

The challenges and promises of confronting conflicting narratives: a case study on sustainability and well-being

Gaël BRULÉ¹

Institute of Sociology, University of Neuchâtel

Abstract

Ever since the Brundtland report, there have been multiple discussions around the fact that social sustainability needs to be accompanied by ecological and economic sustainability. Sustainability has often been conceptualized as well-being across time for all generations. In this article, I shed light on the complex relationship between well-being and sustainability that is covered by two apparently opposite narratives. On the one hand, there is a vast literature in which authors claim that the two concepts are consonant, meaning that the well-being of individuals and environmental protection tend to go hand in hand. On the other hand, zooming out to a macro level leads to a different story, with happy people in high-income countries polluting more than unhappy people from low-income countries. In this article, by taking two opposite views on the matter – a constructivist view of sustainability not based on resources in the social sciences and a hard, environmental view of sustainability not including social perspectives in the natural sciences –, I show that 1) these two narratives are not incompatible but rather two sides of the same coin that largely ignore each other, 2) there are epistemological and methodological barriers between them, and 3) there are epistemological and methodological complementarities that enable their coexistence.

Keywords: well-being, ecological footprint, narratives, barriers, epistemology, methodology

Introduction

Sustainability has been conceptualized at the intersections of social, economic and environmental components. There have been questions on how to combine environmental sustainability

¹ Gaël Brulé is senior lecturer and associate researcher at the institute of sociology of the university of Neuchâtel (gael.brule@unine.ch).



and social sustainability, whose end is the well-being of individuals (Rogers, Duraiappah, Antons, Munoz, Bai, Fragkias and Gutscher 2012). More generally, its goal is to preserve the current and future well-being by preserving the planet (see Dreyer, Hauschild and Schierbeck 2006, Assef/Frostell 2007).² Many conceptual models tried to merge sustainability and individuals' well-being, and most of these models have assumed that the two concepts are at least partly colinear. Recently, empirical findings have called these initial assumptions into question, and several studies show some degree of dissonance. These studies are presented as two separate narratives: one in which sustainability and well-being go hand in hand (the consonant narrative) and one in which sustainability and well-being contradict each other (the dissonant narrative). I present the state of the debate below, and based on the parallel coexistence of the narratives, I posit that these two sets of results are a Janus-faced story, with studies looking differently at the same problem, i.e., the causal relationship between two political goals, and largely ignoring each other. I then draw conclusions about the difficulties and the promises of presenting them together.

The Consonant Narrative: Studies That Highlight Consonances between Sustainability and Well-Being

A harmonious relationship between environmental protection and well-being is something many of us would like to observe. Since the development of ecological movements in the 1960s, researchers and institutions have looked at them jointly, hoping that they were fully consonant (see Ivan/Mercy 2014, Stiglitz, Sen and Fitoussi 2009). There were good reasons for this glimpse of hope, as we shall see. The hoped-for consonance followed a twofold common-sense rationale: on the one hand, pollution should lead to ill-being, and on the other hand, happy, caring people should be more concerned about protecting the environment than cynical, unhappy people.

There are almost no studies observing a consonant link between sustainability and average well-being at a macro level. One notable exception is the work by Sachs, Jeffrey and De Neve (2020), who observe that the Sustainable Development Index is highly associated with life evaluation. However, concerns regarding the validity of that index have been raised, in particular, the evaluation of environmental protection (see Brulé 2022). There is indirect evidence of the relation between sustainability and well-being comparing, for instance, the top five countries of the Human Sustainable Development Index (Norway, New Zealand, Sweden, Switzerland, and France) and the top five countries of the World Happiness Report (Helliwell, Layard, Sachs and De Neve 2021), which more or less coincide. However, these studies and indexes focus on objective impacts and the differences between socio-demographic groups are not considered relevant.

At a micro level, the relationship is much clearer. The causal relation from pollution to ill-being was evidenced in several studies (e.g., Darcin 2014, Li, Guan, Yu, Westland, Wang, Meng, Wang, He and Tao 2019), and unsurprisingly, there seem to be no studies showing that pollu-

² This leads to different discussion and a debate on the preexistence of the economy or the ecology (*weak* sustainability when the former prevails and *strong* sustainability when the latter prevails). In the weak sustainability paradigm, it is supposed that human capital and natural capital are interchangeable whereas in the strong paradigm, human capital and natural capital are considered as complementary but not interchangeable,

tion brings any form of well-being. The causal relation from well-being to environmental protection was observed mostly at the micro level and showed, *ceteris paribus*, that individuals with higher levels of well-being tend to act in more environmentally conscious ways (see Dolan/Laffan 2016, Kushlev, Drummond, Heintzelman, Diener 2020). In these studies, subjective impacts and declared behaviors are used as proxies for environmental protection and environmental impacts. Controlling for an important number of factors (education, gender, income) means that similar people are compared with each other but that analyses across categories are often overlooked.

The Dissonant Narrative: Studies that Highlight Dissonances between Sustainability and Well-Being

More recently, studies suggesting contradictions between sustainability and well-being have been published (see below). These contradictions usually do not stem from conceptual considerations but rather from empirical, uncontrolled observations at the macro and micro levels.

At the macro level, empirical findings and indexes suggest that sustainability and well-being do not necessarily go hand in hand. The positive correlation between the GDP and the national level environmental impact – the richest countries have the largest impact on the environment³– is indirect evidence of that. The Happy Planet Index in 2019, for instance, shows that the top countries in terms of sustainability (Costa Rica, Mexico, Colombia, Vietnam) are not exactly the happiest and vice versa. Although quite some studies have investigated the links between sustainability and well-being (see Otto, Kim, Dubrovsky, Lucht 2019, Martinez, Mikelsen and Phillips 2021, Cloutier/Pfeiffer 2015), most have done so theoretically or indirectly using self-reports at a micro level or poor proxies of subjective well-being such as gross domestic product (GDP).

At the micro level, the trade-offs between sustainability and well-being are, for instance, traveling to meet friends (good for well-being but not for the environment) or extreme examples such as living in a small apartment (good for the environment but not for well-being) (see Verhofstadt, Van Ootegem, Defloor and Bleys 2016). The tensions around these two components have been highlighted, in particular, in the case of mobility. Not owning a car or not driving for environmental reasons might provide a source of personal discomfort with little gains in terms of environmental impact (Diekmann/Preisendörfer 1998). Reversely, having a car has been positively associated with personal well-being (see Lenzen/Cummins 2013). Furthermore, a positive relation between the value of the car and life satisfaction has been observed among European seniors (Brulé, Ravazzini and Suter 2020).

In a nutshell, that means that well-being and environmental protection are dissonant when taking a macro, statistically uncontrolled stance and when looking at actual impacts, and that they are consonant when looking at a micro level with statistically controlled analyses and reported impacts. A first conclusion that one or the other narrative is not correct might be too simplistic. As I argue below, different researchers investigate different aspects of the same situation and they do so in different ways and in different journals. To grasp the full imbrications of the links between sustainability and well-being, it is important to reconcile the two narratives.

³ Although most of the impacts have been offshored to lower income countries (Lessenich 2016). See also Teixidó-Figueras, Steinberger, Krausmann, Haberl, Wiedmann, Peters, Duro, Kastner 2016, Qasim/Grimes 2021.

To do so, I discuss the epistemological and methodological barriers that prevent researchers from looking at these two narratives jointly by taking the example of constructivism and a mere environmental view of sustainability.

The barriers to reconciling the two narratives

The difference between these two narratives could lead to the impression that there is a confrontation going on in the literature and possibly that researchers disagree on the links between sustainability and well-being. Rather than there being a disagreement, I argue that the researchers of each narrative are almost completely unaware of what the researchers of the other narrative do, although as we shall see, there are exceptions. To illustrate this, I consider two opposite stances on the debate: constructivism, one strand of social sciences not interested in the resources needed to realize well-being, and a strand of natural sciences reducing sustainability to environmental sustainability in the tradition of von Carlowitz.

These two stances use different methods (interviews and surveys versus methods of impact assessment), look at sustainable aspects from different angles (sustainable behaviors and perceptions versus actual impacts), and publish in different journals (*American Journal of Sociology*, *European Journal of Sociology* and other journals related to social sciences versus *Nature*, *Science* and journals dealing with biophysical phenomena (see e.g. Martinez et al. 2021, Cloutier/Pfeiffer 2015 for the social sciences; Gibon, Wood, Arveson, Bergesen, Suh, and Hertwich 2014, Slater, Anderson, Buechel, Dadson, Han, Harrigan, Kelder, Kowal, Lees, Matthews, Murphy and Wilby 2021 for natural sciences). As such, it would be exaggerated to say that they *disagree*; they rather coexist with little interaction.⁴ Different disciplines, thus differences in research questions and theories and thus differences in methods lead to different narratives. That parallel existence of narratives hinders researchers to come up with a coherent message to politicians and the general public. The patterns at a micro level, based on subjective statements, and the patterns at a macro level, based on objective observations, are oppositional but both valid, in the same way that gravity and capillarity can work in two opposite directions at two different scales in the physical world. To understand the lack of dialogue between the two narratives, one must examine the barriers between them. On top of measurement differences at the macro level (see Brulé 2022), there are currently epistemological and methodological barriers that prevent researchers from looking at the two narratives together. These are of prime importance in the case of sustainability because it requires a wide variety of disciplines, combining objective and subjective measures, and a wide variety of methods (Brister 2016). Although the

⁴ There are notable illustrations of collaborations between natural sciences and subfields such as environmental economics, management and some branches of quantitative sociology and anthropology. These have led to projects such as the World Climate Impact Program (which calls for “an integration of climatic, ecological and socio-economic factors entering into complex problems of vital importance to society, such as availability of water, food, and energy” or the Global Climate Change Task Force and publications; see Boone, Galvin, Smith and Stacy 2010, Andenle, Chertow, Moors and Pannell 2020. There are also quite a few academic programmes mixing natural sciences and social sciences, e.g., Sustainable Management and Technology at EPFL, the master’s degree in Sustainable Development at the University of Basel, master’s degree in Sustainable Technology at KTH.

epistemological and methodological barriers are directly related to one another, I treat them separately to ease comprehension (and possible action).

Epistemological barriers that prevent reconciliation

Unsurprisingly, the difficulties of discussions across disciplines are an ancient affair. Scholars have repeatedly pointed out barriers across disciplines (e.g., scientific language, assumptions, methods) (see Brister 2016) or even conflicts between and across various academic traditions (see Shrivastava, Smith, O'Brien and Zsolnai 2020). Some barriers to interdisciplinary research⁵ are related to cognitive or identitarian issues as scholars invest a lot of their time into a certain scientific episteme (and into being invested into), with its own values, methods, mechanisms (MacLeod 2018; Thorén and Persson 2015). Over time, they develop a certain way of thinking, which far from being perfect is reassuring and efficient in sharing information. Discussing with other schools of thought and in different terms and concepts, with different values and ways of understanding the world requires researchers to move out of their comfort zone. Further, disciplinary identities develop by socializing with peers that have a similar understanding of the way the world works. Such identities entail the benefits of recognition and an ease of communication. Interdisciplinarity requires curiosity and an attraction for the other, whereas academia and funding particularly value conformity (Stormer and Devine 2008). Quite often, the researcher trying to explore other fields and other scientific traditions is, as Carnap (1963:11) states, “not [...] welcomed as a builder of bridges, as he might have expected, but will rather [be] regarded by both sides as an outsider and troublesome intruder.” This is also the case for research on sustainability: “A fundamental challenge is bringing together the research work in the biophysical and social sciences communities through coequal intellectual partnerships” (Weaver et al. 2015:656). For instance, moving toward sustainability requires the capacity to integrate ecological questions that must be observed from an objective perspective, and its results should be organized and disseminated in a way that can reach key institutions and key actors.

Much high-quality science illuminates environmental problems, but it is often poorly organized and incomplete. It often does not have an interdisciplinary integration and synthesis that permit problems to be seen in a larger context, especially in an ecologically sensitive and sensible one. It is often not geared to the scale needed to shed light on environmental problems of long-term importance to human well-being. In short, much essential knowledge is not capable of guiding the development of policy, heightening public awareness, or even informing and enlightening political debate (Brewer, 1995: 4).

This quote clearly highlights the need for an objective look at ecosystems as well as an integration of the knowledge into a social and political system. This has also been highlighted by Victor (2015) who argues that the biophysical changes are now well known but that there is a

⁵ Interdisciplinarity can be defined as follows: “Interdisciplinarity may be regarded as a step up from multidisciplinary. Interdisciplinary studies focus on addressing specific ‘real world’ system problems and, as a result, the research process, forces participants (from a variety of unrelated disciplines) to cross boundaries to create new knowledge” (Stock/Burton 2011:1096).

lack of capacity to change societies.⁶ This means that both the stories of natural and social sciences are required to understand the relationship between a deeply sociocultural phenomenon (well-being) and a fundamentally physical one (the state of our planet).

Methodological barriers

Different epistemological traditions are usually characterized by different methodologies. In our case, this leads in particular to differences in assessing impacts. Unlike environmental studies in the natural sciences, which evaluate impacts based on bio-physical accounting (CO₂, land degradation, eutrophication), most of the environmental studies within the social sciences are carried out by surveys,⁷ in particular within the constructivist paradigm. In surveys, people are asked about their (sustainable) behavior and behavioral practices. This stands in contrast to externally observed behavior, for example in observational methods of the social sciences that are more similar to the external evaluation within the natural sciences. This can lead to different scientific languages and perspectives: if, for example, well-being is viewed as a sociocultural construct, the discussion with a neuroscientist who quantifies well-being based on an electronic signal on the screen could prove particularly challenging. Within constructivism, the focus is not on the actual behaviors (and actual consequences on the environment), which means most studies rely on declared behaviors (and declared consequences on the environment). However, there can be large gaps between what individuals say they do and what they actually do. This is known as the *attitude behavior gap* (Lapierre 1934). For instance, Hume (2010:385) notes that the younger generations show “compassion without action”, i.e., they declare strong environmental values but do not necessarily put them into effect with their behaviour in comparison to older generations. The explanation for this gap is that the normative forces around sustainable behaviors urge individuals from certain social groups to identify themselves as environmentally responsible or cautious (Park/Lin 2020, Neckel 2020). To conform to such normative forces without changing their behavior, people use the strategies of attention shifting, low-cost, and subjective rationality (Diekmann/Preisendörfer 1998).⁸

⁶ Victor (2015:27) argues that “fields such as sociology, political science and anthropology are central to understanding how people and societies comprehend and respond to environmental changes and are pivotal in making effective policies to cut emissions and collaborate across the globe. Stern and Dietz (2015) state that social sciences are ready to help climate change understanding by questioning the human-environment links.

⁷ There are notable exceptions where social scientists work with actual impacts, such as ecological footprints or ecological footprint directly; see, e.g., Verhofstadt et al. 2016, Givens 2015, Greiner 2019, Brulé et al. 2022. Also, there are natural scientists who work with surveys and qualitative research; see, e.g., Matthews, Cizauskas and Layton 2019, Bercht 2021.

⁸ *Attention shifting* refers to the tendency of individuals to focus on the type of preservation they are relatively good at and forget the rest. For instance, I over-discuss electricity consumption at home while I neglect the impacts of my SUV. This is also visible at the macro level: for instance, Americans focus on China as the biggest single emitter, while Chinese would focus on the pro rata emissions; or Swiss focusing on the recycling rate of the country while forgetting the strong carbon footprint its inhabitants have on average. *Low-cost strategies* refer to the tendency of individuals to focus on the strategies that are not too demanding from an economic, comfort or psychological perspective. A typical example is recycling whereas high-cost strategies include not to travel far or to not heat one’s home a lot. Traveling is highly valued in western societies and talking about one’s traveling is social and appreciated, thus not traveling comes at a price. Not heating a lot comes at a price in terms of comfort. Finally, the notion of a *subjective rationality strategy* comes from a very rational actor theory in which, for instance, the costs of not using one’s car can come at a high individual cost with very limited environmental benefits.

Another notable difference emerges between quantitative analyses of the natural sciences and the constructivist side of social sciences. In statistics, best practices in multivariate analyses recommend controlling for variables that might interfere with the relationship between two variables. The underlying idea in the case of social sciences is clear: if I look at, for example, the carbon emissions of individuals throughout the population, I will only compare carbon footprints per category, that is, individuals with the same level of income, similar levels of education and who possibly live in comparable areas. The comparisons will happen within these comparable *boxes* and the differences across income groups and education groups are then ascribed a secondary role. The division of the total population in sub-populations shifts the focus on intragroup comparisons and leaves out intergroup comparisons. However, assuming the perspective of an ecosystem, it cares very little about the level of income and education of those who depend on it and rather cares about absolute impacts. Hence the now standard practice (without which social scientists cannot publish) of controlling for a certain number of factors that would otherwise risk clouding the analysis. While the initial intention is laudable, the consequences, often unquestioned, are questionable. As noted by Wright (2021), the now common practice of adding a large number of control variables leads to a large number of blind spots, including the inability to see the entire groups of populations observed. This is a major difference compared to studies from the natural sciences that mostly observe impacts from the natural perspective and which thus look at aggregated human activities.

The example above shows that there is a need to add objective measures to constructivist approaches. It is also true vice versa in that objective measures would benefit from an additional subjective perspective. As studies in the field of natural sciences focus on actual impacts, there are blind spots around the symbolic world and aspects such as aspirations and dreams which could predict tomorrow's behaviors and therefore future environmental impacts. Objective impacts of today and tomorrow are conditioned by current psycho-social contexts that are mostly absent from looking at actual impacts. For instance, Kasser (2002) shows that materialistic people tend to adopt more environmentally destructive behaviors than people that are less materialistic and that unhappy people care less about the preservation of the environment than happy people. This means that understanding the degree of satisfaction or dissatisfaction in people's lives could also help understanding the relation of individuals to their planet.

Solutions for the reconciliation of the two narratives

Combining contradicting views such as natural sciences and constructivism would make it possible to combine "breadth and depth" (Hagen, Øvergård, Helgesen, Fosse and Torp 2019: 254). Although presently, the above-mentioned barriers of disciplinarity hamper joint research around the consonant narrative and the dissonant narrative, we can imagine a multitude of ways to overcome them.

Epistemological possibilities

As recalled by Wasieleski et al. (2021:7), it has been nearly 100 years since the Vienna Circle started promoting “a deeper understanding of the social sciences through the integration of knowledge from the natural sciences.” It is quite unoriginal to call for a development or a reinforcement of interdisciplinarity (see, e.g., Clark/Dickson 2003; Winn/Pogutz 2013; National Academies, Committee on Science, Engineering, and public Policy, Committee on Facilitating Interdisciplinary Research, 2005; Kim/Lee 2019). The rationale for interdisciplinary research is that real-world problems are complex (see, e.g. Thorén/Persson 2013). As previously discussed, many authors have pledged for a deeper dialogue between social and natural sciences (Colucci-Gray, Perazzone, Dodman and Camino 2013). A complementary approach of the social and natural sciences can lead to collecting data and jointly evaluating the contexts in which they have been gathered: “Such a change of epistemology is rooted into participation, deliberation and the gathering of extended-facts where cultural framings and values are the hard components in the face of soft facts” (Colluci-Gray et al. 2013:127). In the previous example of the carbon footprint throughout the society, the coalition of natural sciences and social sciences and their respective lens would possibly lead to observing both absolute impacts within and across different subgroups of populations and the general population.

Social sciences also have a role to play in “elucidating the processes that turn knowledge into action” (Weaver et al. 2014:656). Epistemic communities, i.e., networks of researchers from different disciplines but interested in the same topic (see, e.g., Hass 1992) could be one way to transcend barriers and find a message that is scientifically sound and that could navigate and establish itself in our societies.

Methodological possibilities

There are several ways to combine contradicting views such as constructivism and natural sciences. One way is to use critical realism. It enables to bring together the contextual relation that constructivism highlights with the objective method as prevalent in the natural sciences. According to Alderson (2013), the constructivist research, an approach in which social reality is mentally and socially constructed, treats phenomena of social reality as they are perceived and interpreted, i.e., as if they were (1) constructed by negotiated interactions in a web of subjective perceptions, interactions and values (2) within given sociocultural contexts; (3) contingent and dependent on identities and perceptions and (4) dependent on human perceptions, having no lasting reality of their own. Unlike subjectivists, i.e., theorists who consider knowledge solely as stemming from subjective experience, natural scientists, who focus uniquely on the data of (graspable and measurable) experience, tend to assume that data consists of (1) objective self-evident facts which are independent of values and the social context, (2) independent of whoever observes, records or reports; (3) phenomena that have essential inherent qualities (even without the necessity of humans perceiving them), and (4) that data belong to an existing reality *out there* that scientists can grasp in some way. By combining these two views, critical realism dialectically brings together the gaps and strengths of both approaches by positing that there is a reality out there and that the collection of observations of that *truth* is made by actors that are

entangled in webs of subjectivities and values, which in turn relate to structures of power, inequalities, and socialization. The bases of critical realism are that (1) there are self-evident facts dependent on values and the social context (2) within given sociocultural contexts and (3) they have essential inherent qualities and (4) that there is a reality *out there*. As noted by Alderson: “It sees objectivity as fair, open and impartial, but not neutral, such as when attempts to withhold judgment on the abuses of power can only inadvertently support them” (Alderson 2013:8).

As for the statistical differences between constructivist and natural sciences, going beyond the systematic habit of controlling variables as done in constructivist statistics is not obvious as it is strongly embedded in what is considered as best practices. One way to do this is to combine absolute and relative statistics, ascribing one set to the observations at the global level and one to the control variables, as suggested by Wright (2021:391) to report “results with and without controls, explicitly incorporating controls into hypotheses and research questions, and subjecting controls to the same reliability and validity standards expected of focal measures.” Keeping the raw, uncontrolled relations is particularly important from the perspective of environmental impacts because absolute impacts (i.e., impacts per person) matter more than the relative impacts (i.e., impacts within a certain education or income group). In other words, the fact that among two people A and B *within* a given socioeconomic group – where A has pro-environmental values and pollutes less than B who does not – is valuable information, but what is really interesting from the ecological and environmental point of view is the actual *objective* impact of each person *within and across* given socioeconomic groups. Thus, the fact that A is more virtuous than B should not mask the fact that they pollute much more than C who is from a less privileged social class, but this would be obscured by the multivariate analysis or the analysis. This means that controlled observations are interesting but uncontrolled observations are *vital* for environmental sustainability.

Using critical realism and going beyond the *statistical approach of controlling variables* is one way to understand well-being and sustainability jointly, beyond the specificity of each narrative. This could enable us to place sustainability in a unique methodological framework and thus to understand it fully.⁹

⁹ In addition, there are also methods that can combine the natural and the social sciences. In particular, there are several methods from the natural sciences that are crucial in most environmental accounting studies. Among the many that exist, *life cycle assessment* (LCA) and *environmental impact assessment* (EIA) play a central role. The goal of this method is to assess the environmental impacts of a product or a service from its creation to its disposal or recycling, i.e., from “cradle to grave” (Finnveden, Hauschild, Ekvall, Guinée, Heijungs, Hellweg, Koehler, Pennington and Suh 2009). Although the method focuses primarily on environmental impacts, there have been an increasing scientific interest and developments towards including other sustainability pillars, e.g., economic and social sustainability through life cycle costing (Swarr, Hunkeler, Klöpffer, Pesonen, Ciroth, Brent and Pagan 2011) and social life cycle assessment techniques (Dreyer et al., 2006). These have also been stipulated to be important in a broader sense to study sustainability from the three pillars, by combining their results in what is called *life cycle sustainability assessment* (Sala, Farioli and Zamagni 2013). In recent years, there have also been proposals to integrate well-being into the LCA frameworks (Jørgensen, Lai and Hauschild 2010). This would certainly provide a framework to analyze the relation in specific contexts and for certain products and services more in depth. Also, EIA can provide room for dialogue between natural and social scientists, as depicted by Martinez (2015) in the case of real-life dialogues between mining companies and communities.

Conclusions

I have presented the two narratives around the relation between sustainability and well-being: a harmonious one, in which the two concepts are seen as consonant, and an emerging, disharmonious one, in which the two concepts are seen as possibly conflictual and dissonant. As I have argued, taking the example of constructivism and natural sciences, they are not mutually exclusive. Rather, the two narratives are dealing with the same relationship from different epistemological and methodological perspectives. Macro versus micro, real (objective) impacts versus reported (subjective) impacts, raw relations versus controlled relations, are fundamental differences that make the two narratives strictly distinct. As presented above, there are possibilities to combine these two narratives into one consistent story by moving beyond epistemological and methodological differences. This means there is a need for more epistemic communities to further the possibilities to fully grasp the Janus-faced picture of well-being and sustainability.

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