Law, Sustainability, and the Pursuit of Happiness

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Environmental law focuses on regulating the production of energy and goods. Less attention has been given to reducing the environmental footprint of consumption. This Article brings together several strands of research, including psychological and economic research on subjective wellbeing; research on energy efficiency; writings by urban planners on sustainable communities; and recent work on individual behavior and sustainability. The conclusion, in a nutshell, is that changes in consumption of goods and energy, assisted by improvements in urban design and transportation infrastructure, can significantly reduce energy use and environmental harm. A variety of legal tools are available to promote these changes. Remarkably, many of the steps needed for sustainability can actually improve quality of life, adding to individual satisfaction. Thus, sustainability for society and the pursuit of individual happiness need not be at odds.

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I. Introduction

With only one-twentieth of the world's population, the United States accounts for a disproportionate level of annual global resource consumption. It consumes four times its per capita share of resources, including a fifth of the world's fossil fuels, a fifth of the copper, and a quarter of the aluminum.[2] Moreover, the United States produces a quarter of global carbon dioxide, and uses a third of all paper and plastic.[3] From 1900-1990, U.S. population tripled, while the use of raw materials multiplied seventeen times.[4]

Sustainability involves scales ranging from individuals and local communities to nations and continents.[5] This Article focuses primarily on small-scale actions and places: individuals and local communities. It seeks to articulate a vision of sustainability focused

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[1] Sho Sato Professor of Law and Chair, Energy and Resources Group (ERG) University of California,Berkeley. An early version of this article was presented as the 2011 Lloyd K. Garrison Lecture on Environmental Law at Pace Law School. I have benefitted from numerous conversations about sustainable consumption with my ERG colleagues and with Pace faculty members following the lecture. I would also like to thank Eric Biber, Ethan Elkind, Alice Kasawan, Deborah Lambe, Victoria Plaut, Michael Vandenberg, Steve Weissman, and participants in a Berkeley Law School faculty workshop, for their comments on an earlier version of this paper. Anna Katzenbacher, Thad Blank, and Daniel Kolta contributed useful research to this project.

[2] Dave Tilford, *Why Sustainability Matters*. Available at http://www.sierraclub.org/sustainable_consumption/tilford.asp. For additional information on sustainable consumption, see European Commission, Sustainable Consumption and Production Policies Development, Sustainable Consumption, http://www.oecd.org/dataoecd/1/59/40317373.pdf; United Nations Environment Programme, Sustainable Consumption http://www.unep.org/themes/consumption/index.asp; Sustainable Consumption Institute, University of Manchester; http://www.sci.manchester.ac.uk/; World Business Council on Sustainable Development, Sustainable Consumption, http://www.wbcsd.org/DocRoot/I9Xwhv7X5V8cDIHbHC3G/WBCSD_Sustainable_Consumption_web.pdf; World Economic Forum, Sustainable Consumption ,http://www.weforum.org/en/initiatives/DrivingSustainableConsumption/index.htm; Economics for Equity and Environment Network, http://www.e3network.org/

[3] Tilford, supra note 2.

[4] Id.

[5] See National Research Council, Our Common Journey: A Transition Toward Sustainability 3 (1999) (sustainability must be addressed at multiple scales).

on how people live their daily lives in their communities. After grounding this vision in recent psychological and economic research on wellbeing, the Article explores practical legal strategies for implementing the vision.

Some of those strategies merely involve incremental improvements or expansions in existing programs; others are more innovative. Even familiar policies can be seen in a new light as part of a broader campaign for sustainable consumption and communities. Understanding how these options fit into a coherent overall strategy to promote wellbeing requires combining bodies of law and research that are normally quite separate: psychological studies of happiness, energy efficiency policies, nutrition and public health, land use planning, and "new governance" theories of public participation.

From this perspective, sustainability is not an isolated "environmental" goal – it is part of a broad social strategy. We need to give Americans information tools and opportunities to move beyond the consumer society and to focus more on happiness and less on "things." The government needs to provide individuals with expanded access to alternative forms of satisfaction by encouraging family-friendly policies, opportunities for recreation in public parks, and lifetime education.

Non-environmental policies can also augment opportunities for happiness apart from personal consumption. For example, family-friendly policies in the workplace help individuals invest in satisfying relationships at home. Improved wellbeing involves strengthening state and city parks as focal points for recreation and relaxation, where people can find sources of beauty and enjoyment. Another source of wellbeing involves encouraging civic involvement as an arena where people can find satisfaction. True, a

move away from consumerism may not suit everybody,[6] but society can provide more sustainable lifestyles that will suit many.

Although not all of the steps toward post-consumerism involve "environmental" measures, integrating them into a coherent vision of a sustainable society has both symbolic and practical benefits.[7] In symbolic terms, it helps the public, which may have limited interest in policy details, understand the big picture of reform. In practical terms, it might strengthen alliances between groups that have very different primary goals by illuminating the complementarities between those goals.

As we will see, the transition to sustainability will require not only changes in how businesses operate, but also change in people's choices of how live. At the level of individual decision-making, people need access to information and guidance to assist with sustainable consumption decisions.[8] To have a fuller opportunity to lead sustainable and satisfying lives, people also will need infrastructure and a built environment that support sustainability.[9] Fortunately, research by psychologists and economists indicates that many of these changes can pay a bonus in terms of improvements in individual wellbeing and happiness, quite apart from their contributions to mitigating climate

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[6] As Wilk says, "[s]o far we have been telling people that they can be happier with less, but in reality, some people are going to be very unhappy at the prospect." Richard Wilk, *Consumption Embedded In Culture and Language: Implications for Finding Sustainability,*6 *Sustainability:Science, Practice & Policy* 38, 47 (2010).

[7] To be sure, we cannot simply assume that giving people more time with families will reduce resource use – for example, they might invest in larger vehicles for family use and larger homes using more energy – so complementary environmental policies may be needed to help control these potential side-effects.

[8] See Part IIID infra.

[9] See Part IV infra.

change or other environmental problems.[10] This "happiness dividend" may also assist to strengthen long-term buy-in to sustainability policies.[11]

Some steps needed for sustainability may reduce consumption levels, but consumption is not a good in itself. Reducing consumption should be acceptable, if not desired, if the tradeoff takes the form of improvements in key components of happiness such as time for friends and family or improved health.[12] As some leading economists have said, it is a mistake to focus too narrowly on material goods as a measure of social welfare:

> To focus specifically on the enhancement of inanimate objects of convenience (for example in the GNP or GDP which have been the focus of a myriad of economic studies of profess), could be ultimately justified – to the extent it could be – only through what these objects do to the human lives they can directly or indirectly influence.[13]

This shift away for counting welfare in terms of increased consumption also raises questions about reliance on cost-benefit analysis as a decision-making tool.

This Article explores the opportunities for making forward strides on sustainability at the consumption end.[14] In a free society, to change individual lifestyles

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[10] See Parts III and IV infra.

[11] Admittedly, there is a bit of a temporal mismatch. The pursuit of happiness – in the sense of maximizing individual wellbeing at any *given* time – and sustainability as a quest for wellbeing over an *extended* period of time – may not always go hand in hand. Maximizing wellbeing over the short-run may not provide the greatest long-term assurance of wellbeing. Thus, temporal tradeoffs and short-term sacrifices may be necessary. But, as discussed in the text, the conflict between sustainability and present wellbeing is less severe than some may assume.

[12] Although it is not a focus of this Article, the most obvious contribution of environmental law to individual wellbeing probably takes the form of improved health due to reductions in pollutants and toxic substances.

[13] Joseph E. Stiglitz, Amartya Sen, Jean-Paul Fitoussi, REPORT BY THE COMMISSION ON THE MEASUREMENT OF ECONOMIC PERFORMANCE AND SOCIAL PROGRESS (2009). To the same effect, see Tim Brown, PROSPERITY WITHOUT GROWTH? THE TRANSITION TO A SUSTAINABLE ECONOMY (Sustainable Development Comm'n 2009). For further discussion, see Part II(C) infra.

[14] In 2008, UNEP released *Planning for Change: Guidelines for National Programmes on Sustainable Consumption and Production*. This document provides guidelines to advise governments and other interested parties on sustainable consumption and production programs under the Marrakech Process, and

requires creating sustainable infrastructure, informing individuals, and providing incentives, not coercing them into choices that we prefer them to make. Sustainable consumption and green communities are large-scale goals that will not be easy to achieve. But they are not utopian, and significant steps can be taken in the near term.[15]

Changing how Americans live will ultimately involve modifications in infrastructure, social norms, and key institutions. Fundamental change will be slow, but even in the short-term, much can be done to help create more sustainable consumption and communities.

The Article proceeds in four stages. Part II looks more deeply at individual consumption, its functions, and its relationship to happiness. Current research indicates that wealth and the attending consumption are only loosely related to subjective wellbeing. There is room, then, for policy interventions that may restrict or redirect consumption without harming how individuals experience their quality of life.

Part II establishes that consumption levels are only one factor that contributes to individual happiness and satisfaction with life. Quality of life has more to do with mundane family and personal activities like walking or exercising than with expenditures on consumer goods. Consequently, even when sustainability means reduced consumption or at least reduced growth in consumption, quality of life need not suffer.

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includes nine case studies from among the thirty countries already identified to have programs in place. For other discussion of sustainable consumption in the law review literature see Katrina Fischer Kuh, Capturing Individual Harms (2011), available at http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1785743 (forthcoming Harvard Environmental Law Review, 2011). *See also* James Salzman, *Sustainable Consumption and the Law*, 27 ENVTL. L. 1243, 1250, 1255-56 (1997); Hope M. Babcock, *Assuming Personal Responsibility for Improving the Environment: Moving Toward a New Environmental Norm*, 33 HARV. ENVTL. L. REV. 117 (2009).

[15] A useful discussion of these issues can be found in Jason J. Czarnezki, EVERYDAY ENVIRONMENTALISM: LAW, NATURE & INDIVIDUAL BEHAVIOR (2011).

This may seem too good to be true. For that reason, the remainder of the article marshals a broad array of strategies -- none of them remotely utopian -- that can contribute to sustainability without harm to quality of life.

Part III turns to specific interventions, beginning with changes in energy use needed to reduce carbon emissions.[16] A range of individual actions, while seemingly minor, could dramatically reduce personal energy consumption. To name just a few, individuals could reduce idling of cars, carpool more frequently, select more energy efficient cars and appliances, reduce indoor winter temperatures by a few degrees, and install better furnaces.[17] Yet, apart from programs promoting green building and retrofitting, consumption-related behavior receives little attention. Thus, there is significant room for new policy initiatives to reduce energy use.

Part III also demonstrates the potential for actions at the household level to promote sustainable water use and food production, which have independent significance for sustainability but also relate indirectly to energy use.

Part IV moves from the household to the community level. Individuals consume energy not only by using their own property but through use of public infrastructure. Given the amount of energy used for non-commercial transportation, urban design can have a major impact on carbon emissions. It can also reduce commuting, an activity that most individuals find unpleasant. Freeing up time from commuting allows individuals to

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[16] The focus in this article is on non-economic interventions, but this should not be taken to discount the usefulness of traditional economic incentives – for instance, in the form of utility pricing changes. The literature in environmental economics dealing with economic incentives is enormous, so for present purposes it seems more fruitful to focus on alternative approaches.

[17] Michael Vandenbergh and Anne C. Steinemann, *The Carbon-Neutral Individual,* 82 NYU L. REV. 1673, 1700 (2007). Vandenbergh has been in the forefront of work in the legal academy on individual behavior as it relates to consumption. This Article extends that work by considering changes in goods and services from the production side and changes in consumption through community rather than individual efforts.

spend more time engaged with friends, family, and other activities, shifting away from ownership of commodities as a source of gratification.

Part V focuses more directly on how individuals can be mobilized to assist in sustainability. There are a variety of ways of motivating individuals toward more sustainable consumption. In addition, technological advances have expanded the opportunities for individuals to be involved in community and even national efforts for environmental improvement. This involvement would not only be beneficial to sustainability efforts but to individual wellbeing, since research shows that civic involvement is associated with higher subjective wellbeing. The Article closes with a brief summary and some final thoughts.

The policy payoff for this inquiry is significant, because consumption is the least developed dimension of sustainability. The actions that have been taken to date have been fragmented and timid, rather than integrated into a strategy for more sustainable living. Thus, the consumption sphere, including transportation and housing, still has untapped potential for policy initiatives to reduce carbon and address other environmental issues.

II. Rethinking Consumption

The average American consumes over fifty times as much as the average Chinese consumer. Fourteen million trees are cut down every year simply to make mail order catalogs.[18] The ecological footprint that goes with this consumption is huge. So is the

[18] Id. at 1700.

amount of waste: "Ninety-nine percent of material used in production of or contained within goods in the United States becomes waste within six weeks of sale."[19]

To see the need for change, imagine that consumption continues to grow at the same rate in this century as in the last century, with the same seventeen-fold increase[20] in the use of raw materials. In the absence of a compensating increase in efficiency of resource use, the expansion of the current baseline[21] would be breathtaking. A little arithmetic demonstrates that the United States alone would annually consume three times the current global consumption of fossil fuels, produce three times the current global level of carbon dioxide, three times the current global consumption of copper, and so forth.

This is obviously not feasible in a world of impending climate change, where other economies are also growing rapidly. Staving off the projected seventeen-fold increase in resource use would require tremendous technologial progress and enormous increases in renewables and efficiency simply to keep America's ecological footprint where it is today – and today's footprint is not sustainable.[22] Thus, even remarkable technological changes to reduce fossil fuels and resource use may not be enough by themselves to support dramatically higher levels of consumption. Going forward, then, we certainly need far more renewables and greater efficiency, but we probably also need

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[19] Id.

[20] See text accompanying note 4 supra.

[21] See text accompanying notes 3-4 supra.

[22] The trajectory of U.S. consumption needs to be put in the context of project massive economic growth in China and India, which are expected to be respectively and first and third largest economies in the world by 2050. See Laurence C. Smith, THE WORLD IN 2050: FOUR FORCES SHAPING CIVILIZATION'S NORTHERN FRONTIER 41 (2010).

a decrease in the total amount of resource and energy consumption in favor of other forms of personal fulfillment.

Given that historic U.S. consumption trends probably cannot be sustained even with rapid technological progress, we must begin to search for new ways, less demanding of resources and energy, for Americans to enjoy a high quality of life. If we measure quality of life solely in terms of personal consumption, sustainability will be a quixotic quest. Instead, sustainable consumption has to become part of the strategy.

This section will lay the conceptual groundwork for strategy design. Part A lays the groundwork. It begins by exploring the concepts of consumption, sustainability, and their offspring, sustainable consumption. Part B then surveys the psychological and economic literature about wellbeing in relation to wealth and economic growth. Part C considers the implications of this research for public policies relating to consumption and economic growth.

A. Unpacking the Concept of Sustainable Consumption

It behooves us to begin with a closer look at sustainable consumption, and its constituent parts, consumption and sustainability. These concepts require some unpacking to be analytically useful.

1. Consumption.

The term "consumption" is not self-explanatory, although we all have a sense of what it includes. Revisiting the concept is worthwhile, not just for the purpose of definitional nicety, but also because consumption turns out to serve many purposes and to have multiple meanings. Consumption does not merely meet physical needs such as

food, transportation, and shelter but also serves a variety of psychological and social functions.

"If consumption is self-evidently a major driver of environmental change, consumption itself is not self-evident."[23] In a recent essay, anthropologist Richard Wilk argues that the term *consumption* is used in essentially metaphorical ways.[24] Consumption is not just about individual decisions about goods and services, it entails "a stream of choices and decisions winding its way through the various stages of extraction, manufacture, and final use, embedded at every step in social relations of power and authority."[25] Gill Seyfang describes consumption as "the completion of economic circuits and the satisfaction of wants; it is the creation and maintenance of identity and lifestyles."[26]

Consumption has been studied by a variety of disciplines, each bringing their own questions, assumptions, and methods. These differences are neatly described by Heap and Kent: "Economists see consumption in terms of the generation of utility, anthropologists and sociologists in terms of social meanings, and scientists in terms of the human transformation of materials and energy."[27]

Some forms of consumption, such as overeating, are not only bad for sustainability because of the waste of resources to produce food but also harm individual wellbeing. Other types of consumption could be pursued with much less environmental harm if products were better designed or consumers were better informed. And some

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[23] Thomas Princen, Michael Maniates, and Ken Conca, CONFRONTING CONSUMPTION (2002).

[24] Wilk, supra note 6, at 38.

[25] Princen, Maniates, and Conca, supra note 23, at 12.

[26] Gill Seyfang, THE NEW ECONOMICS OF SUSTAINABLE CONSUMPTION: SEEDS OF CHANGE 4 (2009).

[27] See Seyfang, supra note 26, at 4.

ways of decreasing consumption – for instance, shifting to less car-dependent but more family-friendly community designs – would simultaneously improve both wellbeing and sustainability .[28]

In concrete terms, we can think of a top-of-the-line laptop as a tool for performing certain tasks such as playing movies for the owner's enjoyment. We can also think of it, however, as symbolizing the user's technological abilities and knowledge, as more broadly representing our society's adherence to technological progress, or as advertising the user's economic status. Tim Kasser has argued that while material goods can satisfy utilitarian needs, they are less able to satisfy social and psychological needs.[29] For example, the laptop can only symbolize technological abilities and knowledge for a limited time (until a better model comes along), and it only advertises economic status to the relatively limited group who know about computer pricing.

2. Sustainability.

If consumption is one element of sustainable consumption, the other is obviously sustainability. Definitions of sustainability employ different assumptions about the degree to which natural resources and capital investments are substitutes. These different forms have been respectively characterized as *weak* and *strong* sustainability, depending on whether sustainability requires maintaining the current level of total assets (including manmade and natural), or whether natural assets can be replaced by additional capital

[28] Part of the resistance to the idea of the happiness bonus probably come from a sense that we have caused environmental harm from over-consuming and failing to pay for environmental improvements and that we should therefore suffer for our excesses and carelessness. But as we will see, single-minded self-interested consumerism is not necessarily a good strategy for happiness, so it is not surprising that we can improve on both sustainability and happiness at the same time.

[29] Kasser's recent book, *Meeting Environmental Challenges: The Role of Human Identity*, examines those fundamental aspects of human identity that operate to frustrate approaches to meeting environmental challenges. Available for download at:
http://www.wwf.org.uk/what_we_do/campaigning/strategies_for_change/

assets. The second form of sustainability is "stronger" in the sense that it precludes tradeoffs between environmental assets and other forms of social wealth. For present purposes, however, either definition of sustainability will serve.

Defining sustainability in operational terms requires a consideration of threats to environmental quality. We face numerous environmental challenges such as loss of biodiversity, limited supplies of freshwater, and conventional air and water pollution. Under any definition of sustainability, climate change is high on the list of threats.

Depending on future emissions and climate sensitivity, the world will end up 2–7˚C warmer than it is today.[30] Temperature change in the Arctic could be about twice as large.[31] Even warming of 2˚C would leave the earth warmer than it has been in millions of years.[32] The United States is large and geographically diverse, and climate impacts will vary correspondingly.[33] Wetter conditions are expected in the Northeast United Statesand on the coasts, while drier conditions are expected in the inland west.[34] In the southeast, even though absolute temperature changes will be smaller, the baseline is high, resulting in many more very hot days later in this century.[35] Cities in the Midwest will experience increasing heat waves and decreased air quality.[36] Two-thirds of all U.S. coastal wetlands would be lost with a one-meter rise in sea level.[37] Meanwhile, in the

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[30] *Id.* at 129.

[31] *Id.* at 133.

[32] *Id.* at 225.

[33] The most recent information about U.S. climate impacts can be found in U.S. Global Change Research Program, GLOBAL CLIMATE CHANGE IMPACTS IN THE UNITED STATES (2010).

[34] *Id.* at 42.

[35] *Id.* at 112.

[36] *Id.* at 117.

[37] U.S. Impacts, supra note 23, at 84.

arid southwestern United States, the future of the water supply is uncertain, with potentially major impacts on agriculture.[38]

Because of the central importance of climate change to sustainability, reductions in carbon dioxide and other greenhouse gases must be a core goal of sustainable consumption and green communities. Consequently, controlling energy use is a crucial part of sustainability planning. In the next section, we consider how the emergence of sustainable consumption of energy and goods as a focus of environmental planning.

3. Sustainable consumption.

It remains to combine "sustainability" and "consumption." Nearly all environmental threats have some link to consumer behavior: water is used to grow food for consumers or to water lawns; biodiversity is threatened by destruction of habitat for housing or agriculture; air and water pollutants come from power generators or factories that supply consumers with goods, energy, or services.

Broadly, *sustainable consumption* has been defined as, "[t]he use of goods and services that respond to basic needs and bring a better quality of life minimizing the use of natural resources, toxic materials and emissions of waste and pollutants over the lifecycle, so as not to jeopardize the needs of future generations."[39] *Agenda 21*, the policy document emerging from the 1992 Rio Earth Summit dedicates chapter four to "Changing consumption patterns." It identifies two broad objectives: (1) promoting patterns of consumption and production that reduce environmental stress and will meet the basic needs of humanity; and (2) developing a better understanding of the role of

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[38] See Jason Mark, *Climate Change Threatens to Dry Up the Southwest's Future*, www.alternet.org/story/103366/ (Nov. 18, 2008).

[39] T. Jackson and L. Michaelis, POLICIES FOR SUSTAINABLE CONSUMPTION 14 (2003)[note: first names of authors not provided].

consumption and of feasible routes to more sustainable consumption patterns.[40] And *Agenda 21* calls on governments to "promote efficiency in production processes and reduce wasteful consumption in the process of economic growth, taking into account the development needs of developing countries."[41]

Although the concept of sustainable consumption has won acceptance, its definition remains contested. Jackson identifies several points of departure among definitions employed in various contexts, including the level of emphasis on consumers, lifestyles, and consumerism; differentiation between sustainable consumption and sustainable production; and differing views about the need to change the aggregate level of consumption.[42]

For present purposes, we can be satisfied with some relatively rough definitions. We can define consumption as the use of resources and energy either directly by end-users or to create goods and services for them. The term as used here includes both tangible products and the services produced by infrastructure such as buildings and public infrastructure. In other words, we are interested in consumption in the sense of consuming energy and resources, as assessed at the end of the supply process. We can assume that sustainability goals have been set through some process, setting some limit on the amount of carbon emissions or pollution or resource use. The question then is how society can promote changes in consumption by end-users that can assisting in attaining these environmental goals. These changes may involve modifying goods and

[40] Dan Sitarz and United Nations Conference on Environment and Development., AGENDA 21: The Earth Summit Strategy To Save Our Planet (1993).

[41] Id.

[42] Jackson and Michaelis, supra note 39, at 15.

services at the point of production, creating different infrastructure, or promoting improved consumer choices.

B. Research into Happiness and Wellbeing.

Some goods and services are simply needed for survival. Beyond that level, goods and services are useful to the extent they contribute to wellbeing. In the end, what people own matters less to them than how they feel; possessions count for less than quality of life.[43] Wellbeing is a multi-dimensional concept that includes objective factors such as health, but a key factor is subjective happiness. Efforts to develop metrics for quality of life involve both objective and subjective measures.[44] In this section, we explore these measures and what they tell us about the relationship between wealth and welfare.

1. Measuring Wellbeing.

Objective measures of wellbeing involve life circumstances such as health or personal activities such as recreation.[45] One important approach to objective wellbeing focuses on people's capabilities – the characteristics that define their potential actions (such as having healthy, functioning bodies or cognitive abilities and skills) and the freedom and information to make choices about the uses of those functionings.[46] The capabilities approach has become the basis for the UNDP's [the United Nations

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[43] Derek Bok, THE POLITICS OF HAPPINESS: WHAT GOVERNMENT CAN LEARN FROM THE NEW RESEARCH ON WELLBEING (2010), provides an excellent discussion of the policy implications of the growing body of research on happiness. A more technical but less recent overview of the research can be found in Daniel Kahneman, Ed Diener, and Norbert Schwartz, WELLBEING: THE FOUNDATIONS OF HEDONIC PSYCHOLOGY (1999).

[44] Stiglitz, Sen, and Fitoussi, supra note 13, at 144.

[45] Id. at 144.

[46] Id. at 151.

Development Programme] human development index."[47] Although the capabilities approach is important in thinking about overall societal welfare, it seems less relevant to thinking about consumption, except to the extent that some kinds of consumption allow a person to develop capabilities, such as exercise classes that improve health.

Psychologists are beginning to develop a deeper understanding of the factors that control wellbeing.[48] A substantial body of psychological research has emerged in recent years studying the subject of happiness.[49] Happiness has three separate aspects: a person's judgment about how life is going overall, the presence of positive feelings like joy, and the absence of negative feelings like sadness or depression.[50] Measurements of present emotions do not always coincide with measures of overall satisfaction with life, which correlate more with external circumstances such as marriage and household income.[51] Although some forms of consumption may translate into feelings of life accomplishment, such as home ownership, most consumption seems to be aimed

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[47] Id. at 153. For an example of the UNDP's work, see United Nations Development Programme, HUMAN DEVELOPMENT REPORT 2010 – THE REAL WEALTH OF NATIONS: PATHWAYS TO HUMAN DEVELOPMENT (2010). For a good introduction to the capabilities approach, see Martha Nussbaum, CREATING CAPABILITIES: THE HUMAN DEVELOPMENT APPROACH (2011).

[48] Carol Graham, HAPPINESS AROUND THE WORLD: THE PARADOX OF HAPPY PEASANTS AND MISERABLE MILLIONAIRES (2009), provides a concise overview of the research. Graham points out that the number of articles on happiness in the economics literature alone is now over a thousand. Id. at 2. For an introduction to this literature written for a more popular audience, see Ed Diener and Robert Biswas-Diener, HAPPINESS: UNLOCKING THE MYSTERIES OF PSYCHOLOGICAL WEALTH (2008). (Note that the senior author is a leading researcher in the field). For a discussion of this type of research from a more philosophical perspective, see Sissela Bok, EXPLORING HAPPINESS: FROM ARISTOTLE TO BRAIN SCIENCE (2010). (Note to editors: cites to Bok in this Article refer to a different book by Derek Bok.) Another body of research defines well-being in terms of attributes such as self-acceptance, positive relations with others, purpose in life, and sense of personal growth. See Carol D. Ryff, *Happingess is Evertyhing, or Is It? Exploration on the Meaning of Psychological Well-Being*, 57 J. PERSONALITY AND SOC. PSYCH. 1069 (1989); Carol D. Ryff and Corey Lee M. Keyes, 69 J. PERSONALITY & SOCIAL PSYCH. 719 (1995). Although this approach adds an important dimension to studies of well-being, the results do not seem to have developed to the point of addressing the issues discussed in this Article.

[49] John Bronsteen, Christopher Buccafusco, and Jonathan S. Masur, *Hedonic Adaptation and the Settlement of Lawsuits*, 108 COLUM. L. REV. 1516, 1526-1536 (2008).

[50] Stiglitz, Sen, and Fitoussi, supra note 13, at 146.

[51] Id. at 148. Unemployment also has particularly strong negative effects. Graham, supra note 48, at 18.

primarily at producing an immediate experience of pleasure or eliminating discomfort. For that reason, we will primarily focus on the studies of affect – how people feel about particular experiences or about their place in life.

The basic methodology in studies of subjective wellbeing is simply to ask people to rate their level of happiness or satisfaction with life, either in cross-sectional studies (asking a number of people at the same time), or longitudinal studies (asking a group of people repeatedly over some interval of time).[52] There are alternative ways of designing a metric, such as the amount of time that people experience positive or negative feelings, or their general level of satisfaction in life.[53]

People are not always good at forecasting how changes will affect their happiness. They tend to overestimate the permanent effect that life events will have on their happiness. For example, studies by psychologists show that increased wealth produces surprisingly modest improvements in happiness at the individual level; in contrast, education produces a greater sense of wellbeing than its cost.[54] People adapt more

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[52] Bok, supra note 43, at 5. Methodological issues, including alternative ways to phrase questions, are discussed in Graham, supra note 48, at 30-46.

[53] Bok, supra note 43, at 10. The correlation between questions about present affect and those about overall satisfaction with life is about 0.5. See Graham, supra note 48, at 9.

[54] Daniel Kahneman and Alan B. Krueger, *Developments in the Measurement of Subjective Wellbeing*. 20 J. OF ECON. PERSP. 3 (Winter 2007); Rafel Di Tella & Robert MacCulloch, *Some Uses of Happiness Data*, 20 J. OF ECON. PERSPECTIVES 25 (Winter 2006).; Graham, supra note 48, at 55. People with college-level education report greater happiness than others, even controlling for differences in incomes. Stiglitz, Sen, and Titoussi, supra note 13, at 165. For a discussion of the indirect benefits of education, see Philip Oreopoulos and Kjell G. Salavanes, *Priceless: The Nonpecuniary Benefits of Schooling*, 25 J. ECON. PERSP. 159 (Winter 2011) (contending that "scooling may affect preferences in a way that makes individuals more patient, more goal-oreinted, and less likely to engage in risky behavior," id. at 160). Orepoulos and Salavanes also report that:

> High school graduates with no additional schooling report being happy 8 percentage points more often than high school dropouts. College graduates report being happy 5 percentage point more often than high school graduates. . . The relationship weakens, but only by half [after controlling for income.]

Id. at 161.

readily to one-time events, either good (winning the lottery) or bad (losing a limb), than they do to the pain and anxiety associated with uncertainty.[55]

2. Wealth, Economic Growth, and Happiness.

The connection between wealth and happiness has received particular attention. This issue is relevant for our purposes because of its implications regarding the importance of economic growth and increased consumption in already affluent countries like the United States. The relationship between wealth and happiness turns out to be complex.[56] Levels of happiness in the United States have remained static in the post-World War II era despite major economic growth.[57] Similarly, despite China's rapid economic growth from 1995-2004 more than doubled per capita income, but did not result in any increase in reported happiness.[58] And, even more strikingly, in the three decades after 1958, Japanese per capita income "multiplied a staggering five-fold" with "no improvement" in average feelings of well-being.[59] A plausible explanation is that people compare their wealth to a societal norm in deciding whether they are well off, so they feel little satisfaction when everyone's income rises equally. An "increase in output itself makes for an escalation in human aspirations, and thus negates the expected positive impact on welfare."[60]

Cross-country comparisons give a different picture of the relationship between happiness and growth, perhaps in part because of the use of different measures of

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[55] Graham, supra note 48, at 143.

[56] For an extensive discussion of the data, see Richard A. Easterlin, HAPPINESS, GROWTH, AND THE LIFE CYCLE (ed. By Holger Hinte and Klaus F. Zimmerman, 2010).

[57] Bok, supra note 43, at 5.

[58] Kahneman and Krueger, supra note 54, at 15.

[59] See Easterlin, supra note 56, at 50.

[60] Id. at 14.

happiness. In cross-country studies, life satisfaction (rather than momentary happiness) varies roughly with the logarithm of GDP,[61] which means that that an exponential increase in GDP translates into a linear increase in average life satisfaction.

To see the implications of this, consider the simple case where average happiness simply equals the logarithm of average per capita GDP.[62] In that scenario, if the per capita GDP in a country is $20,000 per year, a ten-percent increase in the level of happiness would require per capita GDP twenty-seven times proportionately, from $20,000 to $53,000.[63] If the relationship between happiness and GDP takes a more complicated form, the numbers will be different, but the basic lesson is that there are sharply declining returns to increased wealth in terms of happiness. This should not be surprising: wealth is presumably only one input into producing individual happiness, so we should expect declining returns to scale as in any production process.

Based on a comprehensive review of the literature, Kahneman and Krueger conclude that "subjective wellbeing is not mainly a matter of income and consumption opportunities."[64] Although that seems to be correct, economists will be relieved by the existence of other evidence that wealth does have *some* effect on happiness. Individual wealth does correlate with improved happiness, and wealthier societies tend to have

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[61] Graham, supra note 48, at 149. The result holds for some happiness indicators, but not others such as "how often you smiled yesterday" or "does your life have purpose," which seem unrelated to income. Id.at 33.

[62] This corresponds to the assumption that, in a regression of the log of income versus happiness, the slope of the line is 1.0 and the intercept is 0.

[63] Here's the math. If Y is the level of happiness at the $20,000 and X is the amount of income required to produce at 10% increase in Y, then the logarithmic relationship Y = logX means that 1.1 = (1.1Y)/Y = logX/log20,000, or 1.1* log20,000 = logX. So $X = 20{,}000^{1.1} = \$53{,}843$. Note that this is true regardless of the base used for the logarithm (e.g., base 10 rather than some other base). As they say in commercials, however, "actual results may vary," depending on the slope and intercept of the regression in a particular study. The logarithmic relationship also implies that privation and poverty are particularly bad for happiness, because the slop of the log curve is high for low numbers.

[64] Graham, supra note 48, at 18.

higher assessments of happiness,[65] but as discussed earlier, these relationships seem to be subject to declining returns.[66] On the other hand, happiness does not seem to be affected much by income fluctuations.[67]

There is still considerable controversy about whether economic growth increases national happiness beyond a moderate threshold of prosperity.[68] Periods of high economic growth seem to cause unhappiness, perhaps because of the stress and uncertainty deriving from rapid change.[69] Moreover, part of the value of wealth is relative: "people of similar income levels are less happy when the incomes of those in a relevant reference group, ranging from neighbors to professional cohorts, to towns and cities, are higher."[70] Finally, people who view wealth as the most important tend to be less satisfied and happy than average,[71] so economic growth could decrease happiness to the extent that it relies on increased stress on economic motivators.

Although the relationship between economic growth and happiness is unclear, other factors are strongly associated with happiness.[72] Society might get greater increases in indvidual wellbeing by improving these other factors rather than focusing exclusively

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[65] Bok, supra note 43, at 5.

[66] See text accompanying notes 59-62, supra.

[67] Bok, supra note 43, at 11.

[68] Id.at 14.

[69] Graham, supra note 48 at 151.

[70] Id. at 158.

[71] Bok, supra note 43, at 15.

[72] The role of these social factors is explored in David G. Myers, *Close Relationships and Quality of Life*, in Kahneman, Diener, and Schwarz, supra note 43, at 374. There are some cross-cultural differences in the strength of these factors:

> It turns out that friendship and relatives matter more to the wellbeing of the average Latin American respondent than health, employment, or personal assets, and only slightly less than food security . . .

Graham, supra note 48, at 190.

on economic indicators. The studies are "remarkably consistent" in identifying these other factors.[73] Self-perceived health (which does not always correlate with objective measures) and religious observance are both associated with happiness, as is job satisfaction (especially not losing one's job).[74] So is having a democratic government, strong individual rights, and tolerance of minority groups.[75] Among American and French women, walking is seen as on balance the most pleasurable activity, followed closely by sex and then by exercise.[76] Social life is also important: marriage,[77] having friends, participating in civic groups, and performing acts of kindness.[78] The empirical evidence clearly "link[s] higher levels of social capital to outcomes that are, on balance, positive for quality of life and economic progress."[79] Indeed, "all measures of social connections are significantly correlated with life satisfaction . . ."[80] The message is the buying less does not necessarily mean having a poorer quality of life, given the importance of other factors.

If consumption is not central to quality of life (at least above some minimal level of need), neither is production. On the whole, the most pleasurable experiences do not

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[73] Id. at 49. A number of the studies are reviewed in Michael Argyle, *Causes and Correlates of Happiness*, in Kahneman, Diener, and Schwarz, supra note 43, at 353.

[74] Bok, supra note , at 17-22.

[75] Bok, supra note , at 22-23.

[76] See Stiglitz, Sen, and Fatoussi, supra note 43, at 48.

[77] As one indicator of the value of marriage, it would take roughly a $100,000 pay raise to offset the level of unhappiness caused by divorce. Graham, supra note 48, at 12.

[78] Bok, supra note 43, at 17, 19-20, 22. Friends may not only be a direct source of gratification but may assist in dealing with negative events. For instance, "women with even a single close friend are better able to tolerate various hardships that are otherwise associated with depression." Nancy Cantor and Catherine A. Sanderson, *Life Task Participation and Wellbeing: The Importance of Taking Part in Daily Life*, in Kahneman, Diener, and Schwarz, supra note 43, at 235.

[79] Graham, supra note 48, at 189.

[80] Id. at 191. There are notable regional variations in social capital, with the Southern states having low levels, while New England, the Great Plains, and Rocky Mountain states having high levels. Stiglitz, Sen, and Fitoussi supra note 13, at 187.

derive from work – people get the most satisfaction from social activities, even though working may be important for their self-esteem.[81] Interestingly, the happiest people tend not to be super-achievers; apparently, whatever drives people to the highest levels of achievement does not sit well with personal satisfaction.[82] In general, materialism is not conducive to wellbeing.[83] Thus, most of what determines happiness is non-economic.

In short, according to the research, neither production or consumption has an intrinsic connection with personal satisfaction. A heavy focus on economic growth as a goal in its own right loses track of alternative ways for social policy to promote happiness, because economic activities can conflict with other conditions conducive to wellbeing – for instance, by reducing time available for connections with friends and family. For this reason, measuring welfare in purely economic terms may be quite misleading.

How reliable is this research? As with any area of social science research, it would be a mistake to expect the precision or reliability of high-energy physics.[84] Reported happiness can vary over short periods and can be influenced by the weather or other minor events.[85] Nevertheless, the measurements are reasonably good. Self-reported happiness correlates with behaviors like smiling and with peer appraisals of an

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[81] Bok, supra note 43, at 29, 33.

[82] Id.at 51.

[83] J. Ian Norris and Jeff T. Larsen, *Wanting More Than You Have and Its Consequences for Wellbeing*, JOURNAL OF HAPPINESS STUDIES (doi 10.1007/s10902-010-9232-8) (2010).

[84] There are number of methodological pitfalls, including asking questions about happiness after other items on a survey that could skew responses. See Graham, supra note 48, at 9-10.

[85] See Kahneman and Krueger, supra note 54, at 6-7. Presumably, much of this "noise" averages out over larger groups or time periods. Kahneman and Krueger also report significant correlation with neurological evidence. Id. at 7-8.

individual's happiness.[86] Moreover, the major patterns in the results are quite consistent across studies, which provides some additional grounds for confidence:

> In exploring happiness in a number of contexts around the world, we find a remarkable amount of consistency in the socio-economic and demographic determinants of happiness. The *modest* differences that we find across countries and regions are usually explained by *major* differences in economic contexts or education and labor market structures.[87]

For our purposes, it is these major patterns that matter, not the nuances and ambiguities of the research results. It is important to note, however, that much of the research documents correlations but does not purport to prove causation. Nevertheless, the causal connections seem plausible and are consistent with the correlations. In the next section, we will consider the implications of these findings for consumption policies.

A skeptical economist might argue that this literature is irrelevant to social policy because economic growth increases the set of opportunities available to individuals, who will choose within that expanded set so as to improve their own welfare. There is some merit to this argument, but there are also reasons not to take it to its logical conclusion. First, it requires unrealistic faith in individual rationality to believe that individuals invariably make choices that increase their own wellbeing. Second, individual choices may be shaped in part by comparisons with others, leading to the possibility of a Red Queen race among individuals to increase consumption merely to retain their existing status. Finally, some factors shaping individual choices involve public goods (the availability of parks or information), infrastructure investments (public transportation), or coordination of multiple decisions (land use planning). In short, we should not assume that if we just give people as much money as possible to spend, individual happiness will

[86] Bok, supra note 43, at 38.

[87] Graham, supra note 48, at 84.

take care of itself. Consistent with individual liberty, the government may be able to take steps to promote happiness without using increased wealth as a tool (unless of course, "wealth" is simply *defined* to include all objective and subjective measures of welfare.)

Cost-benefit analysis (CBA) is central to current agency decisions but its legitimacy is sharply contested. For the past three decades, regulatory agencies like EPA have been required to perform cost-benefit analyses and employ a presumption in favor of using the outcome of the analysis as the basis for their ultimate decision.[88] Critics such as Frank Ackerman and Lisa Heinzerling maintain that "cost-benefit analysis promotes a deregulatory agenda under the cover of scientific objectivity." [89]

The happiness literature raises serious questions about the utility of cost-benefit analysis as a decision method for policymakers. The strongest claim supported by the evidence seems to be that one input to well-being is wealth but the association is weak and subject to diminishing returns. Making this metric the dominant factor in decisions seems questionable unless we assume the direct effects of government policy on other dimensions of well-being.

Deciding on a major policy based solely on whether it increases GDP, particularly for a country that is already affluent, is somewhat like buying a house based solely on square-footage – this may be an easily quantified measure and a desirable for residents (at

[88] Regulatory review takes place within the Office of Information and Regulatory Affairs (OIRA). For a description of the development of OMB's role in regulatory oversight, along with some useful suggestions for improving cost-benefit analysis, see Winston Harrington, Lisa Heinzerling, and Richard D. Morgenstern (editors), REFORMULATING REGULATORY IMPACT ANALYSIS (2009); Richard Revesz and Michael Livermore, RETAKING RATIONALITY: HOW COST BENEFIT ANALYSIS CAN BETTER PROTECT THE ENVIRONMENT AND OUR HEALTH (2008); Daniel H. Cole, *"Best Practice" Standards for Regulatory Benefit-Cost Analysis*, 23 RES. IN LAW & ECON. 1 (2007). Matthew D. Adler and Eric A. Posner, COST-BENEFIT ANALYSIS: LEGAL, ECONOMIC, AND PHILOSOPHICAL PERSPECTIVES (2000), collects papers reflecting the spectrum of views about CBA and its validity.

[89] Frank Ackerman and Lisa Heinzerling, PRICELESS: ON KNOWING THE PRICE OF EVERYTHING AND THE VALUE OF NOTHING 8-9. (2004). See also id. at 12 ("[c]loaked in the language of scientific objectivity, economic arguments have repeatedly played a partisan role").

least within certain ranges), but it fails to capture qualities like location, design, upkeep, and style. Advocates of cost-benefit analysis point out that it can be adjusted to monetize non-economic attributes.[90] No doubt we could adjust square footage measures to provide area credits for features like good location, so that we might say that for a given consumer considering a given house, the handsome wood floors are equal to an additional 237 hundred square feet of floor space. Nevertheless, picking a house based on some metric like "aestquality-adjusted square footage" seems an obtuse way to proceed, particularly since the adjustment will vary on an individualized basis.

This analogy may actually be too favorable to cost-benefit analysis. Recall that under Red Queen hypothesis, the increased happiness in income gains to one individual are balanced by the corresponding decline of happiness by others. If this theory turns out to be correct, using increased wealth as the standard for evaluation of a project is more like thinking that you have made a house bigger by moving an interior wall – true, it may make one room look a lot bigger, but only by correspondingly shrinking another.[91]

Advocates of cost-benefit analysis are on stronger ground in arguing that subjective well-being should not be the exclusive measure of social welfare, and they are quite possibly right that economic wealth is one component of well-being (contrary to the Red Queen theory). At that point, however, there seems to be a strong argument for judging outcomes based on a broader range of welfare measures,[92] as discussed in

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[90] See Matthew Adler and Eric A. Posner, *Happiness Research and Cost-Benefit Analysis*, in Erica A. Posner and Cass R. Sunstein, LAW AND HAPPINESS 282-283 (2010).

[91] Adler and Posner, id. at 285, argue that cost-benefit analysis can be saved by counting the decreased happiness of others as an externality and adjusting accordingly. But why measure social welfare with an index (total societal income) that turns out (if the Red Queen theory is right) to be irrelevant to welfare?

[92] For a discussion of some of these other measures, see Martha C. Nussbaum, *Who Is the Happy Warrior? Philosophy Poses Questions to Psychology*, 37 J. LEG. STUDIES 81 (2008).

subsection 3 below, rather than trying to collapse multiple dimensions of social welfare into a single dollar metric.

C. Consumerism and Happiness.

One strategy for controlling the environmental burden of consumption would be to cap or even reduce the current level of consumption. Although it may seem almost un-American to suggest that we should use fewer commodities and less energy, the idea deserves closer attention.

1. Reconsidering economic growth.

The idea of abandoning economic growth as a compelling goal may seem startling, but it deserves further consideration.[93] Research on happiness raises questions about whether economic growth should be a dominant national goal in countries have already achieved reasonable prosperity, as opposed to nations that still have huge numbers of the desperately poor. Leading economists have often viewed the desirability of growth as self-evident.[94] In contrast, some leading environmentalists believe "the rising tide of goods and services is ruining the environment, creating urban sprawl, choking our highways with cars, and threatening to inflict grave hardships on future generations."[95]

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[93] It bears emphasis that this Article is concerned with affluent societies like the United States, not with the much different situation of developing countries. Moreover, within the United States, the issue is whether continual growth in aggregate consumption may not be a valid priority, not whether consumption should be spread more evenly among the population.

[94] Bok, supra note 43, at 66.

[95] Id. at 66. As Wilk has pointed out, consumption can serve many different individual, social, and cultural purposes. Richard Wilk, *Consumption, Human Needs, and Global Environmental Change*, *12* GLOBAL ENV. CHANGE 12 (2002). Making fundamental changes in the ways that people view consumption will be correspondingly complex.

Our society has often been criticized for an excessive concentration on consumption. Thomas Princen has written extensively on *sufficiency* as an alternative to consumerism.[96] Jessie H. O'Neill, a psychotherapist, defines affluenza as:

> The collective addictions, character flaws, psychological wounds, neuroses, and behavioral disorders caused or exacerbated by the presence of, or desire for money/wealth… In individuals, it takes the form of a dysfunctional or unhealthy relationship with money, regardless of one's socio-economic level. It manifests as behaviors resulting from a preoccupation with -- or imbalance around -- the money in our lives.[97]

From quite a different perspective, Pope Benedict has spoken of "a need . . . to move beyond a purely consumerist mentality."[98] He also observed:

> It is becoming more and more evident that the issue of environmental degradation challenges us to examine our life-style and the prevailing models of consumption and production, which are often unsustainable from a social, environmental and even economic point of view. We can no longer do without a real change of outlook which will result in new life-styles, "in which the quest for truth, beauty, goodness and communion with others for the sake of common growth are the factors which determine consumer choices, savings and investments."[99]

No doubt a number of other secular and religious figures share these views, not to mention some private individuals.

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[96] Thomas Princen, THE LOGIC OF SUFFICIENCY 11 (2005). Princen defines sufficiency as "a sense of 'enougness' and 'too muchness,' a quality where concern for excess is paramount in the life of an individual, an organization or a nation." Id. at 18. He adds:

> [T]he effective decision maker is precisely the one who has the wits to engage the interrelatedness, to avoid excess, to take long-term impacts and displaced costs into account, and to avert irretrievable diminution of ecological integrity. . . [T]he sufficient person exercises restraint . . . because such principles are consistent with a world that is ultimately unknowable and uncontrollable, a world where cause-and-effect relationships are deeply problematic, a world where limited predictability, system surprise, threshold, and synergistic effets are the norm, not the exception.

Id. at 18-19. "Prudence" might be another name for this attitude.

[97] Quoted in Clive Hamilton and Richard Denniss, AFFLUENZA: WHEN TOO MUCH IS NEVER ENOUGH 7 (2005).

[98] Pope Benedict XVI, *Message Of His Holiness Pope Benedict XVI For The Celebration Of The World Day Of Peace, 1 January 2010 -- If You Want To Cultivate Peace, Protect Creation* (2010), available at http://storico.radiovaticana.org/en1/storico/2009-12/342292_full_text_of_pope_benedict_xvi_s_message_for_the_2010_world_day_of_peace.html.

[99] Id.

Yet moving to a no-growth society could clearly be problematic in a number of ways, including the seemingly entrenched place of consumption as a personal goal for Americans.[100] It is hard to gainsay the perception that "Americans take their freedom to consume very seriously and they do not like it when people suggest that they are going to have to give up some comforts and luxuries."[101] Ending growth might also create a more zero-sum politics that could have unfortunate effects, and could also increase unemployment (a significant source of individual unhappiness.) Thus, even if it would be desirable (which is surely controversial), abandoning economic growth as a societal goal would be a tricky endeavor. Yet, at least a shift in emphasis seems warranted. Derek Bok's conclusion seems sensible:

> Whatever research eventually shows concerning the effects of income and possessions on happiness, it surely does not suggest that money and the goods and services it buys are the dominant source of wellbeing. As a result, while continued growth may be needed for the foreseeable future, insisting on having the economy grow "as rapidly as possible" is harder to justify, especially when it becomes a reason for opposing sensible policies that could brighten the lives of large numbers of people.[102]

Thus, even if zero growth is not a reasonable goal, maximizing the rate of growth is a dubious focus for social policy.

If only for political reasons, a radical shift toward a less consumption-oriented society does not seem to be a plausible policy goal in the immediate future, whether or not it would be desirable in some broad sense. However, we can begin to think about

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[100] Bok, supra note 43, at 68-78. The essays in Michael Maniates and John M. Meyer, THE ECONOMIC POLITICS OF SACRIFICE (2010), suggest, however, that we should not assume that people can never be motivated to sacrifice for others and find satisfaction in doing so.

[101] Richard Wilk, *Consumption Embedded in Culture and Language: Implications for Finding Sustaianbility*, 6 SUSTAINABILITY: SCIENCE, PRACTICE, & POLICY 38, 47 (2010), available at http://sspp.proquest.com. Wilk adds that "people think about their bodies, morality, and personal conduct, families, and relationships with the government through consumption-related metaphors." Id. at 46.

[102] Bok, supra note 43, at 78.

moves that would deemphasize consumption as a path to wellbeing and that would gradually strengthen other modes of gratification.

Assuming that improving social welfare is an appropriate governmental goal, subjective happiness seems to be at least one component of welfare. This does not necessarily mean that the government should have a free hand to engage in whatever policies it thinks will make people happier, regardless of their own preferences.

Nevertheless, government intervention seems warranted at least when collective actions problems or externalities block individual efforts to achieve preferred outcomes, and probably when clearly defined cognitive shortcomings or poor impulse control prevent individuals from adopting actions that would make them happier. The strategies discussed in this Article are easy cases for intervention, because they are designed to remedy physical externalities such as carbon emissions. Increased happiness is a side-benefit but is not needed to justify the government's actions.

2. Measuring wellbeing at the national level.

The U.S can also be begin to measure its state of wellbeing in more sophisticated ways that go beyond conventional measures such as GDP and employment. France has already begun to take some steps in that direction, on the advice of leading economists.[103] Similarly, "[t]he UK government is poised to start measuring people's psychological and environmental wellbeing, bidding to be among the first countries to officially monitor happiness."[104] Prime Minister David Cameron reportedly plans to make the results

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[103] Joeph Stiglitz, Amartya Sen, and Jean-Paul Fitoussie, *Report by the Commission on the Measurement of Economic Performance and Social Progress*. Available at http://www.stiglitz-sen-fitoussi.fr/documents/rapport_anglais.pdf

[104] Allegra Stratton, Happiness index to gauge Britain's national mood, THE GUARDIAN, Nov. 14, 2010, available at **http://www.guardian.co.uk/lifeandstyle/2010/nov/14/happiness-index-britain-national-mood**

central to government planning.[105] The goal is "for respondents to be regularly polled on their subjective wellbeing, which includes a gauge of happiness, and also a more objective sense of how well they are achieving their 'life goals'."[106]

Even the wellbeing researchers themselves agree that "results based on happiness surveys should be treated critically and cautiously."[107] It would be at least premature to announce a new unified metric of wellbeing or to advocate radical policy changes such as abandoning growth as a goal based on hedonic psychology. But we do know that traditional economic measures of wellbeing are quite incomplete and to identify some of the important missing factors. In particular, we can begin to see ways of making trade-offs between consumption and other sources of satisfaction, some of which are more environmentally benign.

III. Reducing Resource Usage: Energy, Water, and Food

The happiness research indicates that quality of life depends only partly (at most) on the kind of command over resources that is embodied in money.[108] The incomplete connection between happiness and wealth creates space for reducing the burden of consumption on the environment while providing equal or greater quality of life – a kind

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[105] Id.

[106] Id.

[107] Di Tella and MacCulloch, supra note 54, at 43.

[108] Perhaps this is not entirely utopian. Thomas Princen has assembled case studies of situations in which a choice has been made to eschew growth and chosen to respect environmental constraints:

> An urban neighborhood eschews the car, a timber company holds back on its harvests, two industrial countries find that persistent toxics too much, and international society bans ozone-depleting substances. Unusual cases, perhaps but rather sensible, one might think. . . Each instance may represent a trivial portion of that country's overall economy. . . But they are harbingers of a different economy, I contend, one that puts ecological and social constraint with a long-term view at the center of economic and political life.

Princen, supra note 96, at 7.

of happiness dividend. Other strategies, particularly in terms of energy efficiency, may actually improve the consumer's economic position. This is not to say that individuals will never have to sacrifice in the name of sustainability, only that such sacrifices may not be needed as frequently as many people would assume.

Essentially, three pathways to more sustainable consumption exist. First, people could consume fewer goods and services, finding more satisfaction from non-market activities by spending more time on friends, exercise, and family. A substantial move in this direction would require major changes in American culture and society, but at least over the long term may be a possibility. Note that while this may seem a "liberal" goal in terms of the American political spectrum, it may also be attractive to some religious conservatives as a step toward spirituality. Second, goods and services could be redesigned to have smaller environmental footprints. This includes not only consumer goods such as refrigerators but also green building for houses and apartments. Third, consumers choices could change, so that people would select goods with smaller footprints or would reduce their use of automobiles by using public transportation or biking or walking. Some of the changes require infrastructure such as improved public transit or community designs that reduce the need for driving. Part A explores strategies to reduce the environmental footprint of energy consumption. These strategies in effect create wealth by reducing waste. Parts B and C contain similar examinations of household water use and food consumption.

An old joke about economists goes as follows: Two economists are walking down the block when one of them spots a hundred-dollar bill on the sidewalk. He is about to bend down to pick up the money, when the other economist says, "Forget it. If

there were really a hundred-dollar bill down there, the market would already have found it." As we will see below, there are actually quite a few hundred-dollar bills lying on the sidewalk in the form of reduced costs for energy, water, and food. Many of the unrealized benefits are monetary, but they can also take the form of improved health.

A. Energy Use

Energy use is linked most obviously with climate change, given the heavy reliance of much of the United States on fossil fuels. Fossil fuels are also a source of conventional pollutants, and resource extraction and transportation can cause other kinds of environmental harm. Much can be done to reduce the harmful impacts of energy use through renewable energy measures, but reducing the amount of energy consumption can be more cost effective and easier to implement.

Individual energy consumption – including household heating and cooling as well as non-business transportation – creates roughly one-third of U.S. energy use and carbon emissions.[109] It would be feasible to reduce these emissions by twenty percent in a decade: there is a lot of low-hanging fruit yet to be picked.[110] In addition, households are major sources for pollutants that cause local ozone problems and toxic pollution such as mercury releases.[111] Since "'[p]roducts have environmental impacts throughout their lifecycle, from extraction, transport, and production, to distribution, use, and disposal,'

[109] Michael Vandenbergh, *Implementing the Behavioral Wedge: Designing and Adopting Effective Carbon Emissions Reduction Programs,* 40 ENVIRONMENTAL LAW REPORTER 10547, 10549 (2010).

[110] Id. at 10547. Several of the principles for designing effective programs seem intuitive (e.g., "prioritize high impact actions" and "provide credible information at points of decision"). Id. at 10551. Nevertheless, some existing programs violate one or more of those principles. Id. at 10552-10554.

[111] See Babcock, supra note 14, at 120-121.

the environmental impact of typical individual acts of consumption, such as the purchase of a pair of jeans or a pair of leather boots, can be significant."[112]

1. Opportunities for energy efficiency.

Energy efficiency presents a significant opportunity for low-cost energy and emissions savings by consumers. For example, a recent report found that twenty-three percent of projected demand for end-use energy consumption could be achieved through energy efficiency improvements.[113] Another study estimates that "behavioral measures targeting household conservation and efficiency could reasonably be expected to reduce U.S. emissions by over seven percent by 2020," an amount greater than the total emissions of France.[114]

Energy conservation may actually be in the economic self-interest of consumers, because most conservation measures have relatively short payback periods. But cognitive habits and predispositions seem to lead consumers to undervalue those economic benefits. Thus, regulatory interventions may be warranted.[115]

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[112] Katrina Fischer Kuh, Capturing Individual Harms (2011), available at http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1785743 (forthcoming Harvard Environmental Law Review, 2011).

[113] Unlocking Energy Efficiency In The U.S. Economy 165 1 (2009), www.mckinsey.com/USenergyefficiency.

[114] Michael P. Vandenbergh, Amanda R. Carrico, and Lisa Schultz Bressman, *Regulation in the Behavioral Era*, 95 MINN. L. REV. 715, 765 (2011).

[115] Noah M. Sachs , *Greening Demand: Energy Consumption And U.S. Climate Policy*,19 DUKE ENV. L. & POL'Y F. 295, 306-312 (2009). For example, a study of hybrid car purchases found that consumers had an implicit discount ate of 14-28% depending on the vehicle's assume useful life – an extraordinarily high amount compared with the returns accepted on other forms of investment. Kelly Sims Gallarher and Erich Muehlegger, *Giving Green to Get Green? Incentives and Consumer Adoption of Hybrid Vehicle Technology*, 61 J. ENV. ECON. & MNGT. 1, 11-12 (2011). Energy conservation also may well be the most cost-effective way of reducing carbon, at least in the short-run:

> According to the International Energy Agency, an additional $1 spent on more efficient electrical equipment, appliances, and buildings avoids, on average, $2 in investment in energy supply. For planning purposes, U.S. government regulators estimate the cost of efficiency improvements at three cents per kilowatt hour saved, and a widely cited 2007 report by McKinsey & Co. identified about a dozen energy efficiency improvements in the residential, commercial, and industrial

Improved product standards are another route to reducing the impact of consumption on energy use. Federal law requires the Department of Energy (DOE) to create standardized test procedures for energy efficiency, while the Federal Trade Commission (FTC) adopts corresponding labeling rules.[116] After considerable prompting from Congress, litigation, and the White House,[117] DOE has also established standards for refrigerators, central air conditioners, furnaces, dishwashers, and various types of lighting.[118] These standards have reduced U.S. electricity use by seven percent.[119]

State appliance standards are normally subject to federal preemption, but the Department of Energy ("DOE") can waive preemption so that states can provide for higher energy conservation standards than are federally mandated.[120] At least ten states have set such standards.[121] California estimates that by 2020 its standards will have saved consumers $3 billion in utility bills for power that would otherwise have been consumed

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> sectors that could reduce greenhouse gas emissions at negative marginal cost--at a net savings to the economy. In contrast, new coal-fired plants ordered in 2009 are likely to sell electricity for ten to thirteen cents per kilowatt hour, and new nuclear power plants are likely to sell electricity for fifteen to twenty-one cents per kilowatt hour, based on projected capital costs.

Id. at 303.

[116] John Derhnbach and Marianne Tyrrell, Federal Energy Efficiency and Conservation Laws 12 (2010), available at http://ssrn.comabstract=1684201.

[117] Id. at 14.

[118] Id. at 13.

[119] Derhnbach and Tyrell, supra note , at 14.

[120] For an argument for a more extensive state role, see Alexandra B. Klaas, *State Standards for Nationwide Products Revisited: Federalism, Green Building Codes, and Appliance Efficiency Standards*, 34 HARV. ENV. L. REV. 335 (2010). For example, Klaas reports, an Albuquerque energy conservation ordinance was invalidated because the ordinance allowed the option of complying through LEED certified building components. Id. at 355. In the court's view, a building that complied with the ordinance through this route but then decided to revert to the less efficient components allowed by federal law would be "penalized" by having to make other changes in the building to compensate for the increased emissions. Id. at 355-356.

[121]David Hodas, *State Initiatives*, *in* GLOBAL CLIMATE CHANGE AND U.S. LAW 364 (Michael B. Gerrard ed., 2007).

and that it will eliminate the need for three new power plants.[122] But consumers still need to be willing to buy more efficient products rather than retaining older ones. And other efficiency measures relate to consumer behavior rather than purchasing new or different products.

2. Improving consumer decisions.

Another opportunity for reducing energy use comes at the consumer level. Individuals make decisions about energy use every single day. Some of these decisions occur infrequently, but have long-term energy-use implications, e.g., weatherizing a house or buying a fuel-efficient vehicle. Some decisions occur regularly, e.g., using cold water to wash clothes or reducing highway-driving speeds from 70 to 60 miles per hour, and while each of these individual decisions might only save a small amount of energy, the cumulative savings over many months and years can be substantial.[123] Other decisions pertain to equipment settings, e.g., raising the thermostat to 78 °F during the summer and lowering it to 68 °F during the winter, and equipment maintenance, e.g., getting regular vehicle tune-ups.[124] People tend to underestimate the amount of energy consumed by different activities, as well as the overall potential for energy savings available from both conservation and efficiency efforts.[125]

Better information can lead to more sustainable consumer choices. The point is not

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[122] Id.

[123] For a discussion of how consumers could reduce home energy use and of policies to encourage such a shift, see Czarnezki, supra note 15, at 43-45.

[124] Thomas Dietz et al., *Household actions can provide a behavioral wedge to rapidly reduce US carbon emissions*, 106 PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES 18452 -18456 (2009). See also, Gerald T. Gardner & Paul C. Stern, *The Short List: The Most Effective Actions U.S. Households Can Take to Curb Climate Change*, 50 ENVIRONMENT, 2009, at 12-24.

[125] Shahzeen Z. Attari et al., *Public perceptions of Energy Consumption and Savings*, 107 PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES 16054 -16059 (2010).

to indoctrinate the public with environmentalism, but to provide information and show how desirable conduct connects with personal norms. For instance, many people erroneously believe that they need to idle their motor vehicle's engine for several minutes when starting in cold weather or that idling is more efficient than stopping and restarting the engine. [126] In 2002 Americans released an estimated 2.9 million tons of carbon dioxide from idling while waiting.[127] Similarly, many homeowners are unaware of the energy inefficiencies in their properties, the opportunities for long-term cost savings through retrofits, and the best retrofit methods for achieving financial benefits.[128] The result of this lack of information is avoidable, wasteful consumption.

Congress has subsidized weatherizing for low-income households, assisting over six million households to reduce their energy bills.[129] Building owners need easy access to data about the typical retrofit needs for their building's age and type, as well as for their neighborhood and climate. Subsidies can only work if homeowners have the information to make effective use of them. Geographic information systems (GIS) can convey this information effectively to homeowners. The more standardized the retrofit recommendations, the easier for building owners to decide to begin the process.[130]

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[126] Id. at 1701-1702.

[127] Id.

[128] Center for Law, Energy & the Environment, Berkeley Law School, Center (CLEE), and Environmental Law Center & Emmett Center Climate, UCLA Law School, SAVING ENERGY: HOW CALIFORNIA CAN LAUNCH A STATEWIDE RETROFIT PROGRAM FOR EXISTING RESIDENCES AND SMALL BUSINESSES (2010). Available at http://www.law.berkeley.edu/files/Saving_Energy_May_2010(1).pdf

[129] Dehrnbach and Tyrrel, supra note 116, at 21-22.

[130] The mapping data provided by these assessments could help policy-makers target the most cost-effective areas for retrofit programs. For example, state and local governments could focus retrofit incentives and financing programs on areas with older and inefficient homes in inland zones that have significant temperature fluctuations.

Thus, we need better methods for communicating key information in forms that consumers will find relevant. Doing so will require more research into how consumers process information and make choices, combined with exploration of new technologies for gathering and delivering consumer-relevant information.

B. Water Use.

A related sustainability issue concerns water usage. For instance, California faces an on-going water crisis that will only worsen as climate change progresses. Although most of the state's water use is agricultural, over half of the water consumption in Southern California is residential. Much of that water use could be reduced through increased reliance on gray water.[131] Expanding the use of low-flow fixtures and efficient washers would also make a major contribution. The California Plumbing Code now allows only wastewater from showers, bathtubs, bathroom sinks, and clothes washers to be treated on-site for non-drinking uses. Laundry and shower water can be used for subsurface or covered irrigation without treatment. However, the capacity for gray-water recycling in the South Coast is estimated at 900 million gallons per day.[132]

California is not alone in pursuing such initiatives. Texas and Colorado are showing interest in rainwater collection, as have a number of cities.[133] In Australia, the government provides information about commercial gray water systems online. Australia

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[131] UCLA Institute of the Environment and Sustainability, GREYWATER – A POTENTIAL SOURCE OF WATER (2009). Available at http://www.ioe.ucla.edu/reportcard/article.asp?parentid=4870; R.F. Michael Snodgrass, *Greywater – The Resue of Household Water: A Small Step Toward Sustainable Living and Adaptation To Climate Change*, 22 GEO. INT'L ENV. L. REV. 591 (2010).

[132] Id. Many other resources on water conservation can be found on the Pacific Institute's website, http://www.pacinst.org/ .

[133] Patricia Salkin, *Sustainability and Land Use Planning: Greening State and Local Land Use Plans and Regulation to Address Climate Change Challenges and Preserve Resources for Future Generations*, 34 WM. & MARY ENV. L. & POL'Y REV. 121, 164-165 (2009).

has also established a system of funding and rebates to encourage the adoption of gray-water recycling and rainwater storage.[134] Florida and Texas law encourage or allow local governments to consider xeriscape (non-irrigated) landscaping to reduce water usage, and cities have adopted xeriscape ordinances in those states and elsewhere.[135] In addition, consumers need better information about their water use, akin to smart metering of electricity, and better conservation incentives.

Various methods exist to promote conservation awareness and behavior change in urban consumers.[136] Green building can also promote water conservation.[137] An emerging issue relating to urban water conservation is the link between urban food habits and water withdrawn in agriculture.[138] The water footprint of grains and vegetables is several times lower than that of meat.[139] In terms of carbon, shifting one day a week from meat or diary products to chicken, fish, or eggs is equivalent to reducing driving by around 750 miles per year.[140] Dietary change could be an effective water conservation strategy, but is not usually treated as such. As we will see in the next section, diet has other implications for sustainability as well.

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[134] Id.

[135] Salkin, supra note 133, at 166.

[136] See Peter H. Gleick et al., Pac. Inst., *Waste Not, Want Not: The Potential Urban Water Conservation in California* 16-18 (2003), available at http://www.pacinst.org/reports/urban_usage/waste_not_want_not_full_report.pdf

[137] See J. Cullen Howe, *Overview of Green Buildings*, 41 ENV. L. REP. 10043, 10046-10047 (2011) (also pointing out that new buildings can burden municipal sewer systems and increase stormwater runoff that can aggravate flood risks).

[138] Water used in food production constitutes a virtual water transfer when the food is shipped elsewhere. Daniel Zimmer and Daniel Renault, Virtual Water In Food Production And Global Trade Review Of Methodological Issues And Preliminary Results, available at http://www.fao.org/nr/water/docs/VirtualWater_article_DZDR.pdf.

[139] See http://www.treehugger.com/files/2009/06/from-lettuce-to-beef-whats-water-footprint-of-your-food.php

[140][140] Czarneski, supra note 15, at 86.

C. Diet and Food Systems

Our food system is a major source of environmental problems, including a substantial source of greenhouse gases.[141] Not only the amount of food and the way it is produced, but also the balance between different food groups, contributes to the problem.[142] Every year, Americans slaughter more than ten billion animals for food, over fifteen percent of the global total, while meat production in turn accounts for surprisingly large greenhouse gas emissions.[143]

Overconsumption of food is an increasing problem in America.[144] Between the 1960s and the beginning of this century, the proportion of the U.S. population suffering from obesity increased from thirteen percent to thirty-five percent.[145] Recipes that appeared in the same cookbook from 1936 to the present increased the number of calories per serving by a startling average figure of sixty-three percent.[146] The Centers for Disease

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[141] Sustainable Development Commission and National Development Commission [U.K.], DOUBLE DIVIDEND? PROMOTING GOOD NUTRITION AND SUSTAINABLE CONSUMPTION THROUGH HEALTHY SCHOOL MEALS 16-23 (2005), available at http://www.sd-commission.org.uk/publications/downloads/Double_Dividend.pdf.

[142] According to a British government report:

> Many studies show that meat and dairy products, when produced using modern intensive methods, have the highest environmental impacts of all food groups. These impacts reflect the resources (fertiliser, pesticides and energy) required to produce and transport animal feed in the first place, the low efficiency with which animals convert that feed to milk or meat, the high water needs of cattle, slaughterhouses and processing factories, and the waste produced by farm animals. There are also lesser impacts associated with overgrazing when this occurs, which reduces soil carbon and biodiversity.

Sustainable Development Commission and National Development Commission [U.K.], supra note , at 17.

[143] See Czarneski, supra note 15, at 86.

[144] For a general discussion of the problem and a survey of potential interventions, see David H. Freedman, *How to Fix the Obesity Crisis*, SCIENTIFIC AMERICAN 40 (Feb. 2011).

[145] Jay Bhattacharya and Neeraj Sood, *Who Pays for Obesity?*, 25 J ECON. PERSP. 139 (Winter 2011). They conclude that there is no pooling of risks between obese and non-obese workers in employer-provided health plans because employers compensate by paying obese workers less, id. at 150, but when individuals become old enough for medicare, the risks are pooled across the entire population. Id. at 143. However, they suggest, "Another way in which the obese 'subsidize' the thin is, presumably, by dying earlier and not claiming as much in Social Security benefits." Id. at 154.

[146] See Marc Ambinder, *Beating Obesity*, THE ATLANTIC 72, 76 (May 2010).

Control and Prevention estimates that obesity causes 200,000-300,000 premature deaths annually.[147] Over-consumption food poses a particular problem in a world that will be struggling to feed an additional two to three billion people by mid-century.[148] Current approaches are unsatisfactory: as one journalist says, "[t]o describe existing federal policies and regulatory approaches on obesity as a patchwork is an insult to quilts everywhere."[149]

Steve Sugarman has an innovative proposal for enlisting firms to help address some dietary issues.[150] His proposal is interesting in its own right, because diet has significant sustainability implications, but also as a model that might be applied elsewhere. Under this proposal, a soft-drink company might be given a certain childhood obesity target, which it could attain by "direct action such as reducing the size of its standard soda can, changing its ads to make them less appealing to minors, or encouraging minors to drink Diet Coke rather than the calorie-laden variety."[151] Alternatively, Coke might find that it is more efficient to help in "establishing more bike paths, subsidizing physical education classes in schools, providing grants for school

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[147] Peter Calthorpe, URBANISM IN THE AGE OF CLIMATE CHANGE 31(2011).

[148] See Smith, supra note , at 35; John Parker, *The 9 Billion-People Question*, THE ECONOMIST, Feb. 25, 2011 (available at http://economist.com/node/18200618/print).

[149] Ambinder, supra note 146, at 79.

[150] Stephen D. Sugarman and Nirit Sandman, *Fighting Childhood Obesity Through Performance-Based Regulation of the Food Industry*, 56 DUKE L.J. 1403 (2007); Stephen D. Sugarman, *A New Diet Plan*, LEGAL TIMES (January 10, 2005). More conventional legal approaches are discussed in Margaret Sova McCabe, *The Battle of the Bulge: Evaluating Law as a Weapon Against Obesity*, 3 J. Food L. & Pol'y 135 (2007). Reduced meat eating would also be conducive to sustainability, because animals are increasingly fed corn (which requires large amounts of fertilizer and pesticides) and are kept in concentrated feed operations, which generate water pollution. See Mary Jane Angelo, *Corn, Carbon, and Conservation: Rethinking U.S. Agricultural Policy in a Changing Global Environment*, 17 GEO. MASON L. REV. 593, 607-611 (2010).

[151] Sugarman and Sandman, supra note 150, at 1475-1476.

obesity-reduction programs, or helping parents create diet plans for their children would more effectively reduce childhood obesity."[152]

Diet and lack of exercise are key factors in producing obesity, and the average amount walked per day has fallen dramatically just since the 1970s as people have increased their car use.[153] For this reason, the CDC recommends green-community measures as ways of combating obesity.[154] As we will see in Part IV, community design can have a number of desirable effects on both sustainability and quality of life.[155]

D. Motivating Consumption Changes

Individuals can also be mobilized in their capacity as consumers. Other countries have successfully designed communications campaigns encouraging more sustainable consumption. The annual Canadian "Clean Air Day" links climate change and personal lifestyles, while a recent French campaign communicated that "[t]he little things aren't so little if 60 million of us are doing them." The Japanese have promoted informal workplace dress as a way of allowing people to remain comfortable despite reductions in summer cooling.[156] Education is also important to ensure a fully informed populace, and such programs are now underway in Japan, Germany, Portugal, and Sweden.[157]

To consume sustainably, consumers also need access to information about products. Green labeling makes it possible for informed consumers to translate their

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[152] Id.

[153] Calthorpe *supra* note 147, at 31.

[154] Id. at 31.

[155] See text accompanying notes 199-204, 218 infra.

[156] ORGANIZATION FOR ECONOMIC CO-OPERATION AND DEVELOPMENT (OECD), PROMOTING SUSTAINABLE CONSUMPTION: GOOD PRACTICES IN OECD COUNTRIES (2008).

[157] *Id.* at 26.

preferences into practice.[158] Without effective labeling, consumers have no way of knowing the amount of carbon embedded in the goods that they buy or the energy demands of those goods. Governments could do much more to educate consumers and provide them with key information. It is also important to prevent misleading labeling.[159]

Another promising approach to mobilizing individuals is to enlist firms in modifying the behavior of their customers. Directly motivating changes in behavior is likely to be challenging for regulators. Agencies are far more experienced, however, in regulating the behavior of large firms, and these firms themselves already invest a great deal of advertising money in an effort to change consumer behavior. Regulators should consider ways to leverage regulation of firms in order to change behavior at the individual level. For instance, in California, the Public Utilities Commission has long used this strategy as part of its energy conservation efforts, enlisting utilities in improving energy efficiency decisions of consumers.[160]

An alternative under active consideration nationally is to combine efficiency mandates with renewable portfolio standards, allowing utilities to mix changing consumer behavior and building new electricity sources to reduce their carbon

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[158] Id. at 11.

[159] See Bradford Plummer, The Current Breakdown on Greenwashing (Feb. 8, 2010), http://www.tnr.com/blog/the-vine/the-coming-crackdown-greenwashing.

[160] See, e.g., CPU Approves Incentive Payments for Utility Energy Efficiency Investments http://docs.cpuc.ca.gov/published/news_release/111358.htm

footprint.[161] Similarly, a cap-and-trade scheme could be used to incentivize tobacco companies to get their consumers to reduce smoking.[162]

A similar cap system could be applied to any pollution problem where sellers market chemically distinct products, such as patented pesticides and herbicides.[163] Runoff could be monitored, with the contribution of different products distinguished. The manufacturers could then be assigned a cap based on the contribution of their products to runoff. They could meet their cap by limiting sales of certain products or by teaching users to use the products so as to restrict runoff.

Cap-and-trade schemes of more conventional kinds can also lend themselves to consumer initiative in the form of offset purchases, as consumers buy offsets to make up for carbon consumption when they feel unwilling or unable to simply reduce their consumption.[164] Offsets have to be carefully supervised to ensure that they represent emission reductions rather than paper improvements, but they could potentially provide an important mechanism for concerned consumers.

Participation in a group of like-minded individuals can be invaluable in promoting changed lifestyles. Carbon Rationing Action Groups (CRAGs), which began in England,

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[161] Karen L. Palmer, CLEANER ELECTRICITY AND LESS OF IT: THE PROSPECTS FOR REDUCING CO2 EMISSIONS BY REQUIRING RENEWABLES AND ENERGY EFFICIENCY 21-23 (2010), *available at* http://www.rff.org/RFF/Documents/RFF-Resources-176_CleanerElectricity.pdf.

[162] More creative applications of this concept should also be considered. For instance, Steve Sugarman has proposed that cigarette companies be ordered to reduce smoking levels of their brands by fifty percent over a seven-year period. These reduction quotas could be transferred between companies, like marketable pollution permits. Stephen D. Sugarman, *Tobacco Suit: Order Firms to Reduce Rate*, NAT'L L.J. (February 7, 2005).

[163] Surveys of customer practices might offer an alternative method of obtaining information, though ensuring reliability could pose challenges.

[164] *See* Ezra Rosser, *Offsetting and the Consumption of Social Responsibility* (forthcoming, WASH. U. L. REV., 2011), *available a*t http://ssrn.coTm/abstract=177403.

are considered "the most hardcore versions of neighborhood groups" dedicated to sustainable lifestyles.[165] A study of members of (CRAGS) garnered comments like these:

> The group is "very effective, wouldn't have made these changes without it, makes it fun and [creates] solidarity." Another commented similarly that the CRAG motivated her household to make "fairly cheap, easy and efficient home insulation measures" and also to seek out a grant for further work in their house. "Thank you CRAG, and shame on the six of us for not being quicker off the mark..." This CRAG member also editorialized that "Exchanging tips with other people who were also striving to cut on their carbon . . . seemed like a good idea, but I hadn't appreciated at the time just how valuable a resource my fellow CRAGgers would turn out to be! And nice too."[166]

The survey asked CRAG members to comment on how the changes affected their quality of life. Responses were "uniformly positive."[167] For instance, one busy professional responded that she "learned a lot, life is much better for it."[168] Although we cannot expect this level of commitment from most people, these results do indicate that at least for some people, the very act of changing behavior to achieve global goals was satisfying. Participants in CRAGs and in less tightly organized groups expressed "a sense of joy and satisfaction with their actions": "They claim that 'no hair shirts' have been donned; that hanging their laundry makes them happy; that they enjoy walking and biking everywhere; that their actions 'just feel good . . .'"[169]

The people who joined these groups were more motivated than most members of the population, and we should not expect such strong responses from everyone. But they do show that, for at least some people, lifestyle changes can be experienced as very positive.

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[165] Sarah Krakoff, Planetarian Identity Formation and the Relocalization of Environmental Law 26 (2011), available at http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1804495 (forthcoming Fla. L. Rev. 2011).

[166] Id. at 33.

[167] Id. at 34.

[168] Id.

[169] Id. at 43.

IV. Pursuing Sustainability at the Community Level

In order to limit the level of consumption in an acceptable way, we need to provide people with more opportunities for satisfying non-consumption activities.[170] Doing so may dovetail directly with environmental goals. For instance, reducing traffic and commute times through better land use planning reduces pollution and carbon emissions, but also provides more leisure and family time. In addition, well-designed neighborhoods foster more social interactions with neighbors and more civic involvement. The research discussed earlier shows increased social capital to improve individual wellbeing and reduce the need for consumption as a mode of satisfaction.

Community design shapes consumption choices. Consumption decisions may appear individualistic but these decisions depend on the menu of choices that are available, some of which are determined by infrastructure and architecture. Transportation accounts for almost a third of CO_2 emission in the Untied States.[171] In the absence of affordable and efficient public transportation, individuals need to use cars to get to work or for other travel. In the absence of walkable communities, individuals will drive rather than walk.[172] If the only affordable, attractive housing is in remote suburbs or exurbs, people will not choose to live in cities. Our present pattern of suburban sprawl is not simply an outgrowth of the market; it is the product of a variety of state, federal,

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[170] Although consumption in a broad sense includes all market transactions by consumers, for sustainability purposes the problem lies with those transactions that involve resource and energy use, so services are less of a problem than goods.

[171] See Trip Pollard, *Building Greener Communities: Smarter Growth and Green Building*, 27 VA. ENV. L.J. 125, 136 (2009).

[172] For instance, in the San Francisco Bay Area, neighborhoods vary by a factor of four in average vehicle miles driven, depending on walkability, the mix of uses, and access to public transportation. *See* Calthorpe, *supra* note 147, at 22-23.

and local policies and incentives.[173] Thus, urban planning and public infrastructure decisions are intertwined with individual consumption choices.[174] They are also intertwined with many aspects of quality of life, from the health of social networks to the frustrations of commuting and its negative impact on home life and the viability of our public spaces.[175]

A. Transportation-Related Energy Issues

Improved passenger rail can not only reduce emissions but also aid the remaining drivers by reducing congestion. In 2007, automobile congestion caused over four billion person-hours in delay at a total cost of over $85 billion, and these numbers seem to be rapidly growing.[176] Well-designed rail also improves quality of life by decreasing stress.[177]

Green building can also reduce the environmental footprint of communities.[178]

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[173] Rachel Medina and A. Dan Tarlock, *Addressing Climate Change at the State and Local Level: Using Land Use Controls to Reduce Automobile Emissions*.; 2 SUSTAINABILITY 1742, 1745-1747 (2010); Calthorpe, supra note , at 120.

[174] The rubric "Green Urbanism" combines many of the themes discussed in this section. See Calthorpe, supra note 147, at 114-117.

[175] As Calthorpe says, the "public domain must become richer as the private domain becomes more frugal -- . . . success and wellbeing should be a shared, rather than a private, affair." Id. at 126.

[176] See Benjamin J. Wickizer and Andrew Snow, *Rediscovering the Transportation: Improving Sustainability in the United States Through Passenger Rail*, 11 SUSTAINABLE DEV. L. & POL'Y 12, 15 (2010).

[177] *Id.* Public transport can reduce stress in two ways. Some individuals may find it a less stressful or time-consuming transportation option than driving. Individuals who continue to drive will benefit from reduced congestion due to the increased use of public transportation, improving their quality of life. This is one reason that subsidies for public transportation make sense, even apart from its desirable environmental effects.

[178] *See* Pollard, *supra* note 171, at 125-126. Green building has been defined as:

> the practice of (1) increasing the efficiency with which buildings and their sites use energy, water, and materials, and (2) reducing building impacts on human health and the environment, through better siting, design, construction, operation, maintenance, and removal – the complete building life cycle.

Estimates vary, but buildings appear to account for one-third or more of greenhouse gas emissions.[179] Municipalities are experimenting with a range of building code requirements and incentives to encourage green building.[180]

There are a number of other innovative techniques that can help reduce residential energy use. Planting trees can act as a windbreak and reduce heating costs, while trees can also reduce cooling costs in the summer by providing shade.[181] Urban forests can provide a variety of other ecosystem services such as capturing and filttering storm-water and reduce urban air pollution.[182] High-albedo (i.e. light-colored) roofs can reduce energy use, decrease cooling costs, and reduce the urban heat island effect.[183] Chicago, Dallas, and Houston mandate low-albedo roofs for certain construction, while cities ranging from Portland, to Cincinnati and Philadelphia offer incentives to encourage such roofs.[184] Transit-oriented development (TOD) schemes encourage development in areas close to transportation hubs, in order to promote "urban, mixed-use development in

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Office of the Federal Environmental Executive and Council on Environmental Quality, THE FEDERAL COMMITMENT TO GREEN BUILDING: EXPERIENCES AND EXPECTATIONS (2003), *available at* http://www.ofee.gov/Resources/Guidance_reports/Guidance_reports_archives/fgb_report.pdf.

[179] Pollard, supra note 171, at 127.

[180] Id. at 141-145.

[181] See Lynn Scarlett, *Introduction: Cities and Sustainability—Ecology, Economy, and Community*, 11 SUSTAINABLE DEV. L. & POL'Y 2 (2010).

[182] Keith Hirokawa, *Sustainability and the Urban Forest: An Ecosystem Services Perspective* (2009), available at http://ssrn.com/abstract=1722650.

[183] Elise Stull, Xiopu Sun, and Durwood Zelke, *Enhancing Urban Albedo to Fight Climate Change and Save Energy*, 11 SUSTAINABLE DEV. L. & POL'Y 5, 5-6 (2010).

[184] Patricia Salkin, *Sustainability and Land Use Planning: Greening State and Local Land Use Plans and Regulation to Address Climate Change Challenges and Preserve Resources for Future Generations*, 34 WM. & MARY ENV. L. & POL'Y REV. 121, 169 (2009). An intriguing idea is to allow green building to serve as a carbon offset for industrial emitters in order to create a market incentive. See Hirokawa, supra note 182, at 548.

transit corridors and provide residents with walking access to mass transit and nearby points of interest."[185]

California provides an excellent setting to consider the potential for infrastructure and urban planning to contribute to sustainability. California is expected to grow by twenty million people (seven million new households) by 2050.[186] The transportation sector in California accounts for almost forty percent of the state's greenhouse gas emissions, making it the single largest source. These emissions, in major part, result from the miles that Californians drive their cars and light trucks. The California Department of Transportation (Caltrans) concludes that even with new greenhouse gas regulations and improvement to the carbon content of fuel, projected increases in vehicle miles traveled will outweigh these policies' combined impact on greenhouse gas emissions.[187]

States, therefore, need land use policies that encourage sustainable development. Residents in sustainable communities do not have to drive a car to get to jobs and run errands, and the compact footprint of these neighborhoods lessens development pressure on open space and farmland. Buyers are also demanding more sustainable development.[188] In California, the share of residential construction in historic central cities and core suburban communities has increased over the past five years – including

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[185] Id. at 153.

[186] Calthorpe, supra note 147, at 11.

[187] CENTER FOR LAW, ENERGY & THE ENVIRONMENT, BERKELEY LAW SCHOOL, CENTER (CLEE) & ENVIRONMENTAL LAW CENTER & EMMETT CENTER CLIMATE, UCLA LAW SCHOOL, PLAN FOR THE FUTURE: HOW LOCAL GOVERNMENTS CAN HELP IMPLEMENT CALIFORNIA'S NEW LAND USE AND CLIMATE CHANGE LEGISLATION (2010), available at http://www.law.berkeley.edu/files/Plan_for_the_Future_July_2010.pdf.

[188] AMERICAN PLANNING ASSOCIATION, INTEGRATING ENERGY AND CLIMATE INTO PLANNING (2009) *available at http://www.planning.org/pas/memo/ open/jan2009/index.htm.*

the recent real estate downturn.[189] In many metro areas, central cities have increased their share of new construction while suburban construction has declined.[190] Outlying areas experienced the greatest price declines in the 2008 meltdown.[191]

Building codes can also move communities toward more energy-efficient buildings as well as healthier ones.[192] A statewide California building code sets goals for energy efficiency,[193] and cities ranging from Carbondale, Colorado to Santa Monica have similar local requirements.[194]

B. Barriers and Opportunities

Sustainable real estate development, however, faces significant regulatory, political, and financial hurdles. Some areas may experience paralyzing local opposition, expressed as fear of increased traffic and decreased property values. Community opposition can then translate into political failure at the local level. In addition, many local governments lack the resources, financing, and expertise to facilitate sustainable development in older urban areas, which sometimes require significant infrastructure upgrades. In some instances, outdated local land use plans and ordinances work to prevent precisely the type of neighborhoods that many buyers are now demanding.[195]

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[189] CLEE, PLAN FOR THE FUTURE, *supra* note 187.

[190] Calthorpe, *supra* note 147, at 13.

[191] *Id.* at 14.

[192] Americans spend the large majority of their time indoors but indoor air even in new houses can be much more polluted than outdoor air. See Keith H. Hirokawa, *At Home with Nature: Early Reflections on Green Building Laws and the Transformation of the Built Environment*, 39 LEWIS & CLARK L. REV. 507 (2009).

[193] Salkin, supra note 184, at 160.

[194] Salkin, supra note , at 161. Congress has made efforts to encourage states to adopt more energy efficient building codes. See Dehrnbach and Tyrrell, supra note 116, at 18.

[195] *Id.* at 1-8.

California took an important step forward with the passage of Senate Bill 375,[196] an innovative effort to reduce greenhouse gases through land use regulation.[197]

Although SB 375 is a breakthrough in terms of engaging state and local governments in the development of sustainable communities, in reality it is only a first step. Under political pressure, the drafters included only positive incentives such as expedited environmental review. The legislation does not include any mandates. The statute lacks a permanent funding source for planning efforts, and an effort to repair that flaw was vetoed by Governor Schwarzenegger in 2009. These defects must be remedied in order to provide solid basis for smart growth in California.[198] A valid planning process would be in the interest of developers by providing more certainty and a more streamlined approval process for specific projects.

Quite apart from AB 375, municipalities in the Central Valley are already experimenting with the "new urbanism."[199] California already has examples, such as downtown Berkeley and Los Angeles, neighborhoods in San Francisco, Pasadena, and San Diego's Gaslamp Quarter. Residents there have the option of walking to services (such as stores and schools), jobs, and major public transit stops. Recall that walking is highly rated as a satisfying activity, besides its health and pollution reduction benefits.

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[196] S. 375, 2007=-2008 Leg. Reg. Session. (Cal. 2008), 2008 Cal. State. 728 (2008) (codified in part as Cal. Code Regs. Tit. 2, sec. 14522.11 (2011)).

[197] *See* Kira Hettinger, *New Frontier in Urban Greenhouse Gas Emissions Regulation: Overview of California's Senate Bill 375,* 11 SUSTAINABLE DEV. L. & POL'Y 58 (2010).

[198] Heather Haney, Comment, *Implementing SB 375: Promises and Pitfalls*, ECOLOGY LAW QUARTERLY CURRENTS (2010), *available at* http://elq.typepad.com/currents/2010/06/currents37-06-haney-2010-0606.html?cid=6a0105372158ac970b0134884a5755970c. SB 375 is designed to use urban planning to support climate change mitigation, streamline environmental review to achieve carbon reductions, and move toward regional planning, more compact development, and better integration of California transportation and housing policies. Regional Metropolitan Planning Organizations are required to develop sustainable community strategies to achieve specified emission reductions by 2020 and 2035. Id.

[199] Mark Lubell, Bret Beheim, Vicken Hillis, and Susan Handy, *Achieving Sustainability in California's Central Valley* 5 (2009).

And the diverse nature of housing means grown children can live near parents, empty-nesters can downsize within their communities, and residents of diverse incomes can live near each other.[200] Closer proximity means more opportunities to engage in the kinds of family and social interactions that contribute heavily to subjective well-being.

High speed rail (HSR) can guide development toward communities where stations are stied. High speed rail could be used to shift new growth away from the Central Valley's farmlands and toward existing cities.[201] Light rail could also be a valuable option, reducing automobile use and channeling growth toward sustainability. Dedicated bus-ways can serve much the same purposes:

> What ultimately drives development is accessibility gains – whether in the form of rubber tyres on concrete or steel wheels on steel rail. Cities like Ottawa, Canada and Curitiba, Brazil show that bus-based TODs can be every bit as successful as rail TODs as long as they are accompanied by forward-looking, intelligent planning.[202]

Public transportation and sustainable communities are synergistic. Public transportation aids sustainability, while the resulting TOD makes use of public transport more feasible. California is not alone in seeking to encourage more sustainable development. For instance, Florida planning law encourages cities to avoid urban sprawl and support energy-efficient development.[203] Arizona and Connecticut pursue similar

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[200] Rafel Di Tella & Robert MacCulloch, *Some Uses of Happiness Data*, 20 J. OF ECON. PERSPECTIVES 25 (Winter 2006).

[201] $715 million in federal funding has been designated to fund construction of high-speed rail track, rail stations and control technology in the Central Valley. California High-Speed Rail Authority, *UC Berkeley Research on the Potential for Transit-Oriented Development in the Central Valley* (2010), *available at* http://cahighspeedrail.ca.gov/ucberkeley_research.aspx.

[202] Robert Cervero. *Transport and Land Use: Key Issues in Metropolitan Planning and Smart Growth* [undated], *available at* http://uctc.net/research/papers/436.pdf. This acceptance of multiple forms of transport seems to be a shift: "The original direction of TOD was limited – focused on light rail to the exclusion of other transit types. Now the modes have matured to include bus rapid transit, DMU (self-propelled light rail), express buses, street cars, commuter trains, and heavy rail systems." Calthorpe, *supra* note 147, at 86.

[203] Salkin, supra note133, at 131.

policies.[204] Some notable examples of comprehensive plans that address sustainability and climate change can be found in Blacksburg, Virginia; Bounder County, Colorado; Buffalo, New York; Marin County, California;[205] and Seattle, Washington.[206] Another fruitful approach involves redesign of city streets to promote sustainability.[207]

C. Involving Individuals and Communities in Sustainability Governance

Government policy, naturally enough, often focuses on how government can directly work toward sustainability through its own activities or regulation of the private

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[204] Id. at 130.

[205] There may be limited available money for new public transit in the next few years. However, in the meantime, the state could help ensure that land use planning around future HSR stations promotes strong, compact development. The state could also promote public/private partnerships on transit, such as employer-organized ridesharing, and employer incentives for employees to live near their work. Revolving loan-funds through an infrastructure bank could also help finance some of the necessary infrastructure improvements in prime transit-oriented development areas.

Medina & Tarlock, *supra* note173, at 1756-1757, provides a cast study of the Marin County experience. Among other salient points:

> The Marin County General Plan uses sustainability as an underlying theme throughout. The plan even calculates the ecological footprint of the average resident and includes measures to reduce the footprint. It is allegedly the first local comprehensive plan in the country to use such an approach. . . . . Marin County cites many policy initiatives, some of which are quite relevant to greenhouse gas reductions, such as establishing a housing overlay designation, locating housing near activity centers, focusing intensive development at nodes, enhancing existing commercial and industrial areas and businesses, and expanding countywide efforts to increase workforce housing rather than full commercial build-out . . . The housing overlay designation initiative encourages construction of housing for very-low- and low-income households close to transit, employment and public services. Enhancing commercial and industrial areas and business encourages mixed-use development. And, expanding the effort to increase workforce housing encourages housing development near employment centers and public transportation .

Id.

[206] Salkin, supra note 184, at 135-140.

[207] City streets offer further opportunities for reducing greenhouse gas emissions. Different allocations of space in street right-of-ways can encourage walking, bicycling and mass transit instead of car use. Trees can reduce air temperatures and shade the sidewalk for pedestrians. Permeable pavement can increase filtration of rainwater into the ground, reducing loads and energy use in sewage treatment facilities. UC Berkeley's City Streets Project is investigating the design, function and regulation of streets with an eye toward reducing related greenhouse gas emissions. http://www.law.berkeley.edu/6346.htm Most cities and counties rely on non-binding industry standards to guide street design, in part to defend themselves against possible tort suits for accidents. These standards typically favor higher speed travel and elimination of traffic congestion over designs that would encourage pedestrian and transit use. A preliminary report from the project was issued on December 10, 2010. John Urgo, Meredith Wilensky, & Steven Weissman, Moving Beyond Prevailing Street Design Standards: Assessing Legal and Liability Barriers to More Efficient Street Design and Function (2010).

sector. But the government can also seek to involve individuals more directly, promoting individual actions that in turn support sustainability. Individuals can be enlisted in sustainability in a variety of ways: through volunteer involvement in enforcement activities, through participation in public comments on regulatory proceedings, and through voluntary lifestyle changes and sustainable consumption decisions.

Individuals can be enlisted in civic activities to help improve their local environments, with individual benefits not only in the form of reduced exposure to pollution but also because civic involvement is tied to subjective wellbeing. Recent research shows that air pollution exposure is often keyed to the immediate environment. Air pollution "bucket brigades" allow members of communities to help police air pollution violations in their areas, with important benefits in particular for poor or disempowered communities. Residents are taught to use inexpensive equipment for taking air samples, which are then sent to a lab to analyze pollutants.[208]

Further expansion of citizen involvement in environmental enforcement has great potential due to the localized nature of many pollution problems. For example, school buses and other vehicles following diesel trucks may have highly elevated particulate levels.[209] Similarly, children in schools near highways are exposed to elevated pollution levels.[210] On-the-spot air pollution checks could be invaluable but may not be practical for government entities. Concerned parents may be able to help fill the gap. The impact

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[208] Dara O'Rourke and Gregg P. Macey, *Community Environmental Policing: Assessing New Strategies of Public Participation in Environmental Regulation*, J. OF POL'Y ANALYSIS AND MANAGEMENT 22 383–414 (2003), *available at* http://nature.berkeley.edu/orourke/PDF/CEP-JPAM.pdf.

[209] On risks to children in school buses, see Clean Air Trust, *School Bus Pollution*, *available a*t http://www.cleanairtrust.org/buses.html.

[210] U.C. Health News, *Many U.S. Public Schools in 'Air Pollution Danger Zone*, *available at* http://healthnews.uc.edu/news/?/7358/.

of local air quality on individuals can be dramatized through personalized air pollution measurement via a cell phone app, which replaces "measurement of personal breathing space over a period of several days," using a backpack that samples air around the person's nose and mouth.[211] The lesson of these studies is that:

> [L]and use in many ways dictates public health. If you live by a freeway, you are exposed to exhaust – among other waste by-products of vehicle traffic – if you live by a manufacturing facility, you are exposed to the waste by-product of that manufacturing process. If you live by both, well we still don't really know the health impacts of cumulative exposures, but it's hard to imagine they are benign.[212]

As monitoring technology becomes cheaper and more widely available, individuals and communities can become involved in unprecedented ways in monitoring and enforcing environmental regulations.[213]

Individuals can also become more involved in sustainability through participation in the regulatory process. A classic example, although in some respects a controversial one, was a spontaneous effort at pragmatic problem solving by a citizen group meeting in a public library:

> The Quincy Library Group [QLG] . . . sought to make management decisions for portions of the Lassen, Plumas, and Tahoe national forests through a selected local stakeholder cooperation. Conflicting aspirations for these forests . . . had devolved into a "timber war" between the timber industry and environmentalists. The QLG set out to find common ground in order to end the timber war. . . . After

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[211] *See, e.g.*, Jaymi Heimbuch, *Android App Measures Air Pollution Using Cell Phone's Camera* (Sept. 22, 2010), *available at* http://www.treehugger.com/files/2010/09/android-app-measures-air-pollution-using-cell-phones-camera.php

[212] Stephanie Pincetl, *Land Use and Air Quality: The Path Toward Public Health Protections* (Oct. 4, 2004 presentation to the California Air Resources Board Study Session on Relationship Between Location of Sensitive Receptors and Air Pollution Sources), *available at* http://www.ioe.ucla.edu/academic/Fall2004/m164/PincetlPresentation.pdf .

[213] Of course, a single neighborhood cannot solve the impact of freeways on air quality. But residents can take steps to help address the impacts. For example, by monitoring trucks with high particulate levels, the parents of school children could identify which companies are most responsible for exposing their children to particulates. At least some of those companies might be responsive to bad publicity, community pressure, and increased attention from enforcement agencies. An alternative would be to require trucking companies to report total emissions from their fleets, which could be made available to the public.

> dozens of meetings, the QLG, which began as a collection of "uncomfortable individuals and contentious factions," had become a "very easy-going and cohesive group." [Ultimately,] the QLG's plan was enacted into law by the Herger-Feinstein Quincy Library Group Forest Recovery Act.[214]

Although collaborative governance faces real challenges, it has the potential to overcome polarization and identify workable solutions.[215] Properly designed participation processes can improve citizen satisfaction regardless of the outcome.[216]

Public participation can also pay a role in more traditional types of decision making, such as rulemaking. Modern electronic technology provides new opportunities for public participation.[217] However, for citizen participation to be effective, citizen groups must have access to consultants and legal assistance.[218] Empirical evidence shows, not surprisingly, that the effectiveness of public rulemaking comments depends on their sophistication.[219]

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[214] Rebecca Bratspies, *Regulatory Trust*, 51 ARIZ. L. REV. 575, 593-594 (2009). As Bratspies points, the QLG plan was controversial because it was less protective than the Forest Service's plan. *Id.* On the other hand the QLG's broad support may have made it more durable and enforceable than the alternative.

[215] Bradley C. Karkkainen, *Collaborative Ecosystem Governance: Scale, Complexity, and Dynamism*, 21 VA. ENV. L.J. 189, 193-194, 210-212 (2002).

[216] David L. Markell and Tom R. Tyler, *Using Empirical Research To Design Government Citizen Participation Processes: A Case Study Of Citizens' Roles In Environmental Compliance And Enforcement*, 57 U. KAN. L. REV. 1 (2008).

[217] Lisa Blomgren Bingham, *The Next Generation Of Administrative Law: Building The Legal Infrastructure For Collaborative Governance,* 2010 WIS. L. REV. 297, 330-332 (2010).

[218] Marc B. Mihaly, *Citizen Participation In the Making Of Environmental Decisions: Evolving Obstacles and Potential Solutions Through Partnership With Experts and Agents*, 27 PACE ENVTL. L. REV. 151 (2009). Without such forms of support, Mihaly observes, citizen participation will remain ineffective:

> It is my experience, however, that while officials support vigorously the concept of citizen participation, they acknowledge privately that they rarely hear or read testimony from lay participants that changes their mind or adds substance to their determinations. In testament to the power of an ideal and a conflicting reality to co-exist, officials show genuine support for the concept of citizen involvement and yet complain about lay testimony in private or wish for less of it.

Id. at 151-152.

[219] Mariano-Florentino Cuéllar, *Rethinking Regulatory Democracy*, 57 Admin. L. Rev. 411, 414-415 (2005). Cuéllar concludes:

> Comments may help signal preference intensity, but failure to send a comment does not imply an inherent lack of concern. Conversely, though individual members of the public who write

Without overly romanticizing the potential for public participation, either through traditional public comment processes or more innovative collaborative governance,[220] increased public participation has the potential to improve environmental governance. As discussed in Part I, increased public participation also has the potential to increase individual happiness and wellbeing. Studies confirm that public participation strengthens social capital in terms of long-term community relationships, satisfaction with outcomes, and sense of legitimacy.[221]

Based on many years of polling data, sociologists found a severe decline in nearly all measures of civic and political participation after mid-century.[222] But they also concluded that civic involvement increases social capital, builds networks of trust, and fostered norms of reciprocity that lubricate social life.[223] Moreover, and most relevant for our purposes, lack of social capital is connected with unhappiness and depression.[224]

> comments usually make unsophisticated statements, those messages tend to include, at their core, constructive insights relevant to agencies' legal mandates. My analysis also suggests that the creation of some process for increasing the sophistication of public input might well have a material effect on the content of regulatory rules. All of which hints at some potentially rich possibilities for reforming notice and comment to supplement regulatory rulemaking records with insights from informed members of the public.

Id. at 416.

[220] For a discussion of methods of augmenting community participation, see Alejandro Camacho, *Mustering the Missing Voices: A Collaborative Model for Fostering Equality, Community Involvement and Adaptive Planning in Land Use Decisions [Installment Two]*, 24 STAN. ENV. L.J. 269 (2005).

[221] See id. at 312-314

[222] Robert D. Putnam, BOWLING ALONE: THE COLLAPSE AND REVIVAL OF THE AMERICAN COMMUNITY 27, 41, 54-57(2000). Notably, even by 2000, it was clear that "Americans at the political poles are more engaged in civic life, whereas moderates have tended to drop out." Id. at 342.

[223] Id. at 20-21. Regarding reciprocity, the matter may have been put best by Yogi Berra: "If you don't go to somebody's funeral, they won't come to yours." Id. at 20.

[224] Id. at 331-335.

These intrinsic benefits of civic participation, along with more instrumental concerns, suggest that courts should be friendly toward rules that open the decision-making process, particularly at the local level. Thus, open-meeting laws, public hearing requirements, and broad standing for local citizen suits may not only improve political accountability but may help create social capital and increase individual well-being.

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In the long run, to achieve sustainability, we need to not only change the ways that businesses operate, we need to change the way that people live their lives. This change must occur at two levels. At the level of individual decision-making, we need to give people the basis for making more informed, sustainable consumption decisions. At the societal level, we need to provide communities and infrastructure that give people the opportunity to live healthier, more satisfying, more sustainable lives.

Change will be slow. Many immediate practical effects will have only incremental effects. We can hope, however, that these first steps will help people experience forms of gratification with lower consumption and environmental footprints, which in turn will make them open to further initiatives moving in the same direction. In the end, unless people can have full and satisfying lives while also improving sustainability, only ascetics and saints will support the move to sustainability. To be itself sustainable culturally and politically, environmental sustainability must have an attractive human dimension.

The search for a better life is a fundamental component of the American dream. Given environmental realities, pursuing the dream will require Americans to make wise consumer choices, reduce their reliance on energy and resource intensive consumption as

the key to quality of life, and have the opportunity to live in sustainable communities. In the long run, sustainable living is the only real option. In the short run, changes in individual consumption offer untapped opportunities to reduce our environmental footprint.

Happiness, as a societal goal, may seem self-centered, if not greedy. But as Derek Bok points out,

> [T]he happiness [Americans] feel does not seem to come primarily from mere pleasure-seeking or from selfishly looking out for number one. Rather, apart from such basic conditions as how well people feel, how much freedom they enjoy, and whether they possess the necessities and comforts of life, the most important sources of happiness seem to include having close relationships with family and friends, helping others, and being active in community, charitable and political activities.[225]

For the author of the Declaration of Independence, the "pursuit of happiness" also meant more than private self-gratification, because he drew on an Enlightenment tradition that made individual happiness dependent on pursuing the happiness of others.[226]

A key insight is that sustainability connects with a range of issues concerning quality of life, not merely the set of issues that we are accustomed to considering "environmental." Moving away from consumerism means giving people more time and opportunity for family, friends, personal activities, and civic involvement. Thus sustainability efforts can be situated within a broader vision of the good life – one that also has implications for family-friendly social policies, urban design, public health, consumer protection, taxation, and other arenas of social policy.

Understood in these broader senses, there is no reason to view happiness and sustainability as necessarily conflicting. Instead, we can design strategies that both

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[225] Bok, *supra* note 43, at 205.

[226] *See* GARRY WILLS, INVENTING AMERICA: JEFFERSON'S DECLARATION OF INDEPENDENCE 248-255 (1978).

provide more fulfilling lives and improve environmental quality. Reshaping the way people live and how their communities are structured will undoubtedly be a slow process. But we need not fear that life in a more sustainable society would need to be less happy or fulfilling.