Reframing policy around life satisfaction and sustainability: a quantitative framework for wellbeing

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Abstract

The growing maturity of the “science of happiness” raises the prospect of holding government policy accountable to the measured subjective experience of the population. In its pure form, this entails making public resource allocation decisions with an eye to maximizing some moment of the distribution of life satisfaction. Such “budgeting for wellbeing” invites three natural objections, beyond normative quibbles with the subjective objective: (1) non-incremental changes are unlikely in large bureaucracies, so a new accounting system for devising government policies and budgets is too radical, (2) governments do not have an authoritative set of credible cost/benefit coefficients to use in analysis, and (3) long-run objectives, risks, and environmental considerations cannot be feasibly captured in quantitative projections of human subjective wellbeing. Three institutions are needed to address these challenges. I describe (a) an evolving collection of largely-objective indicators for monitoring progress, with life satisfaction providing quantitative structure and overarching visibility to the system, (b) a publicly-curated, evidence-based Database of Happiness Coefficients, and (c) independent public agencies that decide on a growing list of material constraints on the economy. Rather than overwhelmingly novel, these features have antecedents and analogues. Moreover, most civil service decision-making and projection-making apparatuses need not change. Also, there would be no less room nor less need for political debate and platforms. While shifting society to human-centred measures of progress may be radically transformative in the long run, it can be initiated smoothly and non-disruptively.
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1 Introduction and context

The effort to modernize metrics for progress and social-economic success is still often framed as moving “Beyond GDP”. Not only have statistical agencies, policy makers, and societies as a whole largely failed to realize the call to converge on a broader and more appropriate measure of human wellbeing, but ironically the “de-growth” movement, which associates GDP with environmental harm, has served as part of the same chorus as growth-centric development economists. That is, advocating for growth and advocating for de-growth both keep the focus on GDP. Instead, in order to truly move beyond GDP, the time has come and the tools are at hand to measure what matters more directly — both to gauge human wellbeing and to gauge impacts on the environment.

This chapter explores a strong version of this vision, in which an indicator for human wellbeing is meaningful enough that it can be a quantitative guide to decision making in government. Life satisfaction — a transparent, compelling, comprehensive, and sensitive measure — appears to be such an indicator.

Life satisfaction contradicts GDP in a number of ways when interpreted as a measure of progress. For instance, life satisfaction data have shown that a population might not become happier as it becomes richer, that an extra dollar of income going to a wealthy family has a measurably small impact on life satisfaction as compared with when it goes to a low-income family, and that the quality of relationships in a workplace matter more, on average, than does income. Life satisfaction data give us a way to value, quantitatively, the enormous importance of feelings like community trust and a sense of belonging, the effect that a trustworthy government has on overall life quality, and the emotional cost of being unemployed, which is much greater than the financial disruption alone. Life satisfaction data enable us to evaluate the relative benefits of addressing mental health problems as compared with other medical interventions, the lifelong non-monetary value of protecting children from adverse circumstances, the benefit of teaching social and emotional skills to people of all ages, and so much more.

On the other hand, based on what is known about the determinants of life satisfaction, it seems feasible to imagine a society with high life satisfaction but which is running down the resources left for future generations. While a government decision maker can, if equipped with sufficient information, choose policies to nurture high life satisfaction in the near and medium term, there are limits to the scope of decisions that can be treated in such a wellbeing-driven framework. In particular, when future circumstances are outside the scope of past experience, or uncertainty is too high to carry out calculations and optimizations, or consequences from today run too far into the future, a wellbeing framework for policy making is likely to fail to provide sufficient confidence for decision making.

For this reason, I describe a framework with the following complementary features: (1) government decisions can be informed by the best evidence on what makes for good current and future lives, but in which (2) a system of constraints, particularly on material use and waste generation, acts to simplify decision making about the far
future, especially when it is characterized by high uncertainty.

Several institutions, described below, will be necessary to realize this ideal. While the overall scenario of happiness-maximizing policy subject to physical limits represents a transformative change, most of the pieces are already in place, at least in an embryonic state. The sections below describe the following existing institutions:

1. the ongoing monitoring of happiness by government statistical agencies;
2. public databases of “happiness coefficients” which encapsulate knowledge about how much a particular change or difference in life circumstances is likely to improve or reduce an individual’s happiness;
3. government planning models of how events at one point in someone’s life affect their behaviour, productivity, and need for government services later on in life;
4. monitoring, accounting, and enforcement systems for implementing a physical limit to the use of a resource or emission of a waste product.

With some further development of these institutions, they could together could guide governments in making trade-offs between competing needs, while limiting long-run risks that may be said to define many of our sustainability threats.

2 What is “happiness”?

As is common in the economics of happiness literature, a number of possible distinctions (OECD 2013) within the domain of subjective wellbeing (SWB) are glossed over in this paper. In this context, each of the following terms can be taken to mean respondents' quantitative answers to the satisfaction with life (SWL) question: life satisfaction, happiness, SWB, and even wellbeing. An international standard version of the SWL question in English is:

The following question asks how satisfied you feel, on a scale from 0 to 10. Zero means you feel “not at all satisfied” and 10 means you feel “completely satisfied”. Overall, how satisfied are you with life as a whole these days? (OECD 2013)

The key to the life satisfaction approach to policy-making is the availability of a subjective measure of overall wellbeing that captures everything together, in the right proportions. Rather than build up and advocate for an index composed of a collection of one’s favoured goals, life satisfaction data rely on individual respondents to report their overall experience. Then, statistical methods are used to unravel the contributions of more specific, and more objective, intermediate goals.
3 Measuring wellbeing of society

Even with all the evidence on the psychological and economic validity of life satisfaction as a metric (e.g., Diener 1984; Frijters et al. 2019; Sandvik, Diener, and Seidlitz 1993; Saris, Van Wijk, and Scherpenzeel 1998), using life satisfaction as a headline indicator for human progress is of course ultimately an ethical or philosophical choice. Nevertheless, it has strong rationale (e.g., Barrington-Leigh 2016a, 2016b; Barrington-Leigh and Escande 2018; Barrington-Leigh and Wollenberg 2019; Dolan, Layard, and Metcalfe 2011; Global Happiness Council 2018, 2019; Hall, Barrington-Leigh, and Helliwell 2011).

One way to think about SWL is as a headline indicator accompanying a dashboard of other, more objective indicators. Reported in its raw form, SWL communicates the overall intent of an indicator system. Its subjective nature makes clear the primacy given to the lived experience of a target population.

Going a step further, SWL can be used to derive statistical evidence about the relative importance to wellbeing of each objective indicator. Although the process is not completely devoid of judgment, these statistical calculations, typically linear regressions, are open to scrutiny and subject to revision in light of further evidence.

Thus, life satisfaction can provide accountability to the choice of an entire dashboard of indicators, avoiding the need for the designers of the dashboard to decide for everyone which policies, government departments, or domains of life are the most important.

Taking another logical step, a scalar index (i.e., one number summarizing a whole set of indicators) of wellbeing can be constructed from a dashboard of objective measures. The same statistical inference used to determine the importance of each objective indicator can be used to provide weights to aggregate those indicators into a single number. In this way one can avoid assuming arbitrarily that all components of an index are equally important, as do numerous indices like the U.N. Human Development Index. One can furthermore avoid relying on a closed or opaque process of expert consultation or political branding.

By extension, SWL data can also suggest which indicators to drop entirely from an index or dashboard. If an indicator is included in a summary “wellbeing” index, it should be because it is found to be important in statistical models of life satisfaction, i.e., because it is useful in differentiating between those experiencing high quality of life and those experiencing low quality of life, overall. In this way, a hierarchy of indicators, or an overall index, organized around SWL has an intrinsic legitimacy in its conception and design. The value it embodies is clear, and the idea that policy should be targeted and accountable to improve such a measure is compelling. Its quantitative and transparent nature allows others both to reproduce it and to understand it.

In summary, SWL has a natural role both as a headline indicator in its raw measured form, and as an organising concept, based on transparent and falsifiable evidence, for a broader array of (more) objective indicators. Below in Section 5 these objective indicators will represent intermediate policy objectives.

Being able to build an index out of objective measures has other advantages. Run-
ning surveys is always expensive, and life satisfaction data require particularly large sample sizes because life satisfaction varies in response to so many factors. Objective and community-level conditions tend in this sense to be less noisy and therefore less expensive to measure, so they can be measured more frequently or with higher geographic resolution or with more demographic detail than the SWL that is needed to estimate weights.

Figure 1 is a conceptual depiction of how a “synthetic SWL” index (lower yellow box) can be constructed and published using the weights from accumulated knowledge about the determinants of SWL (lower blue oval). The key element is the survey measurement of actual life satisfaction reports (top yellow box), typically as part of a questionnaire which also assesses numerous other life conditions experienced by each respondent. The top right gray box represents these other life conditions, along with any other measurable life circumstances which are not part of the survey but are known conditions applying to an individual or each geographic region.

Many national statistical agencies are already measuring the life satisfaction of their populations. For example, Statistics Canada poses the question to more than 90,000 residents each year as part of comprehensive health and social surveys. At least seven countries include the question in national panel surveys; for instance the German Socio-Economic Panel study has tracked the life satisfaction of the same individuals over time, starting in 1984. In addition, the World Values Survey and the Gallup World Poll include overall life evaluation questions in their international surveys, which are in Gallup’s case annual and cover most of the world’s countries.

4 The Database of Happiness Coefficients

This wealth of data on people’s lives in a wide variety of circumstances within and among countries, and undergoing a diversity of changes and life events, and subject to a variety of public policies and policy changes, has provided a rich base of knowledge about what makes life good.

This academic knowledge is in the form of a large body of published statistical analyses over several decades. Recently, it has begun to be collected into a summary database (Frijters et al. 2019; What Works Centre for Wellbeing 2018) in a form that could help governments evaluate the impacts of prospective policy.

This “Database of Happiness Coefficients” (DoHC) contains the same weights, or “coefficients,” described above in the context of a dashboard of objective indicators. They tell us how happy someone, or some community, is likely to be given an objective description of their current life. In Figure 1, the lower blue oval depicts the DoHC.

Two key steps are needed to ensure that governments have access to a reputable database of these coefficients. First, internationally and possibly within each country or jurisdiction, it is incumbent on analysts to debate and distill knowledge about the relationship between policy-influenced variables and human experience, in an accountable and ongoing process. Frijters et al. (2019) describe a process for a transparent,
Survey data including SWL

More objective / more available / less expensive data monitoring

Statistical analysis, causal inference

Empirical model of SWL, given (objective) measureable circumstances, including: family, work, trust, wealth, housing, pollution, greenspace, etc.

Synthetic SWL index

Conceptual model predicting SWL in terms of objective circumstances

Figure 1: Measurement of life satisfaction (SWL) and generation of empirical weights for a wellbeing index
public database of coefficients from the best available evidence, organized in a way to encourage constant generation of improved evidence. They mention the IPCC process for aggregating scientific evidence on climate change coefficients as an example. They also provide a “preliminary list” of coefficient values, compiled by the UK-based What Works Centre for Wellbeing, in order to demonstrate that the science is mature enough for this approach to be viable.

The second key to the construction of a consensus model of the determinants of happiness is to increase the contribution of policy experiments and policy evaluations towards the evidence on life satisfaction. This means expanding the measurement and monitoring of happiness and its social supports. Exceptional effort should be made when a policy changes, or where a policy roll-out affects only a subset of the population or reaches different groups at different times. In this way more policy changes can be turned into policy experiments, often through partnership with academia, by cleverly varying or randomizing who is initially impacted.

These elements can give rise to an accountable, open database growing in both confidence and scope, differentiated by country as needed or desired, which gives the best available estimates and confidence intervals for the effects of individual, social, and collective life circumstances on human life satisfaction. The curation task of the DoHC should, at least initially, be up to the scientific community and civil society, rather than government. Happily, precisely those appointed groups have already taken on the task, as mentioned above.

5 Investments over the life course

Coefficients in a DoHC might be used to predict the difference in happiness of employees in workplaces with different levels of trust, or to predict the difference in happiness between people with exposure to childhood trauma and those without.

However, when it comes to policy, a government cannot directly change citizens’ trust of coworkers, nor change the childhood experience of adults. Instead, a government interested in happiness may consider making investments now in order to affect the future outcome of trust or the future burden of carried traumas. How might developing a curriculum for conflict resolution in primary and secondary school, or making one mandatory for matriculation, affect trust levels in workplace environments some years into the future? How might additional spending on maternal and parent resources or child protection change the future impacts of childhood experiences? More generally, the question thus arises: how will intermediate outcomes evolve in the future, given the implementation of a particular policy rule, the provision of a particular public service, or the collective investment in a particular resource?

Those intermediate outcomes will, hopefully, be listed as predictors of life satisfaction in the DoHC. However, the dynamics of how current events will impact individuals’ attributes over their life course, or how community investments today will affect circumstances faced by individuals in the future — these are questions that go far beyond
what a *DoHC* can answer. Indeed, these questions arise in the delivery of most policy, independent of any interest in subjective wellbeing. When government agencies justify specific expenditures on education, public health, rehabilitation, other social supports, or indeed on any civic infrastructure, it is based on some belief about how benefits will accrue in the future from those investments. Calculations of future outcomes based on models of such dynamics are used all the time to choose between alternative uses of public resources, even if those models are sometimes quite simplistic.

As a result of the availability of longitudinal, linked, citizen-based data, such government models are becoming more sophisticated. In recent years, for instance, New Zealand has revamped a number of its social spending programs to use the best evidence on how social service investments in an individual lead to savings over several decades. These calculations are focused primarily on achieving “a positive long-term financial impact for the social sector.” That is, investing in human capital now saves the government money in the future. However, as the government notes, this *investment approach*

“...also has non-financial benefit as people experience longer lives, lived in better health and independence, with greater educational achievement and with dignity. As a specific funding mechanism, ‘investment funding’ gives providers an incentive to focus on these long-term impacts and value them alongside immediate, short-term gains (Minister of Health 2016, p.6).

A rich *DoHC* is the ideal tool to evaluate these kinds of benefit in human terms. Indeed, ultimately, the government financial implications can also be expressed in terms of their wellbeing implications through use of a *DoHC*, since government expenditures translate into increased taxes and livelihoods in predictable amounts, and these circumstances have implications for happiness.

In order to understand investments over the life course of an individual, this kind of initiative necessarily links efforts of multiple government departments. Moreover, expressing the benefit stream over time in overall quality of life terms, using the *DoHC*, puts into commensurable terms the cost effectiveness of spending across all government agencies. Ultimately, this may facilitate happiness-based budgeting at the highest level.

To summarize, while the *DoHC* contains information about short-run relationships, government agency knowledge about medium-run returns to investment is what links current delivery and policy actions to future objective outcomes. Such investment may be in human capital, in communities, in infrastructure, and in the environment, and the future objective outcomes can be evaluated in human terms wellbeing through the *DoHC*.

### 6 Sustainability is different from future happiness

Many investment dynamics can feasibly be handled by the methods described above. It is reasonable to expect governments to use evidence-informed methods to decide to
tax away some resources from today’s consumption in order to invest in, say, subsidized childcare or public housing. Such investments can be worthwhile on the basis of building better lives in the future in exchange for a small wellbeing cost today. The life satisfaction approach in principle allows for all the diverse costs and benefits to be added up and compared in a sensible way, informing a choice about the “right” amount to spend.

Such spending will naturally include many environmental investments. There is already a large set of studies within the subjective wellbeing literature that quantifies the impact of environmental goods on life satisfaction (Maddison, Rehdanz, and Welsch 2020). Therefore, a number of environmental exposure variables will naturally end up in the DoHC, and our understanding of how policy can affect those exposures (as described above in Section 5) will inform certain environmental policies. For instance, exposure to noise, pollution, and green space appear to have an immediate and quantifiable effect on life satisfaction (e.g., Ambrey and Fleming 2014; Levinson 2018; van Praag and Baarsma 2005). Reduction of exposure to lead, or ensuring the viability of a fishery, may be predicted to affect other life conditions, listed in the DoHC, over a generation. Thus, cumulative policy impacts on life satisfaction may be estimated based on those life conditions.

**When the calculus fails**

However, some future outcomes are too complex to predict well. How might gradual topsoil erosion, land use change, groundwater depletion, or fossil fuel extraction be incorporated into a government decision-making framework? Abiding by some variant of the Brundtland et al. (1987) definition of sustainability, or by the logic of “weak sustainability” articulated by Solow (1991), we would ensure that, overall, the wellbeing of those in the future is sufficiently high, or maybe at least as high as our own. We would project how current policy options would affect objective outcomes in the future, coupled with a DoHC to calculate the corresponding impacts on human life satisfaction. The goal would be to calculate the correct, or optimal, level of consumption or extraction or emission such that, taking into account the numerous other gifts we bequeath to our descendants, future generations would have good lives overall.

That plan is a mirage. For long-run, unfamiliar, unpredictable, complex, and uncertain dynamics, these calculations are simply not feasible. For such complex systems, it is not feasible to choose an optimum based on accumulated knowledge about returns to investment (Section 5) and the DoHC. For such issues, the wellbeing approach fails and, by my definition, the domain of “sustainability” considerations begins.

For instance, reflecting on the contribution of academic economics to the question of how to manage greenhouse gases, it seems that two decades were squandered theorizing about the right discount rate and preference parameters which, if known, would point to a particular optimal combination of mitigating climate change versus adapting to it. Instead, if society had been equipped already with institutions and norms for an alternative approach, we could more easily have recognized that this question could not
yet be settled based on a quantitative optimization of wellbeing.

An approach to long-run risk

How, then, are we to incorporate a concern for long-run risk or conservation into a framework which privileges human wellbeing?

A sensible approach is to manage long-run problems through physical constraints, rather than optimization of wellbeing, when they are too complex or risky to treat through a system of prediction and quantitative balancing of human outcomes.

For example, in the case of greenhouse gases, a plan to stop the expansion of emissions could have been put in place in the middle or late 20th Century while further studies sought better precision on the future risks. More generally, our extraction of material resources from the earth and our addition of material pollutants to natural reservoirs could be subject to explicit limits.

The approach can be applied to governments at all levels with enforcement authority: a city may decide to limit the growth of its footprint; a regional government in charge of mining may put an annual quota on both extraction rates and surface damage; and national government may limit use of each ocean resource. In each case, the quota may be designed at first to halt further expansion of the rate of material extraction or effluent release, in ignorance of an “optimal” rate. The quota may subsequently be decreased, year over year, or otherwise adjusted if there is better evidence on how to maintain relevant resources or if the science and social science becomes sufficiently confident to choose a long term plan based on the calculus of wellbeing.

Without a set of principles and practices for dealing with sustainability issues, the policy reorientation towards wellbeing, described so far, would be incomplete. Any revision of policy away from an implicit growth-bias towards something more accountable to human experience will need to recognize the finite scope of applicability of such an approach, as well as to avoid conflating short- and medium-term human wellbeing with sustainability. The objective behind a physical-limits framework is ultimately to slow the pace of change in the face of uncertainties. For questions that are in this sense sustainability issues, it is universally the case that the true social cost of an activity is unknown, or the natural dynamics are too fragile or complex to predict well, or the social dynamics are subtle or complex. In these cases, the correct conservative approach is to control the pace of material effects on those systems. Within the space defined

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1If the greenhouse gas example sounds somewhat far-fetched, it is likely because there is an additional challenge in the case of truly global public goods; the resulting collective action problem confounds the present discussion on government policy making because national governments cannot enforce global decisions. Actually, the lack of international enforcement and coordination will also affect the cost of placing limits on extracting raw materials which are traded or which are embedded in traded goods.

2A similar approach may be applied to other, non-material changes for which there is enormous uncertainty in wellbeing implications. In some sense, this is why some social and political structures are embedded into constitutions — to restrict rapid change. Physically-limited resource flows could be thought of as a constitutional limits circumscribing the conduct of welfare-improving activities.
Survey data including SWL Statiscal analysis, causal inference

Conceptual model predicting SWL in terms of objective circumstances

Database of Happiness Co-efficients (DoHC)

More objective / more available / less expensive data monitoring

Ecological constraints ...

Prospective policies

Empirical model of SWL, given (objective) measureable circumstances, including: family, work, trust, wealth, housing, pollution, greenspace, etc.

Synthetic SWL index

Systems Knowledge:
Dynamics, predicted consequences of current investments

Empirical accountability for social weights

Project objective policy outcomes into the future

Predicted future SWL

Figure 2: Components of a wellbeing-oriented policy-making process

by such constraints, policy can continue to optimize human wellbeing using the life satisfaction approach.

Key features of a system of sustainability constraints are that (1) the constraints are related to objective physical measures, not to human benefits, and (2) that the physical measures are particular to each resource or waste stream, rather than being aggregated into an overall measure of environmental status or damage.

Thus, the framework advocated here is one in which a number of physical constraints protect the depletion of natural stocks of many kinds, but within those constraints society is generally directed to improve human satisfaction according to the best available knowledge.

Figure 2 depicts the combined institutions. The measurement and inferential processes which monitor the population and generate the DoHC are shown on the left. The green box represents constraints to policy necessitated by ignorance of certain long-run costs, and the “Systems Knowledge” oval represents the content of Section 5, that is, the translation of prospective policies today into objective outcomes in the future. The DoHC in turn translates these into a population distribution of expected human experience, upon which policy choices can be based.

Two critiques

There are two important premises which may make the physical limits approach compelling in the face of one obvious critique. This critique is that the costs to wellbeing of an unnecessary or overly conservative constraint may be just as high as the potential
The first relevant premise is one of the major insights from life satisfaction research. It is that the scope for improving, or indeed diminishing, life experience through non-material changes to society is enormous, while the scope for changing lives through material means is relatively limited (Barrington-Leigh 2016b). This is generally counter-intuitive in the context of developing economies. Nevertheless, the evidence spans all levels of development. Projections based on past development suggest that changes in GDP/capita and healthy life expectancy between now and 2050 are unlikely to change world average life satisfaction by more than 0.5 on the 11-point scale (Barrington-Leigh and Galbraith 2019). By contrast, changes in a few non-material variables may be responsible for as much as 3.5 points of change in world average life satisfaction, with the optimistic end leaving the average country as happy as today’s Belgium and Costa Rica. As a result, the scope for improving lives may be surprisingly undiminished under the imposition of some material constraints.

The second proposition is that on moderate time scales, innovation partly compensates for supply limitations. When supply constraints are transparent and predictable, markets respond appropriately through innovation and substitution. The idea that such constraints can spur innovation so strongly as to be beneficial even in the short term (Porter and Van der Linde 1995) has support in a variety of contexts. While that is not likely universally true, the innovation bred by clear constraints on a given material flow will always increase efficiency and always mitigate the reduction in consumption that would otherwise be experienced. This is exemplified by the idea that the electric car revolution could likely have occurred 100 years earlier, given clear incentives or the lack of cheap oil. Policy should therefore focus on optimizing human wellbeing within a set of ecologically-motivated constraints, rather than giving undue focus to opportunity lost to those constraints.

There is a second obvious objection to the proposal of this section, which is that constraining resource extraction or pollution does not necessarily entail constraining it sufficiently. However, this is a detail. Once a public accepts the framework described here, and if the institutions to enforce quotas are in place, then updating the quantities is easy. This would happen in response to improved science or even as part of a life satisfaction-guided policy as soon as enough was known for that approach. When shifts are made with credible commitment and over time, they are relatively inexpensive for the private sector, for whom the ability to plan confidently is of utmost value. In this sense, the actual amount of an initial quota for a given constraint does not matter greatly. The key is a framework of physical limits with wellbeing optimization within those limits (Daly 1973).

**Precedents for physical limits**

Fortunately, as with the other institutions described so far, the institutions for limiting physical throughput are neither completely novel in concept nor in practice.

A number of resources are now capped at non-zero values. For instance, water
extraction quantities, SO\textsubscript{2} emissions, fishery catches, forestry cut volumes, urban development perimeters, and CO\textsubscript{2} emissions are examples of material flows subject to caps, mostly allocated by auctions of tradeable quotas.

The idea has been around for even longer, but the proposal for widespread use of quotas to limit many principal material flows is due to Daly (1973). He recommended that quotas converge toward levels that abide by certain principles of sustainability for renewable and non-renewable resources (Daly 1990). In some cases these are practicable; in others, however, those levels suffer from uncertainty due to natural or social sciences, just like insufficiently-informed future wellbeing calculations. In both contexts, science will inform better targets over time. Capping flows at fixed or decreasing levels in the mean time will ensure that society has the means to be deliberate about those decisions, rather than ignoring them for being too complex. It also provides time to detect unintended consequences of the extraction or pollution, and incentivizes technological innovation for substitution early on.

In practice, international competition and political pressures will limit how stringent governments are willing to be in imposing caps. Even if some resource use caps are scheduled to increase over time, the predictability of those limits is valuable for investment planning, and the very fact that the infrastructure is in place to restrict or decrease them makes doing so more likely. In summary, expanding our institutions and social acceptance for self-imposed limits expressed in physical and ecological terms, rather than those of human values, is an important complement to wellbeing-based policy making.

7 Benefit-cost budgeting

The DoHC can be used to calculate (predict) the full distribution of predicted life satisfaction responses for a population or subpopulation. That is, the outcome of a policy is not a single value (for instance, the average life satisfaction of the population), but rather a statistical guess at the whole set of responses, as if every resident were asked the life satisfaction question at an appropriate future time, after implementation of the policy.

A government or society must choose what “moments” of this distribution it wishes to maximise. For instance, it could target the average (akin in ethical narrowness to pursuing a higher GDP, or average income), or the median, or any more complex aggregate, in which presumably some extra emphasis is given to the improvement of the lives of those at the bottom of the distribution. Policy and preferences about distributional issues are thus no more nor less complicated that when the focus is on choosing measures of inequality in income. The discussion to follow continues to abstract from this issue, by referring simply to life satisfaction as though there exists a clear preference on how to aggregate it.

In principle, under the framework of Figure 2, any legislation may be tested for whether it is predicted to improve life satisfaction. Because the effect of extra taxation
on life satisfaction can be estimated, any government expenditure on services or investment can also be tested for whether it is predicted to improve life satisfaction. That is, the wellbeing cost of having less after-tax income may be added to the wellbeing benefit of the prospective new service. For investments it is possible that the answer might be different on the short term versus the long term. In any case, effects must be appropriately summed over time, so that the units of benefit-cost accounting in this case are human happiness over time, or some moment of the distribution function of human happiness over time.

Some authors have suggested that this approach is unrealistic because the size of government budgets is set politically (Frijters et al. 2019; Layard and O’Donnell 2015), in which case a cost effectiveness version of the benefit-cost accounting becomes appropriate (Layard and O’Donnell 2015). In this approach, prospective policies can be ranked by a ratio of their anticipated effect on life satisfaction divided by their cost. The highest-ranked policies should be pursued, continuing until the budget is used up.

Layard and O’Donnell (2015) do not give any support for their premise that the size of government budgets cannot also be set with an eye to their effect on wellbeing, and I believe this idea is too conservative. Because of the complexities involved in the “Knowledge of Dynamics” component in Figure 2 (Section 5), there will be no unique, mechanical answer to the question “How large should the budget be?” Thus, plenty of room for political debate, heterogeneous policy regimes, and experimentation remains, even within a culture which expects the size of the budget to be chosen to maximise wellbeing in principle.

Lastly, it is important to note that the idea of holding policy, and budgets, accountable to measured happiness is not novel (e.g., Cameron 2010; Dolan and White 2007; Donovan, Halpern, and Sargeant 2002; Frijters et al. 2019; Global Happiness Council 2018, 2019; Layard 2006, 1980; Ng and Ho 2006; O’Donnell and Oswald 2015). In the annual Global Happiness and wellbeing Policy Reports, advice is being collated on best policies for happiness in education (Seligman and Adler 2019), healthcare systems (Peasgood, Foster, and Dolan 2019) city-level policy making (Bin Bishr 2019), central government institutions (Durand and Exton 2019), and other domains. Being discipline-specific, these best practice guides integrate the kinds of knowledge and time frames characterizing both blue ovals in Figure 2.

8 Proceeding with an imperfect system

Superficially, a change towards a policy environment that is accountable to a human-centred measure of wellbeing, such as life satisfaction, may come across as intimidating to existing government analysts and policy makers. Indeed, considerable attention to capacity-building will be needed (Durand and Exton 2019) to make new analyses feasible. However, there is no need to conceive of a sudden nor threatening revolution. New Zealand has implemented a “wellbeing Budget” which consists only of requiring federal departments to provide a structured evaluation of projected wellbeing impacts for all
budget submissions. The impacts are assessed across 12 prescribed domains of wellbe-
ing and four kinds of capital which sustain wellbeing. These domains of “wellbeing” are
not derived in an empirically-accountable way from measurements of life satisfaction,
but the initiative has a lot in common with how a life satisfaction approach would be
unveiled in the budgeting process.

As mentioned in Section 4, the DoHC always remains incomplete and subject to
revision whenever new evidence can refine or extend the database. As governments
become used to assessing outcomes using human life satisfaction, they will have extra
incentive to take up the habit of engaging in experiments. New policies can be piloted, in
partnership with researchers, with careful monitoring of outcomes using life satisfaction
surveys, or deployed sequentially in a way that facilitates causal inference. In this
manner, experience can be pooled to support the breadth, confidence, and growth of the DoHC.

9 From here to there

How might a government and public service get from a system with limited capacity for
cost/benefit analysis to a policy regime that is quantitatively guided by human-centred
outcomes, and simultaneously consistent with long-run commitments? One may break
such a process down into three phases, described below.

9.1 Short term: Evidence-based budgeting

The beginning of a transition sets in motion the shift in public expectations towards
meaningful human-centred outcomes. The goal could be thought of as initiating a turn
of direction which transcends (endures beyond) the present government and therefore
leads to further transition. Fundamentally, this means starting down the conceptual
and practical path of holding policy, where feasible, accountable to the best evidence
about human wellbeing. Once that is initiated, subjective reports are likely to take a
prominent position, since there is no empirically accountable way to choose between
top-down allocation decisions besides appealing to people’s own aggregation of differ-
ent life domains into an overall experience. This first phase could therefore involve
(1) rhetorical framing of a budget around “evidence-based budgeting” or a shift to
evidence-based policy, along with the mention of overall life evaluations as an ultimate
form of accountability for social outcomes; (2) ensuring that life satisfaction and asso-
ciated key measures of trust, engagement, meaning, and time use are being measured
sufficiently and regularly; (3) putting in place infrastructure to be able to measure
and monitor the outcomes of policy changes and interventions and new allocations
of resources; and (4) an improvement in capacity and standards for carrying out quan-
titative projections for future evolution of existing objective goals in each
department.

The last item may involve developing procedures for benefit-cost accounting and ex-
panding the breadth of use of such approaches to include impacts shown to be important to life satisfaction but underemphasized by existing practice. More significantly, however, it involves the implementation of investment models describing human, social, and physical capital to inform such accounting. This is the “dynamics” of Section 5. How do investments in social supports at different points in an individual’s life play out over the life course? Similarly for health, including mental health, and so on, for other government expenditures. Political preferences will come in through discount rates, modeling approaches and assumptions, and simply through the selection of investments to consider, but the standard will be set that public investments are evaluated according to the prospective (and retrospective) provision of benefits over time. Moreover, these projections should increasingly be made fully transparent.

9.2 Medium term: The DoHC, monitoring, and policy experimentation

As the capacity-building and reframing steps described above are consolidated, new evidence on human outcomes can be compiled. This entails (1) monitoring life satisfaction and related outcomes more intensively; (2) turning new resource allocations and regulation changes into opportunities for experimentation; (3) support for an independent, transparent, and public DoHC; and (4) increasing use of the DoHC to inform choice of objective outcomes to model and to measure. This means finding the low-hanging fruit where conventional productivity and market consumption approaches diverge the most from a more encompassing analysis, and where the costs to improving wellbeing are zero or negative (Durand and Exton 2019). In addition, (5) research into the implementation of material constraints must be carried out as soon as possible in order to facilitate the remaining components of the transition.

9.3 Long term: Accountability to happiness, and constraints against long-run risk

In the long run, projected outcomes are translated into changes in wellbeing by reference to the DoHC, and decisions and budget allocations both within departments and between ministries can be made and justified based on the future sequence of benefits to subjective wellbeing expected from any current decision. As argued earlier, even the level of taxation can in principle be evaluated based on the costs to experienced wellbeing it imposes and the benefits to experienced wellbeing from that which it can fund.

However, questions of distribution will retain a large component of political preference and debate. Regardless, the transformative aspects will be transparency of rationale and future expectations from a given policy, leaving them open to public analysis and informed debate, and the selection of, focus on, and justification by outcomes that are meaningful to people and supported by evidence on life satisfaction.
Also on the long run, a coordinated suite of material constraints at all levels of geography and government (Section 6) can be implemented. The goal for many of these will be to halt the growth of material impacts on complex systems and to shrink those impacts over time, rather than waiting for knowledge of the optimal level of extraction or pollution based on human wellbeing. This means that the models, projections, and accountability based on the DoHC can remain tractable, without being overwhelmed, quantitatively or in terms of institutional capacity, by overly-complex or uncertain projections, or overly-long-term outcomes.

10 Conclusion

For brevity, this paper does not descend into the details of policy-making in hierarchical institutions, the pitfalls of alternative approaches, monitoring and enforcement costs for caps, the challenges for caps raised by international trade and non-cooperation, or the additional complexities of distributional issues or temporal discounting. However, each of these aspects is already under consideration in the context of wellbeing-driven policy or being actively worked on (e.g., Frijters et al. 2019; Global Happiness Council 2019; Happiness Research Institute 2020) or will remain relatively unchanged by a transition.

The intent here is, first, to convey the sense that the science and economics of happiness is mature enough to foster a global re-orientation and focusing of policy-making; second, to fill in the missing piece of how such a world can approach sustainability questions that are not yet sufficiently amenable to the life satisfaction approach; and third, to explain the role of an institutional layer dealing with “medium term” dynamics between policy decisions and the known determinants of life satisfaction. Overall, the point is that each of the necessary institutions already exists, allowing for an incrementalist approach to embracing a new, wellbeing-centred policy approach. The task of transforming governments towards accountability to human-centred outcomes cannot take place as a sudden revolution, but as a mutually-reinforcing evolution of public understanding and government practice.

Over time, the public will increasingly look to life satisfaction as a prominent, or headline, indicator of the state of society, and as a measure of the differences between subgroups in overall experience. Also, with access to the same independently-curated DoHC on which the government relies, civil society will be able to evaluate the government’s rationalization of its policies using a common language and sensible objective. Whether this revised objective leads to subtle or transformative changes over the long run remains to be seen; I would gamble on transformative.

Thus, life satisfaction can act as an organizing concept for measuring human-centred outcomes and their distribution, and can provide empirical accountability both to the selection of a broader index of objective indicators, and to one element of the policy development and selection process. However, designing policy to maximise human wellbeing of this sort is entirely insufficient to achieve sustainability, so a complementary approach for long-term risk is described in this chapter. Indeed, in “moving beyond
GDP,” it appears to be as important to properly situate ecological concerns as it is to choose a sensible measure of life quality. The common mistake of assigning extra, rather than less, meaning to GDP by targeting a slow-down, and the even more common mistake of anthropomorphizing the environment by trying to integrate its health into indices of the wellbeing of humans, are both unproductive in the long run. Moreover, they go nowhere near far enough in strength or specificity of protection for ecological integrity.

For those concerned with the decoupling of growth and environmental impacts, any economic growth under the “beyond GDP” institutions I have described would by construction be entirely decoupled from material flows under constant or decreasing caps. Happily, under a system with an explicit objective to improve life satisfaction, there may be very little public attention on the growth or contraction of GDP, because data on more compelling and relevant measures would be at hand.

The key institutions described in this chapter already have real-life precedents. The practical successes and lessons from existing sub-national implementations of material caps are valuable in designing a more comprehensive system of such constraints, but ultimately any transition rests on new institutions becoming accepted and expected by the public. Due to the convergence of a maturation of happiness research, wide concern about global climate change, and in 2020 a global health crisis requiring reflection about institutional norms, the time may be at hand. A sensible and intuitive approach is to enforce material constraints embodying ecological precaution and to optimize the quality of human lives within those constraints. With the framework described here, both parts of this combined task can be carried out quantitatively and with increasing transparency.

I conclude that, while providing a new level of accountability to policy, this framework accommodates plenty of breadth for creativity and diversity in policies and political platforms. This is due to two factors. The first is the complexity of ideas about how economic and social outcomes of policy will evolve over time, i.e., the investment dynamics, which in principle may encompass much of the social sciences. The second is the existence of normative debates about how to deal with distributional issues, i.e. inequality, in wellbeing or in other intermediate outcomes.

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References


