capital (e.g., Spash 2015; Boon and Prahalad 2017), or damage it by externality effects such as pollution, fire, and wear and tear. This destruction or damage may happen for example, to air, water, soil, mineral deposits, wildlife habitat, fish stocks, natural scenery, and wilderness, leaving their quantity or quality diminished and thus scarcer in an absolute sense than they would have been, if the new industrial activities had not occurred. As there is now less natural capital (in quantity and quality) there is also less per capita (e.g., Moran et al. 2008), producing crowding effects similar to those noted above, together with its absolute reduction (e.g., Toth and Szigeti 2016), which further damages the human experience of natural capital (e.g., Soga and Gaston 2016).

Both types of per capita scarcities of natural capital (crowding and depletion) will be greater than might be anticipated from just one expansion of industrial activity, because of the conventional multiplier effect. This is that each expansion of expenditure, including those to develop existing businesses and to start new ones, increases income streams and purchases of inputs, both of which expand other businesses and initiate more new ones, which in turn have similar enlarging effects on industrial activity, and so on. Thus, even if a new industrial activity does not directly make natural capital scarcer, it will do so indirectly by boosting the financial capacity of the economy to exploit and deplete it (Harvey 2014; Moran et al. 2008; Wackernagel and Rees 1997). On top of this conventional multiplier of course, we have the scarcity multiplier, in which the failure to satisfy wants for more income and employment drives political decisions to seek and approve more new industrial developments, which then do the same again, repeating those decisions and their execution indefinitely. Each of those cycles produces an incremental

reduction in the per capita abundance of natural capital. Over time, the cumulative result of such reductions is an ongoing depletion of natural capital (e.g., with biodiversity: Cresswell and Murphy 2017; Tasmanian Planning Commission 2009), with no satisfaction of wants for more income and employment to show for it. This is evident in Tasmania, as in the 200 years since the British invaded the island, new industrial developments have been continuously added to its economy, yet its citizens' unsatisfied wants for more income and more employment are now no less, and arguably greater, than they ever were (e.g., Smith 2014). The Tasmanian Government agrees, as it declares it

has placed a high priority on the development of infrastructure to support the provision of services to the community, support jobs and drive economic growth. As a result, the size of the Government's agency infrastructure investment program over the 2019–20 Budget and Forward Estimates period is at record levels (Department of Treasury and Finance (Tasmania) 2020, 20).

The 'unsustainability of satisfactions of wants' is not only a frustration or cost for citizens, but it also inflicts the collateral damage of addicting them and their polity to economic growth. We refer to addiction here in the sense of 'a compulsive engagement in rewarding stimuli despite adverse consequences'. It is a difficult syndrome for democratic governments to address (e.g., Costanza et al. 2017; Hobson 2003). The 'unsustainability of satisfactions of wants' addicts citizens to growth because their lack of satisfaction with each increment of growth drives them to demand more growth and when they get it, the evaporation of their satisfaction with that drives them to do it again, and again, indefinitely. This addiction converts what may be considered an insignificant reduction of the ratio of natural capital to population by one industrial development, to a virtually unstoppable series of such reductions that sooner or later culminate in dire scarcities of natural capital. The addiction also strengthens itself, as the growth of industrial activity provides more funds for sales promotion, which increasingly commercializes people's lives, focusing them more and more on trying to get satisfaction by consuming (e.g., Sandel 2012). As well as describing addiction, SMT also describes capture of the state by the market, as businesses continually try to convert public goods that the state is responsible for, into private goods that businesses can sell. This capture is enabled by government failure, as indicated in Figure 1 by 'Political decisions on development proposals'.

The 'unsustainability of satisfactions of wants' and 'the unsustainability of per capita abundance of natural capital' described by SMT mean that, in any region with the circumstances that permit a scarcity

multiplier, new industrial enterprises and expansions of existing ones would not be 'sustainable developments', *unless* their contributions to the growth of the economy of that region are countered by reductions in pre-existing industrial activity elsewhere in that economy. This compensatory economic contraction allows for the rational re-allocation of finite resources towards those activities deemed to be improving 'total quality of life' whilst maintaining, and now restoring, 'the ecological processes on which life depends' (Howes 2000, 78). Possibilities for such planned economic contraction have been discussed in the degrowth literature (e.g., Hickel 2020; Mastini, Kallis, and Hickel 2021) and what we propose here, in the following sections, is a planning avenue for such trade-offs.

5. Applying scarcity multiplier theory to make sustainability laws work

As we have seen, Tasmania has circumstances that induce scarcity multiplication (Section 3) and this produces two types of unsustainability (Section 4). We now inspect the State's sustainability laws to see if they prevent both types and are thereby effective.

In the early 1990s, the Tasmanian Government introduced new legislation to create a Resource Management and Planning System (RMPS) that would 'achieve sustainable outcomes from the use and development of the State's natural and physical resources' (Resource Planning and Development Commission 2003, 6). Several statutes form the framework of the RMPS, of which the most important is the *Land Use Planning and Approvals Act 1993* (LUPAA) (Castles and Stratford 2014). Under LUPAA, local councils are designated as *planning authorities* for preparing, amending and administering planning schemes; assessing and approving land use and development; and enforcing planning scheme provisions and permit conditions (Resource Planning and Development Commission 2003). A key agency in the RMPS is the Tasmanian Planning Commission (TPC), an independent statutory authority that has several functions such as, assisting local councils to administer LUPAA, advising on new amendments to planning rules and directives, and reporting on State-wide planning policies.

Relevant clauses of LUPAA are inspected here to show how its sustainability requirements would be violated by any new industrial development in Tasmania, unless the income and employment producing potential of that development is countered by an equal and concomitant reduction in such production elsewhere in the State's economy. We start with Clause 1 of Part 1 of Schedule 1 of LUPAA, which states:

The objectives of the resource management and planning system of Tasmania are –

- (a) to promote the sustainable development of natural and physical resources and the maintenance of ecological processes and genetic diversity; and
- (b) to provide for the fair, orderly and sustainable use and development of air, land and water; and
- (c) to encourage public involvement in resource management and planning; and
- (d) to facilitate economic development in accordance with the objectives set out in paragraphs (a), (b) and (c); and
- (e) to promote the sharing of responsibility for resource management and planning between the different spheres of Government, the community and industry in the State.

To establish what is meant in Clause 1(a) and (b) by 'sustainable development', Clause 2 of Part 1 of Schedule 1 of LUPAA defines it as 'managing the use, development and protection of natural and physical resources in a way or at a rate, which enables people and communities to provide for their social, economic and cultural well-being'. As SMT shows that each new industrial development in Tasmania will not *satisfy citizens' desires for more income and more employment* but inflame them (by fuelling the addiction described above in Section 4), these developments prevent rather than enable the provision of 'social, economic, and cultural well-being' in this State. They therefore fail to meet this statutory requirement for the sustainability of new industrial developments based on natural and physical capital.

Furthermore, as SMT demonstrates that new industrial developments in Tasmania *diminish the per capita abundance of natural capital* (by both their own impacts – as described in Section 4 – and by fuelling the addiction) they will also prevent Clause 2(a) of Part 1 of Schedule 1 from being met. Such diminution is the opposite of Clause 2's '(a) sustaining the potential of natural and physical resources to meet the reasonably foreseeable needs of future generations'. This failure 'to meet ... needs' has been apparent for many decades in Tasmania, as evidenced by incessant public protests about the misuse of natural and physical resources, such as anti-hydroelectric public marches and blockades, arrests of anti-logging protestors, climate rallies, protests against fish farms and Extinction Rebellion demonstrations (e.g., Beresford 2015; Gee 2001; Thompson 1984).

Reduction of the per capita abundance of natural capital by the scarcity multiplier also means that new industrial developments and the expansion of existing ones prevent Clause 2(c) of Part 1 of Schedule 1 from being met, as it specifies '(c) avoiding, remedying or mitigating any adverse effects of activities on the environment'. Reducing this per capita abundance produces the 'adverse effects' of crowding and the loss of experience noted above in Section 4 (from

both increase in population and reduction of the quantity and quality of natural capital). Therefore, in these three ways (Part 1: Clause 2, 2(a) and 2(c)), according to the Tasmanian planning system's definition of sustainable development, new industrial developments that are subject to that planning system should be rejected on the grounds that these proposals contravene its sustainability objectives.

Part 2 of Schedule 1 of LUPAA states that the objectives of its 'planning process' are to support the objectives set out in Part 1 of Schedule 1. In Part 2, both Clause (a) 'to require sound strategic planning ...' and Clause (c) 'to ... provide for explicit consideration of social and economic effects' call for environmental, social and economic dynamics such as those described by SMT to be carefully considered by those who apply the Tasmanian planning system to approve or reject development applications. As such approval or rejection is often politically controversial, public involvement is crucial for good democratic decision-making and for this, the public should understand SMT in broad outline, because it corrects conventional wisdom by showing that supplying wants may have more costs than benefits (Smith 2009). Indeed, such public education may be interpreted as being required by sub-clause (c) of Clause 1 of Part 1 of Schedule 1 ('(c) to encourage public involvement in resource management and planning'). We suggest that this 'public involvement' be facilitated with legal appeals against developments that utilise SMT to argue that those developments would violate the objectives of the State's planning laws. This approach is discussed in Section 7 below.

Further, as Clause (i) of Part 2 of Schedule 1 requires 'a planning framework which fully considers land capability', it also means that SMT considerations should be included in this framework. This is because the land capability that SMT takes into account includes the limits of its area and quality (within Tasmania) along with the limits of the entire stock of natural capital in the State. As SMT identifies addiction to growth, it shows that these limits are being ignored by growth and that the current planning framework does not 'fully' consider land capability.

The main body of LUPAA provides for its Schedule 1 provisions to be implemented in several Sections, such as 5, 12B(4)(b) and 15(2)(b). Section 5 states, under 'Objectives to be furthered', that 'It is the obligation of any person on whom a function is imposed or a power conferred under this Act to ... further the objectives set out in Schedule 1'; that is, to promote sustainable development. Sections 12B(4)(b) and 15(2)(b) requires Tasmanian Planning Policies (TPPs) and State Planning Provisions (SPPs) respectively, to do the same. To do this, both the agents (such as the local councils, Tasmanian Planning Commission, and the Minister for Planning) and the instruments

of LUPAA (such as TPPs and SPPs) should consider the unsustainability implications identified by SMT.

For some development applications the Tasmanian RMPS requires an environmental impact statement (EIS) before a development can be approved and this must demonstrate the sustainability required under LUPAA (EPA 2019). The part of the planning system that stipulates this is the *Environmental Management and Pollution Control Act 1994* (EMPCA). Under this statute, an 'EIS should provide: Information for individuals and groups to gain an understanding of... the *need for the proposal*' (EPA 2019, 1, emphasis added). A legally arguable interpretation of this is that an EIS must explain how the proposal would satisfy at least some of citizens' wants for more income and more employment (e.g., Smith 2014). As we noted in Sections 2 and 3 of this article, politicians (not to mention developers) routinely seek and support such proposals with that claim. As SMT shows that no new industrial development can do this and will, to the contrary, tend to violate that objective *under current circumstances* in Tasmania, it means that all EISs for such developments in this State should recommend that applications for them are rejected unless their income producing potentials are to be countered by equal, concomitant reductions of income and employment elsewhere in the State's economy.

As we have just implied, new industrial developments may also be made to meet the sustainability requirements of the Tasmanian RMPS by removing the circumstances that drive the scarcity multiplier in this State. However, as can be seen from our list of those at the beginning of Section 3, it is inconceivable that Tasmania's current form of democratic government would be able to do that, as it requires stopping migration into the State (which would require secession from the Commonwealth), eliminating most sales promotion, and largely transitioning to a steady-state economy (Demaria et al. 2013). However, such moves may become possible if the State's system of government was restructured to remove its private goods bias and also to give it a democratic capacity to competently manage such complex strategic issues (Smith 2016).

6. Gaps in planning laws that stop them producing sustainability

As an instrument for achieving its objective of promoting the sustainable development of natural and physical resources, the Tasmanian RMPS not only fails because its clauses are currently not interpreted with the aid of SMT, as outlined in the preceding Section 5, but also because it has four major gaps, the most fundamental of which is the absence of public participation procedures that are capable of

supporting good planning. These gaps and their implications are outlined here and the concluding Section 7 investigates the possibility of utilising SMT to produce the public participation needed for good planning.

6.1. The system focuses on supply and ignores want

Tasmania's RMPS cannot produce sustainability because it is restricted to trying to ensure that the supply of goods and services is sustainable, while it ignores want, leaving that free to grow to levels that would destroy sustainability, as they are supplied (Goodland and Daly 1996; Moran et al. 2008). It may be anticipated that the sustainability objective of the planning system would prevent such unsustainable levels of supply, but in view of the private goods bias of government and the public perception that economic growth is of paramount importance (e.g., Smith 2014), three other scenarios are more likely. These are that the planning system's rules will be interpreted to allow more supply of private goods at unsustainable levels (which is the current situation), or they will be rewritten to redefine sustainability, or they will be rewritten to remove references to sustainability.

The Tasmanian planning system's focus on supply is its focus on approving or rejecting resource developments. Its neglect of want is its neglect of both population size and per capita consumption (affluenza) (Moran et al. 2008), together with its neglect of the private goods bias of government, which dampens the political registration of want for public goods. As SMT considers want as well as supply (of both private and public goods) it helps to identify this gap in Tasmania's RMPS. By considering political decisions on want and supply, SMT also draws attention to the private goods bias as a crippling block to sustainability. As consumption is increasingly skewed towards private goods rather than public goods, there is a need to remove this bias by limiting sales promotion and making political participation more attractive and effective for citizens in order to balance their focus on private goods with more consideration of public goods. As this 'social balance' (Galbraith 1958/1999) is essential for competent planning, the RMPS should be amended to specify that a participation process be established to facilitate the public deliberation necessary to determine and continually reassess that balance.

6.2. The system does not state the per capita level of natural capital that must be sustained

The Tasmanian RMPS does not attempt to specify the levels of per capita supply of natural and physical resources that are desirable. These levels may not be quantifiable, but it is suggested that they may be

determined by a public deliberation process and its polling or survey results, as discussed below in Section 6.4. Such desirability objectives should mean that the stock of natural capital provides all citizens with satisfying opportunities for diverse, quality experiences (sometimes referred to as *quality of life* or *liveability*, e.g., de Haan et al. 2014) and adequate resources for industry. Its significance is suggested by SMT with W4 in Figure 1 and is discussed above in Section 4, where the impacts of restricted per capita levels of natural capital are classified as depletion impacts and crowding impacts. The public discussion, determination, monitoring and adjustment of what is socially accepted as ‘desirable’ per capita levels of natural capital requires a deliberative democratic political process of a more capable type than is currently in place (Smith 2016).

6.3. The system ignores the unsustainability of developments that do not directly impact natural and physical capital as well as some that heavily impact it.

As LUPAA and the other elements of Tasmania’s RMPS define ‘sustainable development’ as describing only the utilisation or protection of ‘natural and physical resources’ (Clause 2, Part 1, Schedule 1 of LUPAA), they ignore the potential of new industrial developments that would not directly utilise these resources, to destroy sustainability. In addition, LUPAA specifically excludes mining, forestry and marine farming from its objective ‘to promote sustainable development’ (see LUPAA s11 (3)), as these industries are covered by their own regulations outside RMPS. But as we have argued with SMT, new industrial developments in this State (whether based on those resources or not) will continue to destroy the sustainability of both the *satisfaction* of wants for more income and employment and the *per capita abundance* of natural capital.

6.4. The system does not provide the deliberative political participation required for rational planning.

Any one of the preceding three deficiencies in the design of Tasmania’s RMPS is sufficient on its own to prevent this system from producing sustainable development for the State. Their correction, as noted in several places above, requires institutional reform that facilitates the political participation required for rational planning (Smith 2016). In 2001, the Tasmanian government attempted to address this with a program of public consultation on strategic public policy called *Tasmania Together*. This was more participatory than any other program of similar intent in Australia, and more comprehensive and better politically

supported than the processes on which it was based in Alberta, Washington, Oregon, and Minnesota. However, as its cooptative design and management could not generate popular legitimacy, successive Tasmanian governments have quietly abandoned it (Beresford 2015; Crowley 2009), resulting in no resolution of the three gaps we have identified above.

There is a large literature on the failure of participatory models and we suggest the problem arises from inadequate diagnoses of government failure. An exception, however, is a diagnosis at a fundamental institutional level produced by Smith (2016), which indicates a deliberative prescription that should be more effective than current alternatives. This is the People’s Forum (PF) and its promise comes from a comparison with eight other designs of broadly similar purpose (Smith 2016). The PF would address a very large number of issues simultaneously, which should help citizens understand their interconnections (as in SMT, Figure 1). This capability should mean that as citizens engage with the PF they would, with some issues, be doing community scenario planning (CSP), which Costanza (2023) recommends as a remedy for addiction to growth. The PF may take many years to resolve issues, but that would allow time for public opinion and the culture to develop the necessary sophistication for competent and stable social choices.

7. Conclusion: steps to making sustainability laws work and treating our addiction to growth

In this paper we address the fundamental planning issue of our time: how to restrict growth to match the limited natural capital capacity of the planet. By employing SMT, we have sought to make planners (and the public) aware of how sustainability limits are exceeded and of planning’s existing and potential role in this, using Tasmania as a case study. The unsustainability implications we have identified could provide powerful arguments to force governments with laws mandating sustainability, such as that of Tasmania, to publicly acknowledge and take account of the scarcity multiplier in public policies and legislation. This would open up the possibility of actually achieving sustainability. Such opportunities arise in Tasmania when approval is sought under its RMPS for new developments. If such approval is withheld by government, or appealed against by citizens, on the ground that, according to SMT, those developments would not be sustainable, it would draw society’s attention to SMT and its implications. Such action would inform citizens of the presence and nature of the scarcity multiplier and the vulnerability of their region to it. We deem this to be important given the acknowledgement that such public

education is essential for developing sensible long-term public policy in fundamental areas such as population size, economic growth, jobs, incomes, taxation, urban development, and the protection of natural and cultural assets (e.g., Burnheim 2016; Coghill and Wright 2012; Gardels and Berggruen 2019; Gastil and Levine 2005; Ginsborg 2008; Fishkin and Laslett 2003; Smith 2009; Smith 2016; Yankelovich 1991).

If citizens use SMT to appeal against a development application, they should do so knowing that it contradicts not only the conventional wisdom of politicians and developers, but that of some environmentalists as well. The job-creating, income-producing industrial developments that they advocate are precisely those that drive the scarcity multiplier. If environmentalists use SMT to argue against a development application, for example to show that the proposed development is unsustainable, then they cannot also use economic arguments such as ‘this development would be uneconomic and unviable as there is no market for its product’ or ‘its financial costs would outweigh its returns’ or ‘its financial returns would go to investors outside the State’. Such conventional arguments try to discredit the proposal as a hindrance to economic growth at home. But according to SMT that hindrance would be a benefit, as it would produce a more sustainable domestic outcome.

We propose three purposes for SMT-based appeals against development applications. The first and most immediate purpose is to block a specific development to prevent it damaging environmental, cultural, or other public assets. A current case illustrating this in Tasmania is the proposed Robbins Island wind farm in the far northwest of the state and its transmission line seeking to export surplus energy to mainland consumers (UPC 2021; Mountain and Percy 2020). This proposal required an EIS demonstrating ‘the need for the proposal’ as part of its development application to the local planning authority, the Circular Head Council. As noted above in Section 5, SMT demonstrates that the politically conventional concept of the ‘need for the proposal’ is not valid in Tasmania because the proposed project’s satisfaction of wants for more income and employment would not be sustained. In addition, the project would further erode the State’s per capita abundance of natural capital and elicit other developments that would do the same, indefinitely. On both counts, this development would not be the sustainable development required by the Tasmanian RMPS and should therefore be blocked on these grounds.

A second and longer-term purpose for an appellant to block developments by invoking SMT may be to apply pressure on the government to take seriously the objectives of Tasmania’s planning laws (of promoting sustainable development) (e.g., Ruiz-Alejos and Prats 2021). Until the State government

specifically factors SMT considerations into its policies and legislation, it is not taking its Schedule 1 objectives seriously and the apparent spirit of the words about promoting sustainable development is mere posturing. Of course, the conventional wisdom is so dogmatic on the absolute imperative for growth that the government may prefer to respond to appellants who invoke SMT by redefining or deleting the objective of its planning laws. This may provoke an intense public debate on whether society wants to sustain anything and if it does, then what. As Galbraith (1958/1999) had hoped, such debate might see the public summoning the ‘act of will’ to halt the squirrel wheel.

This second purpose of getting the primary objective of planning laws taken seriously also means that they should be broadened to give them the capability to prevent *all* new developments from feeding the scarcity multiplier, not just those that directly impact natural and physical resources. Those new laws would either *remove the circumstances* that produce this multiplier (mostly growth of population, promotion of sales and the personal difficulties for individuals to choose public goods compared to their ease of choosing private goods) or *block the industrial developments* that feed it, such as by requiring closures of existing industries to prevent growth of the economy from new industries. Both these ways of broadening planning laws would control wants for private goods to keep them within limits that allow supplies of both private and public goods to be sustained at desirable levels (e.g., with demand-side solutions: Creutzig et al. 2021). This would help address Galbraith’s (1958/1999) ‘problem of social balance’.

The third purpose for SMT-based appeals under Tasmania’s RMPS against developments is to apply pressure on the State government to reform its institutional structure so that it becomes much more capable of developing and executing rational long-term policy. In doing this, such reform should help citizens consider and choose the purpose of the human project in Tasmania. Choosing this purpose may seem unrealistically ambitious, perhaps because institutional reform with that potential has, to our knowledge, never been tried. However, as indicated at the end of the previous section, collective deliberation with such capability appears possible and if successfully established in Tasmania may prompt similar institutional reform for the nation as a whole and then in other nations around the world.

Assistance may be given for executing this third purpose in Tasmania if sceptics ask appellants: ‘Why do you apply the scarcity multiplier objection to this particular project when we have many others happening all over the State, some of which do not directly affect natural and physical resources, or otherwise do not need planning approval, such as expanding an

existing business?’ Appellants may reply that legal objections are much more likely than non-legal objections to arouse public discussion, as they may produce highly publicised legal hearings and carefully reasoned judgments (such as in McNeill 2021). Such publicity should help voters and politicians recognise the scarcity multiplier and perhaps even the private goods bias that permits it. This may motivate government to reform its institutional structure to eliminate its private goods bias and its addiction to growth (Costanza et al. 2017) and, more generally, to become much more competent at identifying, valuing, and providing public goods. That reform would be a response to the call by D’Alisa and Kallis (2020, 1) for a ‘radical change of the political and economic system’ so that ‘economies may prosper without growth.’

The public debates that these three purposes for appellants should arouse may, in our example of Tasmania, make citizens and the State government see more clearly than LUPAA Schedule 1, Part 1, Clause 2 tells them, what it is that ‘sustainable development’ should sustain. Those debates should do this by answering questions such as: Does sustainable development require the social choice of:

- a particular average level of per capita income and wealth?
- a limit to inequality in personal wealth and incomes?
- a set of minimum levels of particular public goods?
- a certain size of population (the desirable per capita abundance of natural capital, or in other words, the desirable human carrying capacity – DHCC – for Tasmania)?
- a steady-state economy for the State and if so, is it to be bigger, smaller, or its current size?
- a ‘certain *rate of growth*’ (emphasis added) – which is how ‘sustainable tourism’ has been defined by the Tasmanian Government (2020, 91)?

Answering such strategic questions via a continuing, open process of public deliberation may produce rational democratic planning (e.g., Smith 2016). Such strengthening of the democratic process through public involvement is necessary to effectively address the feedbacks that incite consumption and constitute the ‘structural imperative for growth’ (Weidmann et al. 2020, 1), which renders us, as Costanza (2023) puts it, ‘addicted to growth’. Until democracies reform their institutions to give them the capability to effectively address these strategic issues, sustainability will remain an elusive goal.

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References

- Beresford, Q. 2015. *The Rise and Fall of Gunns Ltd.* Sydney: New South.
- Berry, M. 2015. *The Affluent Society Revisited.* Oxford: Oxford University Press.
- Boon, P. I., and V. Prahalad. 2017. “Ecologists, Economics and Politics: Problems and Contradictions in Applying Neoliberal Ideology to Nature Conservation in Australia.” *Pacific Conservation Biology* 23 (2): 115–132. <https://doi.org/10.1071/PC16035>
- Bradshaw, C. J., P. R. Ehrlich, A. Beattie, G. Ceballos, E. Crist, J. Diamond, R. Dirzo, et al. 2021. “Underestimating the Challenges of Avoiding a Ghastly Future.” *Frontiers in Conservation Science* 1: 9. <https://doi.org/10.3389/fcsc.2020.615419>
- Buchanan, J. M. 2003. Public Choice: The Origins and Development of a Research Program. Accessed May 27 2009. <http://www.gmu.edu/centers/publicchoice/pdf%20links/booklet.pdf>.
- Burnheim, J. 2016. *The Demarchy Manifesto: For Better Public Policy – How to Enlighten, Articulate and Give Effect to Public Opinion.* Exeter UK: Imprint Academic.
- Castles, A., and E. Stratford. 2014. “Planning Reform in Australia’s Island-State.” *Australian Planner* 51 (2): 170–179. <https://doi.org/10.1080/07293682.2014.890942>
- Coghill, K., and P. Wright. 2012. *Hear Our Voice: The Democracy Australians Want.* Albert Park: The Australian Collaboration.
- Costanza, R. 2023. *Addicted to Growth: Societal Therapy for a Sustainable Wellbeing Future.* Oxfordshire, UK: Routledge.
- Costanza, R., P. W. Atkins, M. Bolton, S. Cork, N. J. Grigg, T. Kasser, and I. Kubiszewski. 2017. “Overcoming Societal Addictions: What Can We Learn from Individual Therapies?” *Ecological Economics* 131: 543–550. <https://doi.org/10.1016/j.ecolecon.2016.09.023>
- Cresswell, I. D., and H. T. Murphy. 2017. Australia State of the Environment 2016: Biodiversity, Independent Report to the Australian Government Minister for the Environment and Energy, Australian Government Department of the Environment and Energy, Canberra.
- Creutzig, F., L. Niamir, X. Bai, J. Cullen, J. Díaz-José, M. Figueroa, A. Grübler, et al. 2021. “Demand-Side Solutions to Climate Change Mitigation Consistent with High Levels of Wellbeing.” *Nature Climate Change* 12: 36–46.
- Crowley, K. 2009. “Can Deliberative Democracy be Practiced? A Subnational Policy Pathway.” *Politics and Policy* 37 (5): 995–1021. <https://doi.org/10.1111/j.1747-1346.2009.00208.x>

- D'Alisa, G., and G. Kallis. 2020. "Degrowth and the State." *Ecological Economics* 169: 106486. <https://doi.org/10.1016/j.ecolecon.2019.106486>
- Daly, H. E. 1974. "The Economics of the Steady-State." *The American Economic Review* 64 (2): 15–21.
- de Haan, F. J., B. C. Ferguson, R. C. Adamowicz, P. Johnstone, R. R. Brown, and T. H. Wong. 2014. "The Needs of Society: A New Understanding of Transitions, Sustainability and Liveability." *Technological Forecasting and Social Change* 85: 121–132. <https://doi.org/10.1016/j.techfore.2013.09.005>
- Demaria, F., F. Schneider, F. Sekulova, and J. Martinez-Alier. 2013. "What is Degrowth? from an Activist Slogan to a Social Movement." *Environmental Values* 22 (2): 191–215. <https://doi.org/10.3197/096327113X13581561725194>
- Department of Treasury and Finance (Tasmania). 2020. The Budget: Budget Paper No 1. Accessed April 15 2021. <https://www.treasury.tas.gov.au/Documents/2019-20-Budget-Paper-No-1.pdf>
- Douglas, A. 2016. "Contrived Desires, Affluence, and Welfare: JK Galbraith's Pigovian Redistribution Argument Reconsidered." *The European Journal of the History of Economic Thought* 23 (4): 611–640. <https://doi.org/10.1080/09672567.2015.1018291>
- Dutt, A. K. 2008. "The Dependence Effect, Consumption and Happiness: Galbraith Revisited." *Review of Political Economy* 20 (4): 527–550. <https://doi.org/10.1080/09538250802308919>
- EPA. 2019. *Guidelines for Preparing an Environmental Impact Statement*. Tasmania: Environmental Protection Authority.
- Fishkin, J. S., and P. Laslett. 2003. *Debating Deliberative Democracy*. Malden, MA: Blackwell.
- Galbraith, J. K. 1958/1999. *The Affluent Society*. London: Penguin.
- Gale, R. 2022. "The War Against Sustainable Development Theory: Public Interest as the Ethical Order for the 2030 Sustainable Development Goals." *Geographical Research* 60: 347–357.
- Gardels, N., and N. Berggruen. 2019. *Renovating Democracy: Governing in the Age of Globalization and Digital Capitalism*. Oakland, CA: University of California Press.
- Gastil, J., and P. Levine. Eds. 2005. *The Deliberative Democracy Handbook*. San Francisco: Jossey-Bass.
- Gee, H. 2001. *For the Forests: A History of the Tasmanian Forest Campaigns*. Hobart: The Wilderness Society.
- Ginsborg, 2008. *Democracy: Crisis and Renewal*. London: Profile Books.
- Goodland, R. 1995. "The Concept of Environmental Sustainability." *Annual Review of Ecology and Systematics* 26 (1): 1–24. <https://doi.org/10.1146/annurev.es.26.110195.000245>
- Goodland, R., and H. Daly. 1996. "Environmental Sustainability: Universal and Non-Negotiable." *Ecological Applications* 6 (4): 1002–1017. <https://doi.org/10.2307/2269583>
- Gryshova, I., T. Shabatura, S. Girdzijauskas, D. Streimikiene, R. Ciegis, and I. Griesiene. 2019. "The Paradox of Value and Economic Bubbles: New Insights for Sustainable Economic Development." *Sustainability* 11 (24): 6888. <https://doi.org/10.3390/su11246888>
- Haberl, H., D. Wiedenhofer, D. Virág, G. Kalt, B. Plank, P. Brockway, T. Fishman, et al. 2020. "A Systematic Review of the Evidence on Decoupling of GDP, Resource use and GHG Emissions, Part II: Synthesizing the Insights." *Environmental Research Letters* 15 (6): 065003. <https://doi.org/10.1088/1748-9326/ab842a>
- Hamilton, C., and R. Denniss. 2005. *Affluenza: When Too Much is Never Enough*. Sydney: Allen & Unwin.
- Harvey, D. 2014. *Seventeen Contradictions and the End of Capitalism*. Oxford, USA: Oxford University Press.
- Harvey, D. 2017. *Marx, Capital, and the Madness of Economic Reason*. Oxford, USA: Oxford University Press.
- Heindl, P., and P. Kanschik. 2016. "Ecological Sufficiency, Individual Liberties, and Distributive Justice: Implications for Policy Making." *Ecological Economics* 126: 42–50. <https://doi.org/10.1016/j.ecolecon.2016.03.019>
- Herring, H., and S. Sorrell. Eds. 2009. *Energy Efficiency and Sustainable Consumption: The Rebound Effect*. New York: Palgrave Macmillan.
- Hickel, J. 2020. *Less is More: How Degrowth Will Save the World*. London: Random House.
- Hirsch, F. 1977. *Social Limits to Growth*. London: Routledge & Kegan Paul.
- Hobson, K. 2003. "Consumption, Environmental Sustainability and Human Geography in Australia: A Missing Research Agenda?" *Australian Geographical Studies* 41 (2): 148–155. <https://doi.org/10.1111/1467-8470.00201>
- Höhne, N., M. den Elzen, J. Rogelj, B. Metz, T. Fransen, T. Kuramochi, A. Olhoff, et al. 2020. "Emissions: World has Four Times the Work or One-Third of the Time." *Nature* 579 (7797): 25–28. <https://doi.org/10.1038/d41586-020-00571-x>
- Howes, M. 2000. "A Brief History of Commonwealth Sustainable Development Policy Discourse." *Policy and Society* 19 (1): 65–85. <https://doi.org/10.1080/10349952.2000.11876719>
- Jackson, T. 2011. "Societal Transformations for a Sustainable Economy." *Natural Resources Forum* 35 (3): 155–164.
- Kallis, G., V. Kostakis, S. Lange, B. Muraca, S. Paulson, and M. Schmelzer. 2018. "Research on Degrowth." *Annual Review of Environment and Resources* 43 (1): 291–316. <https://doi.org/10.1146/annurev-environ-102017-025941>
- Kelton, S. 2020. *The Deficit Myth: Modern Monetary Theory and the Birth of the People's Economy*. London: Hachette UK.
- Krugman, P. 2010. The Pundit Delusion. Accessed April 15 2021. <https://www.nytimes.com/2010/07/19/opinion/19krugman.html>
- Kubiszewski, I., R. Costanza, C. Franco, P. Lawn, J. Talberth, T. Jackson, and C. Aylmer. 2013. "Beyond GDP: Measuring and Achieving Global Genuine Progress." *Ecological Economics* 93: 57–68. <https://doi.org/10.1016/j.ecolecon.2013.04.019>
- Layard, R. 2005. *Happiness: Lessons from a New Science*. New York: Penguin.
- Leeson, P. T. 2006. "How Much Benevolence Is Benevolent Enough?" *Public Choice* 126 (3–4): 357–366. <https://doi.org/10.1007/s11127-006-1710-5>
- Mahbubani, K. 2018. *Has the West Lost It? A Provocation*. Cornwall, St Ives: Allen Lane.
- Mastini, R., G. Kallis, and J. Hickel. 2021. "A Green New Deal Without Growth?" *Ecological Economics* 179: 106832. <https://doi.org/10.1016/j.ecolecon.2020.106832>
- McNeill, S. 2021. "As Australia's Climate Policy Disappoints, Hope is Found in Court." *The Age* (September 19), Australia. <https://www.theage.com.au/national/as-australia-s-climate-policy-disappoints-hope-is-found-in-court-20210910-p58qmc.html>

- Mickelthwait, J., and A. Wooldridge. 2014. *The Fourth Revolution: The Global Race to Reinvent the State*. New York: The Penguin Press.
- Mishan, E. J. 1967. *The Costs of Economic Growth*. Harmondsworth: Penguin Books.
- Moran, D. D., M. Wackernagel, J. A. Kitzes, S. H. Goldfinger, and A. Boutaud. 2008. "Measuring Sustainable Development—Nation by Nation." *Ecological Economics* 64 (3): 470–474. <https://doi.org/10.1016/j.ecolecon.2007.08.017>
- Mountain, B. R., and S. D. Percy. 2020. An Analysis of the Economics and Greenhouse Gas Impact of Marinus Link and Battery of the Nation. A Report Prepared for the Bob Brown Foundation. Victoria Energy Policy Centre, Victoria University, Melbourne.
- Olson, M. 1965. *The Logic of Collective Action*. Cambridge, MA: Harvard University Press.
- O'Neill, D. W. 2012. "Measuring Progress in the Degrowth Transition to a Steady State Economy." *Ecological Economics* 84: 221–231. <https://doi.org/10.1016/j.ecolecon.2011.05.020>
- O'Neill, D. W., A. L. Fanning, W. F. Lamb, and J. K. Steinberger. 2018. "A Good Life for all Within Planetary Boundaries." *Nature Sustainability* 1 (2): 88–95. <https://doi.org/10.1038/s41893-018-0021-4>
- Raworth, K. 2017. *Doughnut Economics: Seven Ways to Think Like a 21st-Century Economist*. London, UK: Chelsea Green Publishing.
- Redmond, W. H. 2001. "Exploring Limits to Material Desire: The Influence of Preferences vs. Plans on Consumption Spending." *Journal of Economic Issues* 35 (3): 575–589. <https://doi.org/10.1080/00213624.2001.11506391>
- Resource Planning and Development Commission. 2003. *Guide to the Resource Management and Planning System*. Hobart, Tasmania: Resource Planning and Development Commission.
- Reybrouck, D. V. 2016. *Against Elections: The Case for Democracy*. London: The Bodley Head.
- Ross, A. 2008. "Why Legislate for Sustainable Development? An Examination of Sustainable Development Provisions in UK and Scottish Statutes." *Journal of Environmental Law* 20 (1): 35–68. <https://doi.org/10.1093/jel/eqm019>
- Ruiz-Alejos, C., and V. Prats. 2021. "In Quest of Implementing Degrowth in Local Urban Planning Policies." *Local Environment* 27: 423–439.
- Sandel, M. 2012. *What Money Can't Buy*. New York: Farrar, Straus and Giroux.
- Schmelzer, M. 2015. "The Growth Paradigm: History, Hegemony, and the Contested Making of Economic Growthmanship." *Ecological Economics* 118: 262–271. <https://doi.org/10.1016/j.ecolecon.2015.07.029>
- Searle, G. H. 2020. "Population Growth and Development: An Outcome of Sydney's Metropolitan Governance." *Australian Planner* 56 (2): 65–72. <https://doi.org/10.1080/07293682.2020.1739095>
- Smith, G. 2009. *Democratic Innovations: Designing Institutions for Citizen Participation*. Cambridge, UK: Cambridge University Press.
- Smith, P. E. 2009. "How Economic Growth Becomes a Cost: The Scarcity Multiplier." *Ecological Economics* 68 (3): 710–718. <https://doi.org/10.1016/j.ecolecon.2008.05.024>
- Smith, M. 2014. Voters Clear on What Politicians Must Deliver ... JOBS, JOBS, JOBS. The Sunday Tasmanian (February 15), Hobart.
- Smith, P. E. 2016. *Rescuing Democracy: How Public Deliberation Can Curb Government Failure*. Brooklyn, NY: punctum books.
- Soga, M., and K. J. Gaston. 2016. "Extinction of Experience: The Loss of Human–Nature Interactions." *Frontiers in Ecology and the Environment* 14 (2): 94–101. <https://doi.org/10.1002/fee.1225>
- Sowell, T. 2009. *Applied Economics: Thinking Beyond Stage One*. New York: Basic Books.
- Spash, C. L. 2015. "Bulldozing Biodiversity: The Economics of Offsets and Trading-in Nature." *Biological Conservation* 192: 541–551. <https://doi.org/10.1016/j.biocon.2015.07.037>
- Tasmanian Government. 2020. *Draft TWWHA Tourism Master Plan*. Hobart: Parks and Wildlife Service, Department of PIPWE.
- Tasmanian Planning Commission. 2009. *State of the Environment Report: Tasmania 2009*. Tasmanian Planning Commission, Hobart.
- Taylor, M. 1987. *The Possibility of Cooperation*. Cambridge, UK: Cambridge University Press.
- Thompson, P. 1984. *Bob Brown of the Franklin River*. Sydney: George Allen & Unwin.
- Toth, G., and C. Szigeti. 2016. "The Historical Ecological Footprint: From Over-Population to Over-Consumption." *Ecological Indicators* 60: 283–291. <https://doi.org/10.1016/j.ecolind.2015.06.040>
- Tullock, G. 1993. *Rent Seeking*. Aldershot: Edward Elgar.
- UPC. 2021. Robbins Island and Jim's Plain. Accessed April 15 2021. <https://www.upcrenewables.com/pf/robbins-island/>
- Veblen, T. 1899/2007. *The Theory of the Leisure Class*. New York: Oxford University Press.
- Wackernagel, M., and W. E. Rees. 1997. "Perceptual and Structural Barriers to Investing in Natural Capital: Economics from an Ecological Footprint Perspective." *Ecological Economics* 20 (1): 3–24. [https://doi.org/10.1016/S0921-8009\(96\)00077-8](https://doi.org/10.1016/S0921-8009(96)00077-8)
- Weidmann, T., M. Lenzen, L. T. Keyber, and J. K. Steinberger. 2020. "Scientists' Warning on Affluence." *Nature Communications (Perspective)*, <https://doi.org/10.1038/s41467-020-16941-y>
- Wilkinson, R., and K. Pickett. 2010. *The Spirit Level: Why Equality is Better For Everyone*. Penguin UK.
- Yankelovich, D. 1991. *Coming to Public Judgment: Making Democracy Work in a Complex World*. New York: Syracuse University Press.