

Happiness Studies Book Series

Gaël Brulé

Filomena Maggino *Editors*

Metrics of Subjective Well-Being: Limits and Improvements

 Springer

Happiness Studies Book Series

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Gaël Brulé · Filomena Maggino
Editors

Metrics of Subjective Well-Being: Limits and Improvements

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Editors

Gaël Brulé
Erasmus Happiness Economics Research
Organization
Erasmus University Rotterdam
Rotterdam
The Netherlands

Filomena Maggino
Dipartimento di Scienze Statistiche
Sapienza University of Rome
Rome
Italy

and

Department of Sociology
University of Neuchâtel
Neuchâtel
Switzerland

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Preface

The interest around subjective well-being studies in the academic, institutional, and public spheres has risen in the last decades. This trend reflects growing aspirations within the general public for which desires exceed mere material consumption. Scholars of various disciplines have worked since the 1960s on developing tools and studies in order to better grasp the conditions in which people thrive. In spite of these recent evolutions, economic indicators are still largely dominant except for a few local exceptions such as Bhutan or the recent indicators developed by the OECD.

In order to further push subjective well-being (SWB) as a credible political agenda, academics must be able to reflect and communicate on their scientific contribution on this subject. This means that they should know where the scientific exercise resides and where it does not, what is known for certain as well as the current limits and needs for improvements. This requires looking at the necessary strengthening needed in the web of knowledge of studies on subjective well-being.

That is what the present book is about. It aims at addressing existing weaknesses within the field of SWB studies in order to reinforce the scientific and political legitimacy of SWB. It is a reflexive exercise needed in any serious and honest scientific approach. In planning this book, we established three objectives:

First, in spite of recent progresses made in the field, we believe the conceptual framework should still be questioned. The fact that researchers overly use the metrics of SWB should not prevent any debate around measuring the subjective part of well-being from taking place. This should stay an open process with retro loops questioning the existing framework.

Second, although scholars now understand quite well how to measure various dimensions of subjective well-being, we believe it is important to keep looking in the areas of opacity in order to keep improving the understanding of the conditions of use and non-use of the existing metrics.

Third, the largely used comparative framework should also question the conditions of comparability and non-comparability of the different measures. Thus, it is important to keep looking for tools that enable us to better depict the *subjective reality* of actors.

What we cover in this book is necessarily selective and incomplete. It is not aimed at covering these issues, rather showing exiting progress and encouraging further efforts in these directions.

This book is an invitation to reflect on various issues related to the metrics used to measure the subjective component of quality of life. These issues are of conceptual, measurement, and comparability matter. Each of them is tackled in a dedicated part.

The first part aims at tackling conceptual issues. Frank Martela offers a reflection on the measurement of good life (“[Can Good Life be Measured? The Dimensions and Measurability of a Life Worth Living](#)”). Looking at good life through the spectrum of four dimensions (well-being, morality, meaning, and authenticity), this chapter is looking into the measurement of what are considered as the components of good life. This should enable to create what the author considers as a “more balanced view of good life.” According to the author, these four dimensions are not exhaustive, rather a minimum set of dimensions that should enable to measure good life. Next, Mariano Rojas (“[The Subjective Object of Well-Being Studies. Well-being as the Experience of Being Well](#)”) states the inherent subjectivity of the feeling of being well. Therefore, the author simply rejects the notion of objective well-being. Not only is the object measured essentially subjective, the process of constructing metrics itself takes place within the subjective world of the researcher.

The second part looks into measurement issues. In Chapter “[Measures of Happiness: Which to Choose?](#)”, Ruut Veenhoven gives an overview of the strengths and weaknesses of the various measures of happiness. After exploring the various pitfalls of the measurements of various dimensions, advice is provided for choosing a measure based on conceptual, methodological, and pragmatic considerations. In the next chapter (“[Explaining the Decline in Subjective Well-Being Over Time in Panel Data](#)”), Katia Iglesias, Pascale Gazareth, and Christian Suter explore the apparent decline in subjective well-being in Switzerland in the last 15 years. The authors show that once taking into account four different explanations (non-random attrition, panel conditioning, sample refreshment, and aging of participants), there is no actual decline once controlling for these methodological issues. The effects of each issue are hard or sometimes impossible to disentangle. In the next chapter (“[Reducing Current Limitations in Order to Enhance the Quality of Subjective Well-Being Research: The Example of Mindfulness](#)”), Rebecca Shankland, Ilios Kotsou, Caroline Cuny, Lionel Strub, and Nicholas Brown look into various methodological considerations around mindfulness scales. The authors show the conceptual issues around the definition of mindfulness and its operationalization, as well as possible methodological flaws in selecting the candidates that might show an optimism bias. In the following chapter (“[Measuring Indecision in Happiness Studies](#)”), Stefania Capecchi looks into the presence of a permanent indecision factor when respondents express their level of subjective well-being. A flexible class of model named CUB (Combination of discrete uniform and shifted binomial distributions) is used to investigate response artefacts and highlight a refuge option. The model also enables to isolate this effect which deserves specific consideration.

The third part of this book looks into the issues related to comparability. Inga Kristoffersen looks into the differences across individuals in assessing their well-being (“The theoretical case for cardinal and ordinal interpersonal and intrapersonal comparison of life satisfaction scores”). More specifically, the author examines cardinal and ordinal compatibility among individuals and pledges for an improvement of these two types of comparability. The chapter offers possible approaches for reducing arbitrariness and evaluating distinctness, order and (potentially) equidistance of the measurement scale for subjective wellbeing. Ester Macri thereafter compares label scales and rating scales in the Italian context (“[Label Scale and Rating Scale in Subjective Well-Being Measurement](#)”). The author reviews the labelling of scales and shows some differences in between the way people label the different stages of the ladder of life satisfaction. A matching model between label scales and rating scales is shown, and propositions for comparing these scales are given.

Finally, some indications are given as to improve measurability or comparability of data. Dong-Jin Lee, Grace Yu, and Joseph Sirgy show the implications of the cultural dimension on the responses of life satisfaction questions (“[Culture and Well-Being: A Research Agenda Designed to Improve Cross-Cultural Research Involving the Life Satisfaction Construct](#)”). In particular, looking at major cultural dimensions developed in the literature (individualism, authority, competition, risk, time span and status), the authors offer some theoretical considerations and propositions to offer methodological remedies. Next, Kenneth Land, Vicki Lamb, and Emma Zang show, using the US Child and Youth Well-Being Index (CWI) through the spectrum of the Easterlin paradox, that using composite indicator provides a stronger long-term association (“[Objective and Subjective Indices of Well-Being: Resolving the Easterlin Happiness–Income Paradox](#)”). Through this example, the authors bring some brinks of understanding in explaining some of the so-called Easterlin paradox. Finally, Tineke de Jonge focuses on the Scale Interval Method (SIM) and the Reference Distribution Model (RDM) to increase cross-national comparability in surveys (“[Methods to Increase the Comparability in Cross-National Surveys, Highlight on the Scale Interval Method and the Reference Distribution Method](#)”). The first method brings some improvement in understanding the context (culture, language) in which the scale is used, where the second is aimed at increasing the comparability of several questions on the same topic.

These chapters can be read independently but form a consistent whole and contribute all in different ways in understanding better the porosity between objective and subjective when working with subjective well-being.

Rotterdam, The Netherlands
Rome, Italy

Gaël Brulé
Filomena Maggino

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Towards More Complexity in Subjective Well-Being Studies

Gaël Brulé and Filomena Maggino

Only man assigned values to things in order to maintain himself- he created the meaning of things, a human meaning! Therefore, calls he himself: 'Man,' that is: the evaluator.
Thus spoke Zarathustra, Nietzsche.

Abstract The interest in measuring what matters for most individuals has led to the development of many indicators. Scientific approaches have made it possible to improve the incorporation of *subjective* perceptions into *objective* indicators. The perpetual quest for objectivity has led remaining subjectivity to be undesired and be considered as *biases*. This is partly a consequence of the epistemological ground on which Western science is built, in particular the Aristotelian principle of non-contradiction. The present contribution is an invitation to reconsider what is usually considered as “objective” and “subjective” and to incorporate them in a more complex framework in order to gain more understanding within subjective well-being studies in a scientific manner.

Keywords Indicators · Complexity · Objective · Subjective · Epistemology

Measuring What Matters

Since the 1960s, the need for assessing what is important in people’s lives has felt more urgent. While global domestic product (GDP) was being increasingly used to measure social progress, its inability to achieve this felt more obvious, as drastically depicted by Robert Kennedy: GDP “measures everything (...) except that which makes life worthwhile (...)”. The need to complement contemporary indicators to measure growth is obvious; environmental damage, illness or loss of life can all be related to an increase in economic activity and therefore in GDP.

G. Brulé (✉)
University of Neuchâtel, Neuchâtel, Switzerland
e-mail: gael.brule@unine.ch

G. Brulé
Erasmus University of Rotterdam, Rotterdam, The Netherlands

F. Maggino
Sapienza University of Rome, Rome, Italy

Consensus seems to gather around a few concepts that define the progress of a country (or community): *well-being* of individuals (*quality of life*) and society, its fair distribution (*equity*), and sustainable practices (*sustainability*). The notion of *quality of life* can be developed at individual, community or societal level. The concept of *equity* is commonly expressed in terms of wealth or access to basic commodities. The concept of *sustainability* refers to the possible durability of these commodities with reference to present generations' future and future generations. While recognizing the urge to tackle sustainable and equity issues and acknowledging the interpenetration of these three concepts, this book is about *quality of life*, largely in its subjective dimension.

The term "quality of life" is covered by several concepts that all share some common ground around the topic of living well, but that can differ in almost every related aspect: the underlying assumptions, the end goal, the measurement, etc. *Eudaimonic* approaches refer to a set of attributes which are deemed to be desirable, such as meaning, autonomy or environmental mastery, whereas *hedonic* approaches refer to the subjective appraisal of individual's lives. These two approaches cover, in turn, several concepts, with the eudaimonic approach spanning from the pursuit of virtues to the realization of one's true potential and the hedonic approach ranging from mere bodily pleasures to a wider range of feelings and aspirations. Some approaches are mixed and combine eudaimonic and hedonic components.¹ These two dominant concepts of quality of life have long-standing traditions, with Aristotle and Aristippus commonly being referred as the Greek sources of the eudaimonic and hedonic traditions. These two traditions are traceable among contemporary scholars.

In line with the eudaimonic tradition, Fromm (1981) suggests the distinction between those needs (desires) that are only subjectively felt and whose satisfaction leads to momentary pleasures, and those needs that are rooted in human nature, whose realization is conducive to human growth and that produces eudaimonia. In his pioneering work *The fear from freedom* (1941), Fromm expressed the difference between negative freedom ("free from") and positive freedom ("free to"). The latter concept is close to the concept of *capabilities* developed by Sen (1984). The concept of capability differs from utilitarian perspectives insofar as actions and states are important in themselves, and not only in the way they relate to utility. According to Sen (1993, p. 1), well-being should be considered in terms of a person's "ability to do valuable acts or reach valuable states of being". In that sense, individuals' well-being is linked to their capability of developing individually and socially desirable aptitudes. In this sense, quality of life may be conceptualized as a construct that (1) is multidimensional and influenced by personal and environmental factors and their interactions; (2) has the same components for all people; (3) has both subjective and objective components; and (4) is enhanced by

¹See for instance Ventegodt, Merrick, & Andersen (2003) who define the integrative quality-of-life (IQOL) theory according to the following aspects: well-being, satisfaction with life, happiness, meaning in life, the biological information system ("balance"), realizing life potential, fulfilment of needs, and objective factors.

Table 1 Four types of quality of life (Veenhoven, 2000)

	Chances	Results
Environmental	Livability	Usefulness of life
Individual	Life abilities	<i>Subjective appraisal of one's life</i>

self-determination, resources, purpose in life, and a sense of belonging (Cummins, 2005).

In a hedonic lineage, happiness can be seen as the sum of pleasures and pain according to Bentham (1789). Bentham argues that a good society promotes mostly pleasures over pains. This feeling-oriented concept of subjective well-being has been used by contemporary researchers. Kahneman, Diener, & Schwarz (1999, p. 9) define hedonic psychology as the study of “what makes experiences and life pleasant and unpleasant”. In order to show the inherently subjective and personal character of this concept, Veenhoven (2000) distinguishes *presumed* quality of life from *apparent* quality of life: the former being assumed from an external source and the latter being felt by the actual person. Veenhoven defines quality of life defining possibilities/results on one axis and environmental/individual on the other axis. Table 1 represents these four types of quality of life components.²

The emphasis to depict quality of life has moved in the last decades from an environmental, possibility-driven type of quality of life (top-left quadrant) to an individual, results-driven quality of life (bottom-right quadrant). Dilution of authority, post-modernity, rise of the individual, democratization of health, focussing on what matters, the reasons to evoke are numerous and are here less important than the consequences and what is at stake in terms of social policy. Ultimately, quality of life endorses less and less a public, objective dimension and more a private, subjective one. This means that proper indicators are needed to follow that societal trend and measure what matters for individuals. In order to guide policy-makers, social scientists should be as knowledgeable as possible about these indicators, that is to say their conditions of use and non-use, their strengths and weaknesses, what they show as well as what they fail to capture.

Measuring the Subjective Appraisal of One's Life

The need to consider citizens' subjective appraisal arises in consideration of the limits of objective indicators, as reality cannot be fully reduced only to objective facts. Moreover, objective facts are measured referring to a design or a model that is “subjective” in its definition. Subjective well-being can be studied at the collective (community, society) and/or the individual level. There is an increasing interest in using the subjective part of well-being not only as an important component of

²In the bottom-right quadrant, the author refers to «happiness» in the sense of life satisfaction.

quality of life concept, but also as an instrument allowing policies to be evaluated and assessed. From a policy perspective, the need to consider not only subjective well-being but also subjective aspects, in general, arises in particular when assessing policy results and selecting policy objectives (Veenhoven, 2002). The former concerns the need to assess whether a policy has been successfully implemented, e.g. the perceived difference in security after increasing police staff, whereas the latter refers to what people desire, e.g. safer communities and cities. The subjective part of individuals' well-being can be evaluated at a collective level (society or community) or an individual level.

Societal and Community Well-Being

In order to guide policy-makers, well-being can be observed at a collective level. At this level, the literature shows two further sublevels: societal well-being (Stiglitz, 2002; Oishi, 2012) and community well-being (Lee et al., 2015). Although their scales and the political sphere at which they address are different, they are related in several ways. From a general point of view, community and societal well-being involve dimensions such as economic and social cohesion, integration of individuals and groups, social connection, and social ties (social capital), referring to dimensions observed at both micro-level and macro-level:

- social and political activities and engagements (associations, organizations, ...),
- participation (social and political activities and engagements in associations, organizations, ...),
- performance of societal institutions,
- quality of relations (e.g. shared values, conflicts, solidarity),
- social relations (informal networks),
- quality of relations (e.g. shared values, conflicts, solidarity), and
- trust in institutions.

The subjective aspects of community and/or societal well-being can be outlined in the following way:

- Expressed interpersonal trust: in family, relatives, friends, neighbours, colleagues, other social groups, etc.
- Expressed systemic trust: in state, national government, parliament, politics, institutional figures, public administration, political parties, judicial system, law enforcement, public education system, public health system, financial and credit system, enterprises, media/information system, associations, international organizations, European Union, European Commission, European Parliament, religious organizations, etc.
- Perceived sense of belonging (identity): to one's town, region, country, etc.
- Perceived social exclusion: whether one feels or not to be part of the society.

- Perceived solidarity: ones' consideration/concern for other social groups' living conditions (neighbours, elderly people, the unemployed, immigrants, the disabled, etc.).

These aspects entail a representation and an appraisal of various collective dimensions that can be formal or informal, institutional or cultural. These are also linked to the ways one identifies to several communities and thus to the collective part of identity (Melucci, 1995). The way individuals define themselves may influence the way they report their subjective well-being (Diener & Diener, 1995) as well as the emphasis on collective or more individual appraisals of well-being.

Individual Well-Being

The subjective appraisal of one's life is covered by several terms and concepts. *Subjective well-being* is one of the concepts which is the most accepted and recognized by the scientific community (Diener, 1984).³ Subjective well-being (SWB) endorses both a cognitive and an affective component and can be framed through a *cognitive dimension*, (e.g. evaluation one's life) and an *affective dimension* [*positive affect* (happiness, serenity, etc.) and *negative affect* (concern, anxiety, stress, etc.)]. Whereas the concepts covered in this book are about the various dimensions (life satisfaction, happiness, mindfulness scale, etc.) of subjective well-being, the subject is wide enough to be conceptually and empirically related to all of these concepts.

The *cognitive component* is related to the process through which each individual retrospectively evaluates (in terms of "satisfaction") their lives, as a whole or in specific domains. The subjective evaluation is made through personal standards (expectations, desires, ideals, experiences, etc.), some of which are biologically driven, some of which are socially constructed. These standards are then used as a compass to evaluate one's life vis-à-vis the level of attainment of certain objectives, the degree of achievement of certain ambitions, and the fulfilment of certain needs. In the Multiple Discrepancy Theory developed by Michalos (1985), individuals evaluate their lives through the satisfaction of 5 main aspects and the self-perceived discrepancies between what one has and what one wants: (1) basic needs and wants, (2) what one was accustomed to having earlier in life, (3) what one expects to have later in life, (4) what others in society have, and (5) what one deserves. The *affective component* refers to the emotions experienced by individuals during their daily lives and relates to the individuals' present situation. The emotions can be positive (*pleasant affects*) or negative (*unpleasant affects*), which are considered conceptually distinct and influenced by different variables (Argyle & Crossland, 1987;

³This definition has been adopted by OECD's Factbook: <http://lysander.sourceoecd.org/v1=8034723/cl=21/nw=1/rpsv/factbook2009/11/02/02/index.htm>.

Bradburn, 1969; Diener & Emmons, 1984).⁴ Observing this component is particularly important since it allows us to obtain information about the temperamental structure used by each individual in facing the everyday life.⁵ As far as policies are concerned, the cognitive dimension seems to be more pertinent than the affective dimension (Fischer, 2009), although failing to consider individuals' sentiments is problematic since those sentiments often lead individuals to make choices aimed at improving their level of well-being (Gilbert, 2005).

The idea that observing subjective well-being has a high informative and analytic value is widely accepted. Perceptions and evaluations influence the way persons face life and benefit from opportunities. In other words, considering subjective well-being among the conceptual dimensions of general well-being allows attention to be oriented towards a component of the quality of life which is the result of the individuals' evaluation of living conditions, opportunities, preferences, expectations, and adaptations (Eurofound, 2005).⁶ In this perspective, information on subjective well-being can usefully complement other objective information by allowing divergences between what persons perceive and what is objectively observed to be evaluated (Diener & Seligman, 2004). Proper metrics are therefore needed to portray these *objective* and *subjective* parts of individuals' reality and measure what is deemed desirable from the perspective of citizens and policy-makers.

Building Metrics

In order to monitor national progress, social metrics are needed. These are a combination of direct measures of phenomena they purport to measure and indirect measures of other, always more complex, phenomena that cannot be measured directly, or at least cannot easily be measured directly. These metrics require a number of conditions to be met: (1) to be a clear and mutually agreed upon operational definition, (2) to validly measure what they purport to measure, (3) to be reliable, (4) to be representative of the population, (5) to be timely, (6) to have the

⁴A particular attention should be devoted to the term "happiness", which assumes different meanings according to different authors. Many scholars refer "happiness" to the affective component of subjective well-being (Nuvolati, 2002; Diener et al., 2008). Others consider happiness as a synonymous of life satisfaction Veenhoven (1994).

Besides the different conceptual views, the statistical evidences can tell different stories. The highest rank correlation value between "*how satisfied with life as a whole*" and "*how happy are you*" by country in round 4 of European Social Survey data is 0.6 (registered for the United Kingdom sample), revealing not only that the two components are not coinciding but also that a linguistic problem underlies the definition of happiness.

⁵According to some authors, for instance Veenhoven, affects' determinants are universal and consequently not produced by individual response-styles or cultural differences.

⁶Fourth European Working Conditions Survey. Available at: <https://www.eurofound.europa.eu/publications/report/2007/working-conditions/fourth-european-working-conditions-survey>.

capacity to be aggregated and disaggregated at various levels of analysis, (7) to be easily interpreted, (8) to be available for purpose of analysis, (9) to reflect changes over time, (10) to have policy relevance, and (11) to have the capacity to reflect changes (Estes, 2005).

In order to build such metrics, a systematic approach is needed. This approach leads from *concept* to *measure*, then *synthesis*, and *interpretation*. The process requires (a) concepts (and their corresponding conceptual dimension) to measure and the domains in which the concepts have to be measured and monitored, (b) indicators including the techniques aimed at summarizing the indicators, and (c) interpretative and explanatory models (Maggino, 2015).

Each concept can be declined, observed, and investigated through objective and subjective aspects. These include individuals' opinions, evaluations, feelings, perceptions, attitudes, desires, values, and motivations and can be general or refer to a specific context. In any case, the subjective perspective is central in the definition of those concepts. It is therefore crucial to capture this subjective perspective and to measure it in appropriate ways in order to assess national progress and well-being. *Objective* components usually refer to the conditions in which each individual lives (health, working conditions, environmental situations, and so on). Among the objective characteristics observed at *micro-level*, one can mention: demographic and socio-economic characteristics (sex, age, civil status, household, educational qualification, professional condition, income, birthplace, residence, domicile, geographical/social mobility, etc.); lifestyle (activities, engagements, habits); and observable knowledge and skills and observable behaviours. One of the notions that can help in differentiating generic individual information from *subjective* information is that the latter can be described only by/from the subject himself/herself and not by an external observer. At the *macro-level*, it is somewhat difficult to list all possible objective characteristics as they are different, depending on the observed and studied field. Examples can be represented by aspects concerning environmental conditions, observable social, economic, and health contexts (economic production, literacy rates, life expectancy, natural and urban environmental indices, political indices, and so on).

Living Conditions

The relevant aspects of living conditions refer to outcomes, resources and capabilities, external circumstances, and subjective evaluations. *Objective* living conditions relate to the different ambits (personal and social) in which individuals are involved. These conditions typically include material resources, standards of living, working conditions and status, state of health, individual status, social relationships, and freedom to choose one's lifestyle. Objective indicators allow each aspect of living conditions to be evaluated. Their specificity is in the possibility to define and recognize external objective references. In other words, they are verifiable. The *subjective* evaluation of living conditions can embrace different dimensions, such as

self-determination (expressed in terms of perceived autonomy), spirit of initiative (in the meaning of capacity to contribute to building common well-being), sense in one's own life, and perceived adequacy.

Objective/Subjective: Beyond the Duality

The first part of the title of the book *Metrics of Subjective Well-Being: Limits and Improvements* invites two terms that might seem contradictory at first. *Metrics* usually refers to engineering (*metiri* means “to measure” in Latin), scientific approaches, and a quest for *objectivity*, whereas *subjective well-being* echoes a rather intangible matter, quite far from any objective ground. The apparent conceptual distance between these two components entails a contradiction if one adopts a binary view and considers terms such as “objective” and “subjective” as opposite. By doing so, objective and subjective approaches can lead to observing two immiscible representations of reality and eventually two distinct realities. However, if one acknowledges that the identification of the two aspects—objective and subjective—represents in itself a reduction of reality, which is necessary for measuring reasons, and one follows the path of *relatedness* rather than *opposition*, it becomes possible to look at two complementary and related ways to observe a similar phenomenon.

Modelling Reality: A Subjective Activity

Representing reality requires a *conceptual framework* in order to observe and interpret it. The conceptual framework always stems from a *subjective* hypothesis and view of the world made by the researcher. In this regard, as noticed by Michalos (1992), the models defined to observe a reality are only apparently neutral. Actually, the conceptual model represents only a “small window” through which only some facets of the reality can be seen (*reductionism*); in this sense, the view is politically and socially distorted and can condition knowledge, evaluations, choices, actions, and policies. In this sense, *subjectivity* impregnates the unavoidable working hypothesis necessary in understanding the reality. The researcher, through dialogue with the working hypothesis, can change the perspective in a continuously evolving knowledge path.

Components of the Reality: Both Objective and Subjective

In order to make the distinction between objective and subjective characteristics more clear from the operational point of view, one can use the source—called *unit*—from which the characteristic of interest is measured. The units can be

represented by individuals, institutions, social groups, services, administrative areas, geographical areas, nations, and so on. Consequently, one can distinguish *objective information*, collected by observing reality from *subjective information*, collected from individuals and their assertions. As far as measurement is concerned, defining what to measure represents the first step of the measurement process. This distinction can be extended to metrics; an *objective metric* is based upon explicit criteria, shared by external observers, whereas a *subjective metric* is based upon subjective evaluations and implicit criteria which can vary from one individual to another.

Social phenomena are measured via *objective metrics*, independently of personal evaluations, individual perceptions, and self-reports. *Subjective metrics* are built to measure and quantify individual components involving different elements—as conscience, cognition, emotion, attitude, and opinion—that are related to contingent and mutable situations. Consequently, measuring subjective aspects requires contributions from different academic fields, thus often requiring an interdisciplinary approach. This type of approach makes it possible to consider and understand the different levels at which each individual reacts to the submitted question. The different levels involve personality, values, interests, motivations, intellectual and expressive dispositions, memory, experiences, social attitudes as a member of a limited group or of a community, and so on.

Measuring Reality: An Objective Process

Methodological objectivity concerns the capacity of a procedure to measure without alteration due to external factors and to be free from the subjective orientation of the observer. This notion spreads from the procedure of measurement to the data analysis to the interpretation of the results. The possibility to meet the requirements of a scientific measurement is connected to the possibility to define and to identify the *error*; which represents a hypothetical component of any procedure of measurement. The observational error is the amount by which an observation differs from its expected value (Carmines & Zeller, 1979). The statistical model applied in order to evaluate the error component in the measurement process uses the concept of variability and considers two additive components, random error, and systematic error.

To Go Beyond the Duality

Binding *metrics* and *subjective well-being* together is an attempt to go beyond the apparent contradiction between “objective” and “subjective”. According to Morin (1994), Western science is still based upon the Cartesian dualism, with the objective world of the *res extensa* (material), open to science on one hand, and the *res cogitans* (immaterial) which is inherently subjective on the other hand. There are at

least two ways not to be trapped by the apparent opposition of the two terms. One is *conceptual* and employs other concepts that are easier to use. This is the approach chosen by Gelman and Hennig (2015) who simply propose to abandon the two terms. Their argument is that a frontal opposition between statisticians has polarized two approaches in two opposite, immiscible conceptions of reality. They suggest to replace the two concepts by two conceptual matrices. *Objectivity* should be replaced by *transparency, consensus, impartiality, and correspondence*, whereas *subjectivity* should be replaced by *multiple perspectives* and *context-dependence*. The second way to get away from that limiting opposition is *epistemological*. Rather than changing the concepts, it acknowledges the polarizing forces on which Western science is built, in particular the Aristotelian principle of non-contradiction. Although this principle has undoubtedly served Western sciences and contributed to its flourishing (Hummel, 1993), it might sometimes show its limits, in particular for the social sciences. As depicted by Iaccarino (2003), “Modern, or Western, science may not be best suited to fulfil this task (to approach complexity), as its view of the world is too constrained by its characteristic empirical and analytical approach that, in the past, made it so successful”. According to de Sousa Santos (2011), social sciences should embrace Southern epistemologies to leave the impasses created by the oppositions that constitute the pillars of Western science. The second approach suggests keeping the initial terms and encourages scholars to embrace possible relatedness of apparently opposite concepts. If the two approaches differ in their actions, they coincide on their initial driving forces as well as the acknowledgement to move towards more complexity. Once one acknowledges that *objective* and *subjective* are related, it is possible to move towards a more complex and finer grasp of social phenomena. The more these terms are used without reflection, the more chances there are to be trapped in pre-established (and potentially normative) schemes.

The founding fathers of sociology, such as Comte and Durkheim, had in mind to consider social phenomena as scientific phenomena and to treat them as *objects*. This has innervated social sciences during the whole twentieth and twenty-first centuries, and subjective phenomena have indeed partly filled up the gap in terms of rigour with natural sciences by using similar instruments. But this should not render opaque that although measuring subjective realities can be considered as *objective*, the modelling of the reality itself is still largely *subjective*, as depicted in the previous section. This is also the case for the so-called exact sciences. The invention of the thermometer shows that measuring a comparable reality was done very differently by different inventors, and that is not surprising as these inventions took place within the subjective reality of these actors. Sanctorius used a device with water, Ferdinand of Medici used alcohol, Ole Christensen Romer also used alcohol, using different graduations, Daniel Gabriel Fahrenheit replaced alcohol with mercury, etc. Kuhn (1962) has recognized the roles of individual experiences in the way scientists have shaped their theories and discoveries. Acknowledging these contingencies in the historical process forces us to embrace the subjective part included in the objectivation of social phenomena. As Gelman and Hennig (2015) state it:

According to this perspective, human inquiry starts from observations that are made by personal observers (“personal reality”). Through communication, people share observations and generate “social realities” that go beyond a personal point of view. These shared realities include for example measurement procedures that standardize observations, and mathematical models that connect observations to an abstract formal system that is meant to create a thought system cleaned from individually different point of views. Nevertheless, human beings only have access to “observer-independent reality” through personal observations and how these are brought together in social reality (p. 6).

Likewise, one might consider that the perceptions of actors contain some objectivity, some component of *reality*. The philosophical debate about the existence or not of a reality falls outside the scope of this book. In order to advance here on the question about the measurement of social perceptions (in particular linked with subjective well-being), one can here simply state that reality is linked to the subjectivities of the actors perceiving it. As such, one might say that any perception, except in extreme cases, contain some elements of this reality and thus contain some objectivity.

As pointed out by Gelman and Hennig (2015, p. 26), “there is tendency for hard-core believers in objectivity to needlessly avoid the use of valuable external information in their analyses, and for subjectivists but also for statisticians who want to make their results seem strong and uncontroversial, to leave their assumptions unexamined”. The idea of objectivity assumes that a truth exists outside of any investigation or observation. This *ultimate truth* scientists should discover has been considered as Joly (2010, p. 261) calls “anachronic rests of theology”.⁷ This notion that a researcher can observe or uncover phenomena without affecting them is increasingly rejected, not only in the social sciences (Nakashima & Roué, 2002) but also in the natural sciences (Andrieu, 2000). This is another fundamental of Western sciences which is being questioned.

In other words, subjectivity and objectivity are far from being totally opposite. If we admit that they are constructs, the key question is what we consider as objective and what we consider as subjective. If objective and subjective are not fully contradictory, if *objective* is somewhat related to subjectivity, then it forces us to think where the scientific exercise *is* and where it *isn't*.

Existing Doubts

The porosity between objectivity and subjectivity means that in this process of objectivation of subjective well-being, some subjectivity unsurprisingly resides and emerges. This means there is a need for clarifying some conceptual, measurement, and comparison issues concerning subjective characteristics (such as subjective

⁷Reliquats anachroniques de théologie.

well-being) and unravelling some important methodological aspects and issues that should be considered in measuring subjective characteristics and creating subjective data and indicators. Survey research to build indicators usually involves interrogation, typically using “closed” questions. As far as questioning about subjective well-being is concerned, respondents are presented with a standard question and answer by choosing one of a few response options, such as “very happy”, “pretty happy”, or “not too happy”. Questions are presented in personal interviews, in questionnaires or via Internet. This method of collecting information is vulnerable to various biases, some of which are explored by Brulé (2015).

Validity Doubts

Responses to survey questions may fail to measure what they are supposed to measure. Bourdieu (1994) argues that closed questions might shed light on topics that people would not otherwise consider. Likewise, Morin (1994) argues closed questions “trap” respondents in pre-established schemes. An objection particular to survey questions on subjective well-being is that such questions tap into how happy respondents feel they should be given their situation, rather than how happy they actually are. These qualms have given rise to validity tests. The conclusion is that the validity of such responses requires that questions clearly address subjective appreciation with one’s life as a whole. Still there are weaknesses about the reliability of answers to questions about subjective well-being.

Reliability Doubts

Even if responses to questions about subjective well-being reflect the respondents’ life satisfaction, they may do this inaccurately. Responses can be distorted in several ways. It has been suggested that *desirability bias* produces unrealistically high scores on subjective well-being; for instance, self-ratings of subjective well-being tend to be slightly higher in personal interviews than on anonymous questionnaires (Phillips & Clancy, 1972). An *interviewer bias* occurs when responses are influenced by characteristics of the interviewer; for instance, if the interviewer is in a wheelchair, the benefit of good health is salient. Respondents in good health will then rate their subjective well-being somewhat higher, and the correlation of subjective well-being-ratings with health variables is more pronounced (Smit et al., 1995). The presentation of the study, the conversational context (Smith et al., 2006), and the day of the week are among other factors that influence the response of interviewees and can represent a *contextual bias*. Responses to questions about satisfaction with one’s life as a whole tend to be slightly more positive when asked on a Monday than on a Friday, Saturday, or Sunday (Akay & Martinsson, 2009). Next, there are *questionnaire effects*: The

order of questions has been proved to influence both the distribution of responses and the association with other variables (Glenn & Taylor, 1990); e.g. the observed correlation between subjective well-being and income tends to be higher if the question on subjective well-being follows after questions about income. The above-mentioned biases can be random or systematic. Systematic bias is trickier, in particular when cultural factors are involved in a *cultural measurement bias*. Culpepper and Zimmerman (2006) have shown in a study done in an American university that Hispanic students are more prone to extreme responses; Hispanic students were less likely to go for middle responses and would go more for extremes than their Anglo-Saxon counterparts. Likewise, Chinese students were less inclined to extreme responses than Caucasian students (Song, Cai, Brown, & Grimm, 2011). In a bi-ethnic comparison in Israel, Arab respondents have been shown to go more easily for extreme responses than their Jewish counterparts (Baron-Epel, Kaplan, Weinstein, & Green, 2010). Maggino (2003) found that the longer scales are less vulnerable to extreme response biases than the shorter scales. Brulé and Veenhoven (2017) have characterized the 10 excess, particularly frequent in Latin America and the Middle East.

Towards More Complexity

The above-mentioned biases show the vulnerability of certain metrics either inherently or vis-à-vis their context. This is only surprising for what Gelman and Hennig (2015) call the “hard-core objectivists”. Refusing to accept the subjectivity in a field dealing with subjective objects is not only counter-intuitive but it could lead to scientific errors, non-senses, or reinventing the wheel by eventually realizing that subjective well-being is subjective. This can be even more hurtful as noted by Welch (2009, p.40); “the notion of absolute truth is inculcated in numerous conflicts besetting the human condition now and throughout time. Furthermore, this might also hurt the work to push further indicators of subjective well-being in occupying the role they could eventually play in shaping policies. Conviction of absolute truth—be it religious, philosophical or ideological—leads inevitably to intractable conflict, and too frequently to violence and atrocity”. In that regard, one might find it resourceful to think at the epistemological forces leading to call *bias* what is considered as a measurement error. The term is considered as coming either from Old Provençal “bypass” or derived from Latin “athwart” or sometimes “suspicious”. One immediately understands that this represents some undesired artefact that one wants to get rid of. Biases represent an undesired noise that separate scholars from an “ultimate truth”. There are at least two ways to deal with this noisy subjectivity. One way—the usual way—is to aim for pure objectivity and see any remaining subjectivity as undesired. Calling it “bias” is a way to evacuate this undesired artefact by making it external. In the field of subjective well-being, this paradoxically means to evacuate some of the remaining subjectivity. This seems to be the unique way to deal with this in a solid, Western-based epistemology

and its quest for full objectivity. Another way is to adopt a more nuanced approach, a more fluid epistemology and consider that subjectivity is *inherent* to the field and accept that this objectivity is related to subjectivity. After all, a bias is a “bypass” only if one considers that the road is straight. If one can accept that the road is contorted, it becomes possible to think differently on the way to approach any subjective matter. This also requires thinking differently about the borders of the scientific exercise and possibly to either define a scientific zone that is more restricted or to accept the non-scientific aspects in the scientific exercise. This entails major epistemological changes within Western sciences that have developed upon reductionism. According to Iaccarino (2003, p. 220), “the understanding of complex systems remains a major challenge for the future, and no scientist today can claim that we have at hand the appropriate methods with which to achieve this”. Methods should evolve to be able to accommodate, but that might not suffice. The limits of the scientific exercise themselves ought to be modified, to push further the limits of the scientific exercise means to be adopt a more complex approach, and, paradoxically, one that accept a non-scientific part within. As stated by Klein and Newell (1996, p. 6):

In contrast to the tendencies of the Western epistemological tradition, complex systems are non-hierarchically structured. They obey multiple conflicting logics, employ both positive and negative feedback, reveal synergistic effects, and may have a chaotic element. To understand them, linear and reductionist thinking must be replaced by nonlinear thinking, pattern recognition, and analogy. [...] Metaphors for describing knowledge have shifted from foundational and linear structures to networks, webs, and complex systems.

This epistemological shift requires the ability of researchers and institutions to embrace interdisciplinary in spite of their possible cultural and structural difficulties (Brulé, 2016). This will most likely lead to readjustments in the location and the nature of the borders between disciplines, as well as the status of the *residual* information. Once neglected and undesired, part of this *noise* may be reconsidered as desirable information. This change in the status of the noise could lead or be led by a fundamental disruption in the traditional practices, as noted by Klein (1996, p. 84):

Interdisciplinary cognition is located in the attempt to construct meaning out of what initially seems to be noise [...] Noise occurs in the introduction of a borrowing, in addressing technical problems by drawing on competing perspectives, in developing hybrid interests, and in disrupting and restructuring of traditional practices.

As any scientific field, the field of subjective well-being faces several challenges. One of these challenges is the tension it faces, on one hand, to tend towards more objectivity to look more legitimate and be accepted by other scholars of more “classic” fields such as sociology (Veenhoven, 2016) and on the other hand to accept the subjectivity that constitutes the object itself. This tension stretches the field in two opposite directions, and only the identification of its objective and subjective components and of the equilibrium between the two will allow the progress of a robust and trustworthy field, able to guide policies to favour the subjective well-being of most individuals.

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