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Robèrt Forgot Goulet: Augmenting TNS with the Capabilities Approach to support the Social Dimensions of Sustainability

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Abstract

While the definition of sustainability remains open for all to contribute to and participate in, there do seem to be some notions it has come to embody that should not be neglected as the definition coalesces. Among these are the ethical and social dimensions of sustainability. Whether or not it is appropriate, required, or even desirable, concepts like social equity, human rights, ethical sharing of commons, etc. have increasingly come under the umbrella of the sustainability discourse. Even if "sustainability" as a bare word doesn't imply those things, the concept of *sustainable development* certainly has taken on those dimensions. That sustainability might be redefined or re-scoped to be a purely environmental or a rigidly scientific endeavor, is not an immediate concern of this paper, though if that were to occur (whether for the sake of simplicity or pragmatics), it should be done *explicitly* so the ethical sub-discourse can be maintained (indeed, sustained) by some other movement. This paper proposes a mechanism by which such a migration in terms can be prevented. First, in reviewing the work of Denis Goulet, it shows the solid basis for including an ethical aspect in the sustainability discourse. Second, it points out that Karl-Henrik Robèrt's highly-lauded and broadly-employed sustainability framework, *The Natural Step*, is deficient in this area. This deficiency provides the impetus for, finally, proposing a mechanism by which *The Natural Step* can be extended to include the important social and ethical dimensions of sustainability. This mechanism is based on the *capabilities* approaches that, in many respects, evolved out of Goulet's early work. Augmented accordingly, TNS can continue to be used without fear of overlooking the social and ethical aspects of the sustainability discourse.

Introduction

Some have traced the history of the sustainability discourse by giving exclusive reference to the early days of the environmental movement and citing luminaries like Carson and White (Ricketts, 2010). Others have decried the conflation of sustainability with other disciplines through the mechanism of simply adding appendages (as in, Sustainable *Development*) and suggest this dilutes the importance of core sustainability doctrines (Johnston et al., 2007). In employing such limited views it is easy to miss (1) the important evolution of the *human development* movement, (2) the extraordinary influence that movement had on the sustainability discourse, and (3) the way these two threads were inseparably merged in the famous Brundtland Commission declaration on sustainable development (WCED, 1987). Perhaps fortunately, later scholars emerged and coined irresistible concepts like the "triple bottom line" (Elkington, 1997), that served to forever cement the social dimensions of the Sustainability discourse with its environmental and economic dimensions. Nevertheless, the roots of the current discourse are very extensive. Figure 1 provides a very simplified view of the evolution of the modern sustainability discourse.

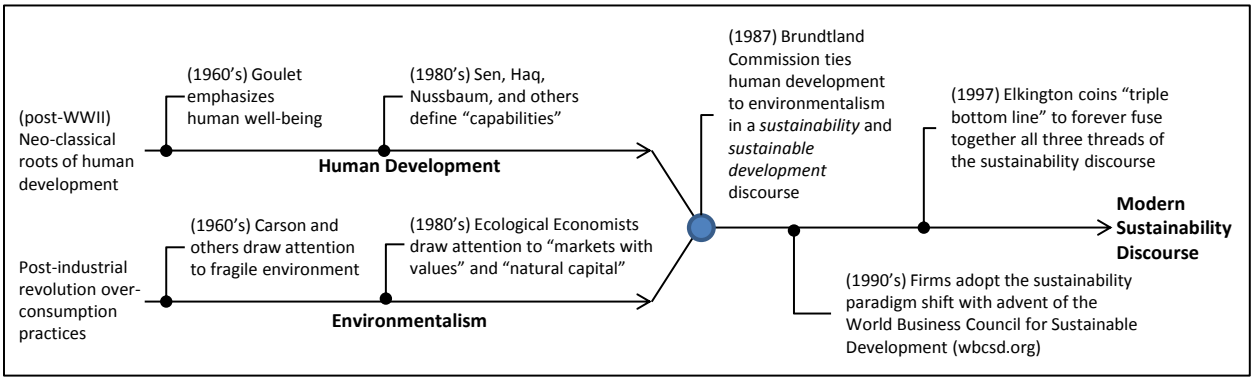

Figure 1. Simplified Evolution of Sustainability Discourse Themes

Obviously, sustainability is not an exclusively *engineering* topic. To think that engineering (of whatever sort) in some way *owns* the sustainability discourse would be to overstep. Its aforementioned roots in the environmental conservation movement are not exclusive or even definitive (see Seager, 2008). In fact, *most* academics in a wide variety of disciplines now speak of sustainability and how it applies to, or is bolstered by, their specific discipline (e.g., King, 2008; Winston, 2011; Phillipon, 2012). But more important than any academic critique is the way the discourse has been adopted by the public at large (cf. Parr, 2009; Yarrow, 2009).

But neither is the sustainability discourse a solely *academic* one. And since the discourse has spread into the realm of public chat (cf. McLoughlin, 2004), it has also been adopted by firms (with the assistance of such organizations as the World Business Council for Sustainable Development) as a way they can "do better," "be better," or occasionally just "appear better" (Cowan et al., 2010; Saha & Darnton, 2005). I certainly do not mean to imply a trajectory, but adoption by firms is undeniably driven at least in part by the fact that they maintain significant and constant interaction with the public (more so than academia) and it just seems *right* to be involved in something that makes customers feel better about products and services. This is not to suggest that the *only* reason such corporate responsibility initiatives surface is profit-based, but it does tend to sell more products (cf. Farache & Perks, 2010). (While the co-production of the sustainability and the corporate social responsibility movements is an important theme, it is not the primary concern of this paper).

Despite the fact that the sustainability discourse might be a horse that has escaped its barn, there are those who would corral it. Some attempts are abstract and notional as, for example, when the discourse is condensed into a Brundtland-esque form (i.e., "equitably meet needs now and forever"). In this shape it is inspiring, but not easily actionable. Other attempts remain vague but at least suggest recognizable pursuits like the aforementioned "triple bottom line" of social, environmental, and economic goals. Still others bifurcate these goals into separate disciplinary endeavors and focus on reduced carbon footprint, biodiversity, and life-cycle assessment (in the environmental world), peace, democracy, justice, and equity (in the social realm), and wealth redistribution or regulations on global trade (under economic jurisdiction).

It is not my purpose to disparage these worthy attempts at systematizing, condensing, or segregating the discourse into contributing domains. In fact, most (all?) such efforts have served to increase awareness of the need for "sustainability"—even if we are no closer to delivering a "better" planet to the next generation. Instead, a purpose of this work is to warn of attempts to codify sustainability in such a way that a new framework or theory becomes a *de facto* redefinition of the discourse while it simultaneously neglects important aspects of it. That would be akin to redefining water resources management along a single axis where "only quantity matters" and forgetting that water *quality* is an important aspect of the problem. It would be like declaring a building successful because it is "net zero" even though it is not structurally sound. It beggars a discipline to ignore vital aspects of its scope.

Could such redefinitions happen to a discourse like sustainability? Yes, though they are perhaps not specifically intended. Still, with a pop-discourse as uncontrolled and malleable as sustainability, the dangers are even greater. Given bandwagon effects, it is very easy to either purposefully or accidentally adopt a "buzzword compliance" that is not entirely accurate. I am reminded of the object-oriented software development revolution of the 1980s. In those days, it seemed that if your package was not O-O buzzword compliant, it was not marketable. Similar effects are in view with the sustainability discourse.

It is my contention in this paper that Robèrt forgot Goulet and thus fell short of reaching his goal for developing a complete sustainability framework. That is, in attempting to force the sustainability discourse into the mold of the scientific method, Karl-Henrik Robèrt's sustainability framework forgot the important ethical and humanitarian features of the movement championed very early by Denis Goulet and recognized by many others. It was certainly not purposeful or mean-spirited. It was simply pragmatic. The attempts of Robèrt and *The Natural Step* (TNS) framework[1] to employ the scientific method in delivering sustainable solutions are profound, helpful, and fill an important niche in enabling scientists and engineers to think "sustainably." Ultimately, however, TNS is inadequate to deliver on the promise of the sustainability discourse because of its highly mechanical approach to wicked human problems (cf. Rittel and Webber, 1973; Rosenhead, 1996; Ritchey, 2005) and its inability to properly engage the

[1] Note that *The Natural Step* Framework is also known as the *Framework for Strategic Sustainable Development* (FSSD). See http://www.alliance-ssd.org/framework-for-strategic-sustainable-development-fssd/.

social and ethical dimensions of the discourse. This warning is required because as TNS gains critical mass and increasing followership, there is a danger that eventually the deeply important humanitarian and ethical dimensions of sustainability could be entirely forgotten—all in the pursuit of sustainability.

The looming loss, however, is not irreparable because among the main principles (system conditions) of TNS is the concept of social equity (cf. Robèrt, 2000; Robèrt et al., 2002). One might think that by including such an important concept in the main principles it could not be forgotten. However, by referring to it in the main principles, *it is made more easily ignorable* as the decomposition into specificity occurs, because the tacit assumption is that such important dimensions are *already covered*. This can lead to two outcomes: (1) simple ignorance wherein TNS practitioners assume the main principles are satisfied as the lower-level implementation details occur, and (2) obfuscation of the primary ethical goal in the bloat of lower-level doctrine. In a sense, the ethical forest was missed as the environmental trees were managed. While this might be expected from a group of engineering academics (cf. www.alliance-ssd.org/our-people) who perhaps assumed they owned or had at least corralled the definition of sustainability, it still requires correcting. Though it is certainly arguable that TNS is insufficient to deliver "sustainability" in *any* dimension (Upham, 2000), the framework is *at least* lacking in this area. To climb a step closer to its goals, TNS requires a mechanism to ensure the ethical and social dimensions are not overlooked.

The approach taken in this paper will be to first explore why and how ethics is included in the sustainability discourse. Second, it will be demonstrated that TNS gives lip service to ethics while, practically speaking, disregarding it. Finally, a mechanism by which TNS can include ethical principles will be proposed, thus allowing it to become a more complete framework for sustainability. The mechanism for inclusion of ethics in TNS was provided very early, and while it is inexcusable that Robèrt forgot Goulet, the omission is easily remedied.

Goulet, Ethics, and Sustainability

Between the Marshall Plan (1947) and the Bretton Woods agreements (1944) which inaugurated the International Monetary Fund and what would later become the World Bank, it was clear that the post-WWII concept of reconstruction and development was squarely seated in the neoclassical economic camp (see Figure 1). Francisco Sagasti summarizes this post-war attitude:

> One key expression of the renewed belief in progress was the emergence of the concept of *development*, which can be considered as the latest incarnation of the idea of progress.... to achieve, in the span of one generation, the material standards of living that the industrialized West achieved in three generations or more.... Development was also supposed to guarantee a minimum material comfort to all human beings (Sagasti, 1997, p. 1563, emphasis original).

While the concept of development was still young, it was not too early to critique this focus on the simply economic measures of growth. This was done nearly immediately by Denis Goulet, who is considered by many to be the father of development ethics (Clark, 2002; Crocker, 2008; Gasper, 2008). By 1960 he had already developed a fairly sophisticated understanding of how measurement of development progress had to include an ethical component for such development to be considered *authentic* (Goulet, 1960). His tenure in developing countries such as Brazil convinced him of the failure of solely neoclassical approaches and drove him to campaign for what would later influence the "freedoms" and "capabilities" approaches of Sen, Haq, and Nussbaum (Gasper, 2008, p. 455). To Goulet, development meant "changes which allow human beings, both as individual persons and as members of groups, to move from one condition of life to one which is *more human in some meaningful way*" (Goulet, 1960, p. 14, emphasis added). While inspiring and poetic, Goulet fortunately didn't leave it at "becoming more meaningfully human" without some further definitional work.

Goulet's intent was to "thrust debates over economic and social development into the arena of ethical values" while rhetorically wondering aloud "is human development something more than a systemic combination of modern bureaucracy, efficient technology, and productive economy?" (Goulet, 1971, p. vii). And for a while there *was* a debate. Haque et al. (1975) establish an early formulation of the contestants:

> The debate is between reformists who believe that the system can still be made to work if equitable distribution is built in to what is essentially a growth model and those who favor a radical approach:

> redefining the objectives of development in the direction of rapid social change and redistribution of political power.

Haque et al. quickly turn in support of what they consider a more appropriate understanding of human development; one which stresses "creativity, self-reliance, non-alienation, democratic decision-making" and they point out that simple redistribution of wealth "cannot generate self-respect, and without self-respect there can be no healthy society" (Haque et al., 1975).

Goulet extends this understanding by arguing that development should "provide all men with the opportunity to lead full human lives" (Goulet, 1971, p. x) and he demanded that all such efforts maintain "respect for all life and the concept of the well-being of all" (Goulet, 1979, p. 559). It is Goulet's early understanding of the ethical dimensions of development, and his early coining of the phrase "well-being" that provided much impetus to thinkers who followed. But what are "full human lives"? What is the "well-being" of which Goulet speaks? With some expansion by Marangos and Astroukalis (2009), Goulet's well-being engenders the "good life" which is fundamentally determined by universally accepted ethical values like (1) the nurture of human life, (2) the expansion of dignity, honor, and recognition, and (3) the provision of freedom from servitude of all kinds including to humans, to nature, and to ignorance (Marangos & Astroulakis, 2009, pp. 382-3).

It is important to note that when you consider Goulet's majestic definition of development (i.e., one which results in humans becoming more *meaningfully* human) the need to augment neoclassical development theories—and their focus on measuring GDP and economic growth—becomes evident. The desire for a shift in emphasis is echoed in many places in the international community, not the least of which is the United Nations Development Programme *(undp.org*). Ofelia Schutte, in speaking of the early years of the UNDP's reports on human development, says: "these reports are especially useful in counteracting the purely economic vision of neoliberal development advocated by those who defend market forces as the sole or predominant engine of development in globalization process" (Schutte, 2000, p. 454). These reports have contributed much to the balancing of a purely economic approach to measurement by adding important human elements.

Further, the Brundtland Commission had wedded ethics and sustainability by implying that progress, to be ethical, must be sustainable:

> Sustainability cannot be secured unless development policies pay attention to such considerations as *changes in access to resources and in the distribution of costs and benefits*. Even the narrow notion of physical sustainability implies a *concern for social equity* between generations, a concern that must logically be extended to equity within each generation (WCED, 1987, chap. 2, para. 3, emphasis added).

Anand and Sen (2000) echo these concerns by warning that "we cannot abuse and plunder our common stock of natural assets and resources leaving the future generation unable to enjoy the opportunities we take for granted today" (p. 2030). In thinking about future generations, it's easy to think there is nothing they can give to us. But in a particularly compelling passage, Anand and Sen remind us:

> Yet, of course, there is something posterity can do for us: it can inherit less physical and natural capital, and thus allow us to achieve—though not out of its choice—a higher standard of living at its expense (Anand & Sen, 2000, p. 2034).

By living unethically and unsustainably, they are suggesting we are doing nothing short of colonizing the future—forcing future generations to live under the same kind of exploitative imperialism we have witnessed (and decried) in prior generations. Just when we thought the age of colonization was past, Anand and Sen imply that Pogo was right after all: "We have met the enemy, and he is us" (Kelly, 1970). Their point, of course, is that we must provide social justice now and in the future:

> The goal of sustainability—increasingly recognized to be legitimate—would make little sense if the present life opportunities that are to be sustained in the future were miserable and indigent. Sustaining deprivation cannot be our goal, nor should we deny the less privileged today the attention that we bestow on generations in the future (Anand & Sen, 2000, p. 2030).

And Goulet is in full agreement. Late in his career he reminds us that we have not yet arrived at ethical and sustainable development:

> Development debates in the setting of globalization are largely framed in terms of sustainability. The World Bank declares that the "achievement of sustained and equitable development remains the greatest challenge facing the human race." But *equitable* development has not been achieved. *Therefore, we must not sustain the kind of development we presently have* (Goulet, 2004a, p. 6, emphasis added).

Marangos & Astroulakis (2009) summarize Goulet's thought: "at the end of the day, the whole development enterprise has to be critically subjected to ethical considerations" (p. 386). And Goulet gets very specific about the kind of development needed:

> What is sought is *not the present form of development, but sustainable development*. The present dominant form of development is not economically sustainable because it is dangerously wasteful and degrades natural capital. It is not politically and ethically sustainable because it creates new poverty in two registers:
> - it deprives large numbers of their livelihoods by circumventing their markets and concentrating income-generating jobs in a small number of capital-and-technology-intensive rather than labor-intensive employment; and
> - it creates extreme inequalities where large numbers of people at bottom scales fall into absolute poverty (Goulet, 2004a, p. 11, emphasis added).

Here, Goulet continues to warn that development must be economically as well as politically and ethically sustainable. To Goulet, who invested his life in ensuring a role for ethics in the discourse, it is not a question, it is an axiom. Note particularly his emphatic opposition to the concentration on creation of what he calls "capital-and-technology-intensive" work. Instead, he calls for a much broader distribution of jobs in labor-intensive areas—allowing more people the dignity of participation (see also Haq, 1973).

According to Goulet, ethically sustainable development must involve: (1) the individual, including his or her inter-personal relationships, (2) the society, including the more "local" aspects of society as well as the broader aspects at the nation-state level, and (3) the globe, including international relationships of the nation-state and the "inter-natural" relationships of individuals and nation-states to nature. Note how Goulet ties all three aspects (individual, societal, global) together when he says "ethical judgments regarding the good life, the just society, and the stance of human societies toward nature always serve, explicitly or implicitly, as operational criteria for development decisions" (Goulet, 2004a, p. 5).

In keeping with this three-tiered model, Goulet outlines three questions that must be addressed by the sustainable development enterprise and, by extension, the sustainability discourse. First, the concept of the "good life" must be defined. The capabilities theorists discussed later are working hard to finalize this definition and much progress has been made. Second, the question of legitimate government must be resolved. Leadership by the United Nations and the UN Development Programme is providing influence there. Third, Goulet reminds us to adopt an appropriate stance toward nature—a clear indicator of his support for the environmental aspects of the sustainability discourse. After defining the three major issues, Goulet says "provision by society of satisfactory conceptual, institutional, and behavioral answers to these three questions is what constitutes *authentic* development" (Goulet, 2004a, p. 8, emphasis added). This concept of authenticity is absolutely vital in Goulet's push for sustainable development. Clearly, sustainable development is not only about economics and the environment, but includes an important social and ethical aspect without which it would be crippled.

The Natural Step and Robèrt's Reductionist Ethics

Near the mid-point of his career, Goulet began to fear the development community had lost its way. Worrying openly that it had devolved into scientism (cf. Pigliucci, 2008), he complained about those who considered "non-scientific modes of rationality retrograde" and suggested "this reductionist approach to knowledge leads most development specialists to become one-eyed giants: scientists lacking wisdom" (Goulet, 1980, p. 481). Given the date of these remarks, Goulet was obviously not speaking of *The Natural Step* framework, but he would have likely

responded similarly after reviewing Robèrt's claims about TNS being a scientific method for achieving sustainability.

The intent of this research was to demonstrate that the ethical dimensions of the sustainability discourse receive, at best, only weak coverage in *The Natural Step* framework. Ultimately, based on the admissions of Robèrt himself (cf. Missimer et al. 2010), it became apparent that this deficiency has become known over time and is now openly confessed. Inventors and early contributors to the framework agree that beyond mentioning the equity requirements in System Condition #4 (Robèrt et al, 2000, p. 245), there is little mention of ethics in the framework. Further, there is no decomposition of SC4 that demands or facilitates enforcement of these lofty goals.

Two approaches might be pursued in demonstrating these particular gaps in TNS, though these may be unnecessary given the pioneer's admissions. First, it could be demonstrated that any framework based solely on reductionist science and deriving its principles from the second law of thermodynamics must necessarily miss important ethical and social dimensions in its extent (cf. Ludwig, Hilborn & Walters, 1993; Cairns, 2001). While TNS adherents can certainly continue to hold to the scientific validity of the framework, it must be admitted that despite recent advances in neuroscience, the ethical, legal, and social issues of the day will not soon yield to solely technological fixes. Further, a framework need not be lashed to science to be successfully employed—and it is unclear why that gambit was even chosen. Perhaps it stems from that often reinforced post-Enlightenment impression that if something is expressly scientific it must be "true." Moreover, while many scholars have attempted to either confirm or deny that TNS is adequately based on the scientific method and firmly rooted in the second law of thermodynamics, even such "scientific" claims are ultimately a matter of judgment and hence suspect. Paul Upham (2000a, 2000b, 2000c) has done the most work to demonstrate the failings of TNS in this regard and has demonstrated in many publications (and a dissertation) that it fails as a completely scientific model. But, despite the need to perhaps remediate their claims to the contrary, TNS is *not* damaged by these findings since it can be argued that it has done no small amount of good *without* requiring scientific rigor.

The second—and far more time consuming—effort involves review of hundreds of TNS case studies that are available on the web. This documentation is comprised of reports of those who followed TNS framework principles in developing sustainability plans and projects for groups, clubs, cities, departments, firms, and governments. After perusing dozens of these, it became obvious that they uniformly focus on environmental sustainability initiatives and almost completely ignore the ethical and social dimensions. This is not surprising given Robèrt's confession that the ethical dimensions are given short shrift in the TNS framework. These reports contain rare references to concepts like "ethics" and "equity" and when they appear, they offer mere lip-service and do not constitute a primary (or proportionate) focus of the efforts. This incomplete review obviously leaves many reports that *might* go into more detail about ethics and social concerns—but again, such exhaustive review might be unnecessary now. That work can be completed in the future and the results are not reported here. Still, despite their apparent lack of depth in social and ethical themes, these documented efforts have accomplished much in raising awareness of environmental concerns and have certainly served to further the sustainability discourse. In that regard, TNS has done much good.

Most interestingly, prior to Robèrt's admissions that TNS is deficient in the ethical arena, it appears that attempts *were* made to defend it and even to propose that its focus on science made it *uniquely* capable of delivering results in the ethical and social dimensions of the sustainability discourse. Robèrt and co-authors (Johnston et al., 2008) even go so far as to suggest that lack of consensus over current ethical standards is due to their origins in a non-biophysical discipline, and that "the scientific authority of the biophysical model from which the TNS principles derive" can rescue us from discord in the definition of ethics (p. 65) . This very impassioned paper attempts to "reclaim" the sustainability discourse as a rigorous scientific discourse that will serve to inexorably lead us to clear ethical practices. Johnston et al. (2008) attempt to argue that not only is TNS rigorously scientific but that it is also firmly ethical and that the ethical dimensions of sustainability are measurable under their firmly scientific regime. Their suggestions, however, can only be considered as wildly extreme, normative applications of the precautionary principle and are, thus, problematic (interestingly, Upham, 2000a, hinted this might occur). For example, they take a "moral stance rooted in the thermodynamic and ecological realities of the world's underpinning life support systems" (p. 64) and from this "moral" position declare a laundry list of current practices to be unequivocally "wrong." First, it is difficult to understand how "thermodynamic and ecological realities" provide foundation for a moral stance, and the authors provide no guidance in that respect. Second, it is even less obvious how that stance leads to their list of moral imperatives which, for example, specifically precludes the use of compounds foreign to nature, the use of fossil fuels, use of genetically engineered organisms, and use of nuclear power. (p. 64). While

scholars are certainly free to question the wisdom or extent of such human technologies, it is a difficult endeavor to claim that "thermodynamics" has apparently decreed such practices to be "wrong." Later, they take a highly provocative position on required population controls by suggesting that global carrying capacity has already been surpassed, but they leave the responsibility for their required ethical outcome (significant global population decrease) to someone else (p. 65). All this is done while claiming that

> the four principles developed by The Natural Step (TNS) can help identify ethical issues which need to be addressed, freeing them from the dogma of non-scientific belief systems and providing a robust and authoritative framework from which to address contentious issues (Johnston et al., 2008, p. 66).

With very few hints provided, their approach remains entirely opaque. But since space doesn't permit further analysis and Robèrt seems to have moved beyond this extreme position in publishing with Missimer et al. (2010), further review of this work can be left for another time.

Fortunately, cooler heads prevailed and we wouldn't wait long for the aforementioned confession that TNS was deficient in its coverage of ethical and social themes (Missimer et al. 2010). Unfortunately, in this important admission and turn-around for Robèrt, Missimer et al. published only a taunt. Beyond the confession, there was only a promise of future work that is apparently still forthcoming. To abbreviate the wait, a proposal for finishing that work is the topic of the next section. Robèrt may have forgotten Goulet, but reparation is not overly complicated.

The Natural Step *toward* Ethics

Among the mistakes of TNS is attempting to define the ethical dimensions of sustainability with a negative statement. Missimer et al. (2010) suggest "the social system must not be systematically degraded" (p.1110). But this implies that the social system we have now might be worth sustaining—a point vigorously refuted by Goulet (see above, cf. Goulet, 2004a, p. 6). Further, in the original definition of System Condition #4, by suggesting that the social dimensions are such that we must remove "conditions that systematically undermine people's capacity to meet their needs" (Robèrt et al., 2000), Robèrt comes very close to *not* forgetting Goulet, but remains woefully deficient by not proposing that capacities and capabilities be *expanded* where necessary. My proposal is that System Condition #4 must be pitched as a positive statement along the lines of "increase human capacity to meet human needs." Not only would this more adequately reflect the direction proposed by the Brundtland Commission, but it would recognize that other scholars have done much work to identify these capacity-increasing approaches. Robèrt need not wonder how his sustainability framework can be specifically ethical as well as rigorously scientific. What Goulet started was available to him all along.

In order to include a more thoughtful social and ethical dimension in his framework, Robèrt must integrate the thought of Goulet and his successors, the capabilities scholars. These thinkers provide a way forward which, incidentally, also opens the door to measurement (though proceeding with caution is advised). Recall that Goulet's first priority in his three-step plan (see above) was to establish a more measurable definition of the "good life." This is directly related to the concept of building human capacities and capabilities. It is not my purpose herein to provide a complete history or a critique of measurement in the human development literature (see, Lindenberg, 2002 for a brief overview). Instead, I mean only to point out how the emphasis has changed over time and to suggest there has been an unmistakable merging of human development with sustainability thought that makes this proposal imminently actionable.

It is interesting to see that as late as 2005, the emphasis on measurement still maintained a very neoclassical orientation, though the transition to more specific "human development measures" was becoming obvious. Enrico Giovannini, as chief statistician for the OECD, wrote:

> There are several ways to measure the overall situation of a country, but three attract particular attention. The first extends traditional economic accounts based on GDP.... A second way is to develop composite indicators.... And the third seeks to identify a certain number of key indicators covering economic, social and environmental domains (Giovannini, 2005, p. 24).

The "key indicators," which include items like healthcare, air pollution, and youth employment, demonstrate the shift away from GDP and other purely economic metrics—but they are still listed last by Giovannini, according them an "also ran" status. Notice, however, that this tendency toward inclusion of social factors is unmistakable and it is not accidental that Elkington's "triple bottom line" of the sustainability discourse (economic, social, and environmental) is specifically called out by Giovannini.

In their *Report by the Commission on the Measurement of Economic Performance and Social Progress* (see *Mis-measuring Our Lives*, Stiglitz et al., 2010), the Stiglitz Commission upholds the value of the economic measures, arguing that, after all, many indicators of a country's well-being *are* economic. But importantly, they outline three kinds of measures that provide a balanced view of overall well-being that would please Goulet. I have illustrated these in Figure 2 as three axes of measures: (1) economic, (2) quality of life, and (3) sustainability/future. The economic measures are the traditional metrics associated with neoclassical growth approaches. The inclusion of the quality of life measures is a nod toward the capabilities approach espoused by the UNDP (discussed further below). But now, not only are these listed as equals with the economic measures, they are given increasing importance in the overall suite of measures. The inclusion of so-called sustainability metrics is unprecedented and, while such metrics are still in planning, these represent a very encouraging step. The report advocates a "shift of emphasis from a production-oriented measurement system to one focused on the well-being of current and future generations, i.e., *toward broader measures of social progress*" (Stiglitz et al., 2010, p. 7, emphasis added). Indeed, throughout the report this becomes an oft-repeated mantra indicating a drive to "shift emphasis from measuring economic production to measuring people's well-being. And measures of well-being should be put in the context of sustainability" (Stiglitz et al., 2010, p. 10).

Note as well that Figure 2 shows an evolution in thinking toward a more complete sustainability-based comprehension of human development. Initially, the neoclassical approaches were thought to be all that was required. Experience in the management of human development programs eventually lead organizations like the UNDP to focus on more humanitarian measures of progress. Now that the sustainability discourse has expanded to include the social dimensions, Stiglitz et al. are proposing a more comprehensive and inclusive toolbox of measures. For now, this can be envisioned as a third axes of measures (which Stiglitz et al. say they are defining), but the future probably a holds a more nuanced reworking and roll-out of what might be called true sustainability metrics.

As indicated above, the Stiglitz Commission follows Goulet in speaking of "well-being," but how is this "good life" to be framed when for some it seems to imply a life full of material comforts, while for others it consists simply of friends and family? Because of the impressive foundational work of visionaries like Haq, Sen, and Nussbaum, the Stiglitz Commission is able to leverage much prior art in this regard and defines quality of life as "the full range of factors that make life worth living, including those that are not traded in markets and not captured by monetary measures" (Stiglitz et al., 2010, p. 92). Goulet never said it better. If sustainable development is about human flourishing, then any sustainability framework must track the quality of life indicators, both subjective and objective. There has been much effort expended in defining what those are.

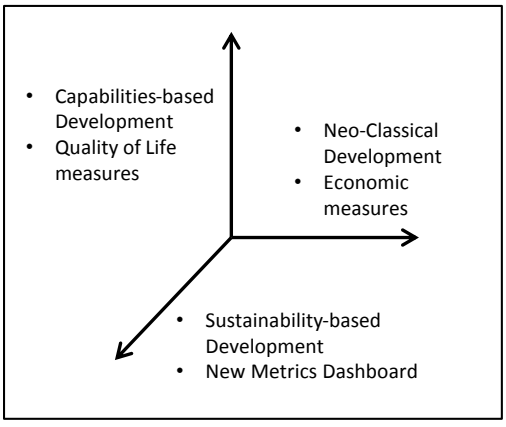

Figure 2. Three Dimensions of Development Measures

Martha Nussbaum, a frequent contributor to the capabilities dialog, defines (up to) ten specific capabilities that comprise human flourishing (Nussbaum, 1998, pp. 318-320; 1992, p. 222). See Appendix 1 for specific details.

These ten capabilities cross all three major axes of the Stiglitz Commission's concept of well-being. In fact, while the dimensions of human flourishing have been defined and redefined variously (Alkire & Black, 1998; Finnis, 1980; Grisez et al., 1987), they tend to boil down to such "capabilities" as exemplified in the following list (see Alkire, 2002 for a thorough review of published capabilities lists):

1. Life, its maintenance and transmission, health and safety;
2. Knowledge and appreciation of beauty;
3. Some degree of excellence in work and play;
4. Friendship, harmony between and among individuals and groups of persons, living at peace with others, neighborliness;
5. Self-Integration, harmony between the different dimensions of the person, inner peace;
6. Coherent self-determination, or practical reasonableness, harmony among one's judgments, choices, and performances, peace of conscience and consistency between one's self and its expression (when exercised by a community it may be better described as "participation");
7. Transcendence, or religion, harmony with a more-than-human source of meaning and value.
(list adapted from Alkire & Black, 1998, pp. 267-8).

While Alkire & Black (1998) refer to these as "dimensions of human flourishing," they admit they can be called dimensions of human functioning (Sen, 1999, p. 131) and thus in Sen's (and Nussbam's) words would constitute a list of basic "capabilities." Alkire and Black also point out that since these are "the reasons out of which people act in seeking well-being" they also can be construed as the *dimensions* (Finnis, 1980) of human development. In a nutshell then, these "capabilities" would be what ultimately defines quality of life, human well-being, and the "good life." Schutte summarizes well: "though there may be some disagreement as to what counts as human well-being, in general we say that this means the capacity for people to lead productive fulfilling lives" (Schutte, 2000, p. 456).

The report of the Stiglitz Commission (Stiglitz et al., 2010) contains its own list of the capabilities that define well-being (see Appendix 1), and it emphasizes an important nuance that has not been missed in the literature: that *these dimensions should be considered simultaneously*. Though her list is slightly different (again, see Appendix 1), this need for simultaneity in measurement is reflected by Nussbaum who says:

> The "capabilities approach," as I conceive it, claims that a life that lacks any one of these capabilities, no matter what else it has, will fall short of being a good human life. So it would be reasonable to take these things as a focus for concern in assessing the quality of life in a country and asking about the role of public policy in meeting human needs.... The list is, emphatically, a list of separate components. *We cannot satisfy the need for one of them by giving a larger amount of another one*. All are of central importance and all are distinct in quality (Nussbaum, 1998, p. 320, emphasis added).

Nussbaum's belief reflects Liebig's Law of the Minimum as applied to human quality of life. Liebig's Law, adapted for sustainable human development, would state that human quality of life is controlled not by the *total* capabilities available, but by the *scarcest* capability (the limiting factor). All capabilities are not only equally important, but equally vital. In justifying her extended list of capabilities, Nussbaum reminds us that "the approach that measures quality of life in terms of possessions frequently will fail to go deep enough to diagnose obstacles to functioning that can be present in a society even when resources are spread around adequately" (Nussbaum, 1998, p. 315). This reinforces something Goulet recognized very early: possessions are, at best, a superficial and transient indicator of human well-being.

The capabilities approach is very careful to avoid being pigeon-holed as an equality-of-outcomes approach. Instead practitioners must remember their goal is to provide *capabilities*, not outcomes (Nussbaum, 1992, p. 221). In this, capabilities theorists are espousing a very simple principle that can be summarized by the old proverb: You can lead a horse to water, but you can't make it drink. Adapted for human development, this would be phrased as "you can provide access to capabilities, but you can't make people perform." Instead, you must offer them the dignifying option of succeeding themselves. However, even this simple rephrasing ignores an important aspect of the original proverb: *leading*. Even if water is provided and the horse is free to come and drink, it must still be led. Just like the horse in our proverb, people need guidance and leadership. They must be led to the capability access points. Simply providing the access is insufficient. Introducing new policies and capabilities is worthless unless the word gets out and people are led to participate. Not only can progress in delivering capabilities be measured, but progress in

leadership can also be monitored and measured. It is perhaps obvious that, to be legitimately so-called, such progress in the provision of capabilities (ethical progress) should be sustainable. This implies a significant thrust toward the development of legitimate government. Of course, as shown above, between Goulet and the Brundtland Commission, this thinking is not new.

Given the large amount of work already accomplished in the ethical dimensions of sustainability and sustainable development, it seems strange that Robèrt would miss it. The proposed positive approach of providing for human capabilities can either be substituted for, or be attached directly below TNS System Condition #4. Such a connection between Robèrt's framework and the work done in human development can contribute greatly to the sustainability movement—especially as it is further decomposed and rolled-out in a variety of sustainability plans. This integration is depicted in Figure 3.

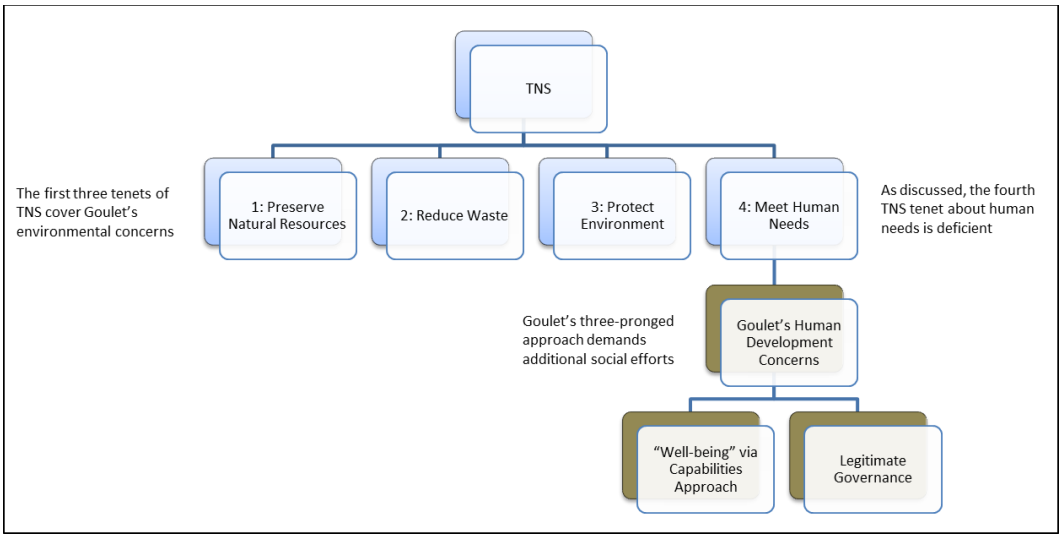

Figure 3. TNS Augmented by Goulet

If Robèrt integrates the capabilities model into his TNS framework, Goulet's interest in providing the "good life" can be satisfied. The capabilities theorists discussed above are working hard to finalize this definition and much progress has been made. Goulet's question of "legitimate government" must be resolved, but much progress has been made in this regard as well. Human participation in governance is a common theme from most sustainability and development theorists. The push toward democratic (or other participatory) forms of government is well established and is even stressed by the United Nations (UNDP, 2012). The goal is to emphasize rule of law and move away from totalitarianism. In a world where nation-states form regularly, we must be sure that constitutions defining such rule of law are legitimate and not merely ratified by a few and forced on the rest. While it is beyond my scope here, it cannot be denied that multi-national corporations add to the inherent complexity of governance. This must be addressed in future research. Finally, Goulet's third major issue reminds us to adopt an appropriate stance toward nature. It is quite clear that Robèrt's framework excels in this dimension.

Conclusion

It is important to realize that TNS is valuable and useful. In fact, as an *ecological* sustainability framework, TNS is arguably exemplary. Still, we must worry about calling it a *comprehensive* sustainability framework if it doesn't include the important ethical and social dimensions of the discourse. Robèrt's omission in the area of ethical and social dimensions of sustainability was not purposeful, just pragmatic. It certainly isn't fatal and, once it is admitted, work can begin to rectify the deficiencies. This paper has proposed a simple mechanism for completing the TNS framework in the social and ethical dimensions. Robèrt simply forgot Goulet. Integrating Goulet's humanitarian interests and the capabilities approach of his successors serves to make Robèrt's framework more comprehensive, though no framework ever need be *complete*. TNS may continue to need rework and rethinking over time, but with the inclusion of Goulet's thought and the capabilities approach to sustainable human development, it can begin to be everything it was intended to be.

Appendix 1

Sabina Alkire (2002) has compiled a "list of capabilities lists" from a variety of thinkers, though it appears no attempt was made to map the content of the lists to each other—presenting them only side by side. Table 1 shows the more recent capabilities list of the Stiglitz Commission (Stiglitz et al., 2010) along with just two of the other lists and aligns the capabilities in order to demonstrate their similarities and differences.

Table 1. Capabilities Lists Mapped by Similarities

Grisez, et al. (from Alkire, 2002, p. 203)	**Nussbaum (1998, p. 318-320; cf. 1992, p. 222)**	**Stiglitz et al. (2010, p. 15)**
1. Life itself, its maintenance and transmission, health and safety	1. Life, 2. Bodily health and integrity, 3. Pleasure and pain	1. Material living standards (income, consumption and wealth), 2. Health
2. Knowledge and appreciation of beauty	4. Senses, imagination and thought, 6. Practical reason	3. Education
3. Some degree of excellence in work and play	6. Practical reason, 9. Play	4. Personal activities including work
4. Friendship, harmony between and among individuals and groups of persons, living at peace with others, neighborliness	5. Emotions, 7. Affiliation	6. Social connections and relationships, 8. Security, of an economic as well as a physical nature
5. Self-Integration, harmony between the different dimensions of the person, inner peace	4. Senses, imagination and thought	
6. Coherent self-determination, or practical reasonableness, harmony among one's judgments, choices, and performances, peace of conscience and consistency between one's self and its expression (when exercised by a community it may be better described as "participation")	6. Practical reason	5. Political voice and governance
7. Transcendence, or religion, harmony with a more-than-human source of meaning and value	4. Senses, imagination and thought	
	8. Other species	7. Environment (present and future conditions)

References

Alkire, S. & Black, R. (1997). A Practical Reasoning Theory of Development Ethics. *Journal of International Development*. 9(2) 263-279.

Alkire, S. (2002). Dimensions of Human Development. *World Development*. 30(2) 181–205.

Anand, S. & Sen, A. (2000). Human Development and Economic Sustainability. *World Development*. 28(12) 2029-2049.

Bensimon, C.M. and Benatar, S.R. (2006). Developing Sustainability: A New Metaphor for Progress. *Theoretical Medicine and Bioethics, 27*:59-79.

Buchanan, J. M. (1994). *Ethics and Economic Progress.* Norman, OK: University of Oklahoma Press.

Cairns, J. (2001). Equity, fairness, and the development of a sustainability ethos. *Ethics in Science and Environmental Politics, 2001*: 1-7.

Clark, D. A. (2002). Development Ethics: A Research Agenda. *International Journal of Social Economics*. 29(11) 830-848.

Coates, W. H. (1948). What Is Progress? *Journal of Philosophy*. 45(3) 67-77.

Cowan, D.M. et al. (2010). A cross-sectional analysis of reported corporate environmental sustainability practices. *Regulatory Toxicology and Pharmacology, 58*(2010) 524–538.

Crocker, D. A. (2008). *Ethics of Global Development: Agency, Capability, and Deliberative Democracy*. Cambridge, UK: Cambridge University Press.

Date, A. (1981). Understanding Appropriate Technology. In *Methods for Development Planning*. UNESCO Press. pp. 201-217.

Date, A. (1984). Understanding Appropriate Technology. In Pradip Ghosh (Ed.) *Appropriate Technology in Third World Development*. Westport, CN: Greenwood Press. pp. 163-183.

Dole, C. F. (1909). *The Ethics of Progress: Or, the Theory and the Practice by Which Civilization Proceeds*, New York: Thomas Y. Crowell & Co. Publishers.

Elkington, J. (1997) *Cannibals with Forks: the Triple Bottom Line of 21st Century Business*. Oxford: Capstone.

Farache, F. and Perks, K.J. (2010). CSR advertisements: a legitimacy tool? *Corporate Communications: An International Journal, 15*(3) 235-248.

Finnis, J. (1980). *Natural Law and Natural Rights*. Oxford: Clarendon Press.

Friedman, B. (2005). *Moral Consequences of Economic Growth*. Knopf Publishing Group.

Gasper, D. (2008). Denis Goulet and the Project of Development Ethics: Choices in Methodology, Focus and Organization. *Journal of Human Development*. 9(3) 453-474.

Gibbs, M. (2005). The Right to Development and Indigenous Peoples: Lessons from New Zealand. *World Development*. 33(8) 1365-1378.

Gilleo, M. P. (2001). Ethical Issues in the Global Economy. *Bulletin of Science, Technology & Society*. 21(4) 272-280.

Giovannini, E. (2005). Progress measuring progress. *The OECD Observer*. 2005(246/247) 23-24.

Goulet, D. (1960). Pour une éthique moderne du développement. *Développement et Civilisations*, September 3, pp. 10–23. [Translated into English in Goulet (2006)].

Goulet, D. (1971). *The Cruel Choice*. New York: Atheneum.

Goulet, D. (1979). Development as Liberation: Policy Lessons from Case Studies. *World Development, 7*: 555–566.

Goulet, D. (1980). Development Experts: The One-Eyed Giants. *World Development, 8*: 481-489.

Goulet, D. (1983a). Obstacles to World Development: An Ethical Reflection. *World Development*. 11(1) 609-624.

Goulet, D. (1983b). Value Orientation in Technology Policy. *Bulletin of Science, Technology & Society*, 1983(3) 299-310.

Goulet, D. (1995). *Development Ethics: A New Discipline*. New York: The Apex Press.

Goulet, D. (1999). Defining Wealth, Rethinking Development, Achieving Sustainability. *Humanomics, 15*(2/3) 42-59

Goulet, D. (2004a). Is Sustainable Development Possible in a Globalized World? *Humanomics. 20*(1/2) 3-16.

Goulet, D. (2004b). Changing Development Debates Under Globalization: The Evolving Nature of Development in the Light of Globalization. *Journal of Law & Social Challenges, 6*: 1-17.

Goulet, D. (2006). *Development Ethics at Work: Explorations 1960–2002*, NewYork: Routledge.

Grisez, G., Boyle, J. and Finnis, J. (1987). Practical Principles, Moral Truth and Ultimate Ends. *American Journal of Jurisprudence*. 1987(32) 99-151.

Haq, M. (1973). Crisis in development strategies. *World Development, 1*(7) 29-32.

Haque, W. (1975). *Towards a theory of rural development*. Bangkok: United Nations Asian and Pacific Development Institute.
Johnston, P., Everard, M., Santillo, D., Robèrt, K-H. (2007). Reclaiming the definition of sustainability. *Environmental Science and Pollution Research International, 14*(1) 60-66.
Jonas, H. (1984). *The Imperative of Responsibility*. Chicago, IL: University of Chicago Press.
Kelly, W. (1970). Anti-pollution poster for Earth Day.
King, M.C. (2008). What Sustainability Should Mean. *Challenge, 51*(2) 27–39.
Landes, D. (1969, 2003). *The Unbound Prometheus*, Cambridge University Press.
Lewis, C.S. (1950). *Chronicles of Narnia: The Lion, The Witch, and the Wardrobe*.
Light, A. (2001). Moral Progress amid Technological Change. *The Journal of Speculative Philosophy, 15*(3) 195-200.
Lindenberg, M. (2002). Measuring Household Livelihood Security at the Family and Community Level in the Developing World. *World Development, 30*(2) 301-318.
Ludwig, D., Hilborn, R., and Walters, C. (1993). Uncertainty, Resource Exploitation, and Conservation: Lessons from History. *Science, 260*: 17, 36.
Marangos, J. & Astroulakis, N. (2009). The Institutional Foundation of Development Ethics. *Journal of Economic Issues, 43*(2) 381-388.
McLoughlin, L.C. (2004). Is Sustainability a Breakfast Cereal? Public Program Based Research into Community Understandings of Sustainability. *Australian Journal of Environmental Education, 20*(1) 115-127.
Nisbet, R. (1980). *History of the Idea of Progress*. New York: Basic Books.
Nussbaum, M. (1992). Human functioning and social justice: in defense of Aristotelian essentialism. *Political Theory, 20*(2) 202–246.
Nussbaum, M. (1993). Non-relative virtues: an Aristotelian approach. In Nussbaum, M. & Sen A. (Eds.), *The Quality of Life*. Oxford: Clarendon Press.
Nussbaum, M. (1995). Aristotle on human nature and the foundations of ethics. In Altham, J. & Harrison, R. (Eds.), *World mind and ethics: Essays on the ethical philosophy of Bernard Williams*. Cambridge: Cambridge University Press.
Nussbaum, M. (1998). The good as discipline, the good as freedom. In Crocker, D. & Linden, T. (Eds.), *Ethics of consumption: the good life, justice and global stewardship*. Lanham, MD: Rowman & Littlefield.
Nussbaum, M., & Sen, A. (Eds.). (1993). *The Quality of Life*. Oxford: Clarendon Press.
Parr, A. (2009). *Hijacking Sustainability*. Cambridge, MA: MIT Press.
Phillipon, D.J. (2012). Sustainability and the Humanities: An Extensive Pleasure. *American Literary History, 24*(1) 163-179.
Pigliucci, M. (2008). Between Scientism and Postmodernism. Skeptic, 14(2) 70-72.Qizilbash, M. (1996). Ethical Development. *World Development, 24*(7) 1209-1221.
Reid, A. and Petocz, P. (2006). University Lecturers' Understanding of Sustainability. *Higher Education, 51*(1) 105-123.
Ritchey, T. (2005). *Wicked Problems: Structuring Social Messes with Morphological Analysis*. Swedish Morphological Society. Available online at: www.swemorph.com/pdf/wp.pdf.
Rittel, H. and Webber, M. (1973). Dilemmas in a General Theory of Planning. *Policy Sciences, 4*(2) 155-169.
Robèrt, K. (2000). Tools and concepts for sustainable development: how do they relate to a general framework for sustainable development, and to each other? *Journal of Cleaner Production, 8*(3) 243-254.
Robèrt, K., et al. (2002). Strategic sustainable development — selection, design and synergies of applied tools. *Journal of Cleaner Production, 10*(3) 197-214.
Rosenhead, J. (1996). What's the problem? An introduction to problem structuring methods. *Interfaces, 26*(6) 117-131.
Sagasti, F. (1997). Development, Knowledge and the Baconian Age. *World Development, 25*(10) 1561-1568.
Saha, M. and Darnton, G. (2005). Green Companies or Green *Con*-panies: Are companies really green, or are they pretending to be? *Business and Society Review, 110*(2) 117–157.
Schutte, O. (2000). Political and Market Development: An Ethical Appraisal. *Journal of Social Philosophy, 31*(4) 453-464.
Seager, T.P. (2008). The Sustainability Spectrum and the Sciences of Sustainability. *Business Strategy and the Environment, 17*:444-453.
Sen, A. (1987). *On Ethics and Economics*. Malden, MA: Blackwell Publishing.
Sen, A. (1999). *Development as Freedom*. New York: Alfred A. Knopf, Inc.

Star, S.L. (2010). This is Not a Boundary Object: Reflections on the Origin of a Concept. *Science, Technology, & Human Values, 35*(5) 601-617.
Star, S.L. and Griesemer, J. (1989). Institutional ecology, 'Translations', and Boundary objects: Amateurs and professionals on Berkeley's museum of vertebrate zoology. *Social Studies of Science 19*(3) 387-420.
Stiglitz, J. (2009). Progress, what progress? *The OECD Observer.* 2009(272) 27-28.
Stiglitz, J., Sen, A., Fitoussi, J. (2010). *Mis-measuring Our Lives: Why GDP Doesn't Add Up* (The Report by the Commission on the Measurement of Economic Performance and Social Progress). New York: New Press.
United Nations Development Programme (UNDP) (2012). Democratic Governance. http://www.undp.org/content/undp/en/home/ourwork/democraticgovernance/overview.html
Upham, P. (2000a). An assessment of The Natural Step theory of sustainability. *Journal of Cleaner Production, 8*: 445–454.
Upham, P. (2000b). LCA and Post-hoc Application of Sustainability Criteria: The Case of The Natural Step. *International Journal of LCA, 5*(2)68-72.
Upham, P. (2000c). Scientific consensus on sustainability: the case of The Natural Step. *Sustainable Development, 8*(4) 180-190.
Winston, M. (2011). Sustainability and Social Justice. *International Journal of Business and Social Science, 2*(16) 33-37.
Wood, G.D. (2012). What is Sustainability Studies? *American Literary History, 24*(1) 1-15.
World Commission on Environment and Development (WCED) (1987). *Our Common Future* (The Brundtland Report). New York: Oxford University Press.
Yarrow, A.L. (2009). Sustainability and Intergenerational Solidarity. *Generations, 33*(3) 103-104.