

Classifying the Indicators of Happiness in Quantitative Social Sciences

1. Introduction.

Happiness is of interest to all humans and potentially to scholars of all disciplines. Philosophers can determine its substance, linguists can define its meaning, life scientists can show the chemistry behind it. Social scientists can measure happiness, contextualize it using qualitative and quantitative tools, and make a basis of policy recommendations. The importance of the work of empirical social scientists is particularly clear, as their findings translate into policy recommendations, and these recommendations often shape actual policies.

My personal motivation of this present inquiry is a desire to reflect on the conceptual context of my empirical work in statistics, in which establish what I call the “predictors” of happiness, and to broadly reflect on similar research in the social sciences.¹ In the paper, I use the tools of applied statistical modelling and inference, that is, mathematical expressions applied to a dataset (a digital collection of systematic observations) used to test a hypothesized relationship. In statistical terms, I find that the correlation between happiness and life satisfaction, as measured by encoded answers, is weak.² This result relies on taking the meaning of the terms “happiness”

¹ While the term “predictor” suggests a reference to the future, my use of the term is synonymous with “independent variable.” Statistical terms such as “predictor,” “independent variable,” “indicator,” “estimator,” “determinant,” or “correlate” can happen to be used interchangeably when they refer to the same values in a given analytical context. For the rest of the present essay, I stick to the general term “indicator,” which I refer to both independent and dependent variables.

² In the statistical calculation, the correlation takes the value of 0.37. In the paper, also find that men are significantly less happy and less satisfied with their lives than women; that health is the largest predictor

and “life satisfaction” as they were presented to the respondents as words in two separate questions in the questionnaires of the World Values Survey.³

In philosophical terms, however, this result merely means that the respondents had different conceptions of happiness and life satisfaction. This is because the finding neither involves qualitative criteria to determine these two concepts nor pertains to their contents or substances. This dissonance in what one can find with statistical tools versus with philosophical inquiry reveals one of the difficulties in quantitative social sciences, namely that much of this research to a quite limited extent captures and discusses the conceptual contents behind the terms of investigation. This kind of research seems to operate on the surface rather than through the depth of the substance of the phenomenon in question.

Given this motivation, the main question of the present paper becomes what, from the philosophical point of view, is conceptually sound or problematic about the use of indicators in quantitative social scientific research about happiness. To that end, I classify the indicators according to two distinctions: criteria versus symptoms, from Ludwig Wittgenstein, and subjective versus objective, from Mark LeBar. In my analysis, I juxtapose these distinctions with distinctions more commonly made in economics, namely between causes and effects (or results) and between positive and normative statements. I conclude that classifying indicators of

of happiness; that the feeling of freedom, and health are the largest significant predictors of life satisfaction; that being married, religious, trusting in God, and trusting in other people make people happier and more satisfied with their lives.

³ The World Values Survey is an “international research program devoted to the scientific and academic study of social, political, economic, religious and cultural values of people in the world,” whose datasets are commonly used in social scientific research. (<https://www.worldvaluessurvey.org/WVSContents.jsp>). The question about happiness is as follows: “Taking all things together, would you say you are:” and its four possible answers, “Very happy,” “Quite happy,” “Not very happy,” and “Not at all happy.” The life satisfaction question is the following: “All things considered, how satisfied are you with your life as a whole these days? Please use this card to help with your answer.” The possible answers are numbers on the scale from 1 to 10, where 10 means “satisfied,” and 1 means “dissatisfied.”

happiness using the two distinctions from moral philosophy would be compatible with quantitative social scientific methods and could potentially improve the quality of the selection and interpretation of evidence.

2. Conceptual Framework.

2.1. Describing Happiness in Philosophical Terms.

In philosophy, there seems to be a focus on the *concepts*. Philosophers' competence is the exercise of concepts, and they explain concepts in terms of language. They make conceptual structures explicit and articulate them; they explain concepts by describing the language in which the concept is applied. Thus, to understand what happiness is, philosophers inquire problems such as what happiness consists in; what constitutes happiness; how can individuals and societies attain happiness, and how much authority individuals (versus other agents or circumstances) have in deciding if they are happy. Two interesting conceptual frameworks for the philosophical inquiry about happiness are Wittgenstein's distinction between criteria and symptoms and LeBar's unification of subjective and objective intuitions.

Ludwig Wittgenstein, one of the greatest philosophers of the 20th century, who studied logic, mathematics, mind, and language, established an important conceptual framework for the philosophical reflection on happiness. He distinguished between criteria and symptoms as two different kinds of evidence:

Wittgenstein makes a distinction between two kinds of evidence that we may have for the obtaining of states of affairs, namely symptoms and criteria. Where the connection between a certain kind of evidence and the conclusion drawn from it is a matter of empirical discovery, through theory and induction, the evidence may be called a symptom of the state of affairs; where the relation between evidence and conclusion is not something discovered by empirical investigation, but is something that must be grasped by anyone who possesses the concept of the state of affairs in question, then the evidence is not a mere symptom, but a criterion of the event in question. A red sky at night may be a symptom of fine weather tomorrow: but when tomorrow

comes the shining of the sun and the clearness of the sky are not symptoms, but criteria, for the weather's being fine.⁴

This distinction proposed by Wittgenstein is relevant, because happiness, like weather in the quoted example, seems to be able to be described by both kinds of evidence: as something to be discovered empirically and as something grasped by anyone who knows the concept of happiness. However, describing happiness in Wittgenstein's terms comes not without difficulty, as it is not immediately clear how and in what proportion each of the two kinds of evidence applies to happiness.

While subjectivity and objectivity could otherwise seem to be disjoint characteristics of a given thing, they both are possible aspects of the notion of happiness, according to Mark LeBar, a professor of moral philosophy at Florida State University. For him, an accurate account of human welfare and happiness must recognize both subjectivity and objectivity —more precisely, “objective constraints” on “authoritative subjective judgements”:

The crucial issue in modern accounts of the human good is this: to what degree are the judgments of individual welfare subjects as to their own welfare authoritative in determining their welfare? I have argued that Aristotelian Constructivism [LeBar's perspective] identifies and explains crucial objective constraints on those judgments, in such a way that we can see why they have the authority they generally do. It is thus a promising account of human welfare.⁵

LeBar associates the objectivist point of view with two possible statements about human welfare: “some things are simply objectively necessary for human welfare”; and “there are *constraints* on what counts as welfare that are not themselves the products solely of the subjective attitudes of the welfare subjects themselves.”⁶ He associates the objectivist point of view with “[rejecting] the idea that there is some objective standard of value – some independent criterion –

⁴ Kenny and Kenny, 2006: 103

⁵ LeBar, 2004: 214

⁶ LeBar, 2004: 196

by which the values that drive assessments of welfare can be tested”⁷ and with making claims such as “individuals are the ultimate authorities concerning their own welfare.”⁸ LeBar’s critiques defining happiness by strictly subjective intuitions when he observes that “[w]e can hold false beliefs ... [and w]e can have defective values.”⁹

2.2. Describing Happiness in Quantitative Social Scientific Terms

In empirical economics there seems to be focus on what *measures* are appropriate for answering the research question. The goal of quantitative social scientists is to determine causal relationships and to explain these relationships in statistical terms. Their competence is using refined methods of applying data to mathematical expressions. Empirical studies focus on choosing and refining the methods for the findings. This entails the application of increasingly sophisticated and demanding econometrics (statistical tools appropriate for economic problems). The critique of such papers centers around the question of how well a given study addressed internal and external validity concerns (in econometric terms).

The main goal of most empirical papers in economics and other quantitative social sciences seems to be the establish a causal relationship (or determine the lack of it) between two phenomena captured in two measures: the explanatory (independent) variable—the *cause*, and the response (dependent) variable—the *effect* (or result). The response variable is the one whose change we observe depending on the change in the explanatory variable, which one can control and manipulate (at least statistically). The first step, sometimes sufficient as an initial finding, is establishing a correlation between pairs of variables, for example “happiness” and “income.” The next step is establishing the direction, magnitude, and statistical significance of a potential causal

⁷ LeBar, 2004: 199

⁸ LeBar, 2004: 199

⁹ LeBar, 2004: 196-7

effect, such as in this made-up example: “an increase of \$5000 in annual income makes Americans happier by 10 percentage points, which is a statistically significant result at the 95% confidence level; however, increasing happiness does not seem to cause higher incomes.”

Another distinction economists often make is between positive and normative statements. Economics advertises itself as a positive science, the one whose pride is scientific inquiry independent of norms and whose ambition is to find what is the socio-economic relationships *are* truly like rather than what they *should* be like. Thus, an economist interested in investigating whether a particular policy increases or decreases the population’s happiness does not necessarily support or disapprove of the policy, regardless of the result found. Scholars in economics departments often prefer to speak of costs and benefits than to advocate for particular political or societal changes. For example, for the economists Donohue and Levitt, who find that legalizing abortion reduced crime rates, and the economists who critiqued their paper, it has been important to emphasize that their research is impartial to the question of whether legalizing abortion is a good or bad policy decision.¹⁰

¹⁰ The authors state the following: “In short, ours is a purely positive, not a normative analysis, although of course we recognize that there an active debate about the moral and ethical implications of abortion.” Donhue and Levitt, 2001: 382. The critics state the following: “DL’s paper has incited a storm of criticism from people who believe that the authors are making a normative claim about the social benefits of legalized abortion. We are also critical of DL’s paper, but for purely empirical reasons.” Foote and Goetz, 2001: 1.

3. Diagnosis and Analysis.

3.1. The Importance of The Criteria-Symptoms Distinction for the Empirical Study of Happiness

There currently seem to be important limitations as to the applicability of Wittgenstein's concept of symptoms to quantitative social sciences. Whereas researchers in these fields are primarily invested in distinguishing between causes and effects in order to establish casual relationships (variable X , a cause \rightarrow variable Y , a result/effect) in their studies, symptoms can be causes or effects of happiness, rather than just one of these two. Moreover, just like it is sometimes unclear what a direct versus an indirect measure of a given phenomenon is, it is sometimes unclear what a criterion versus a symptom is of a given a concept, such as happiness.

Thus, the distinction between than criteria and symptoms does not seem immediately useful for academic empirical scientists. Policy-oriented researchers also need the *cause-effect* distinction to identify the causes that the policymakers then generate or suppress in order to achieve their desired results. Theoretical economists seem even less likely to use Wittgenstein's distinction. As an example, in the famous identity formula for the gross domestic product,

$$Y = C + I + G + NX^{11}$$

both sides of the equation are the components of the same concept. Thus, in this kind of formulation, there is no evidence to be discussed, and the distinction between criteria and symptoms does not apply.

However, Wittgenstein's distinction can be useful, and even crucial, for refining the conceptual understanding of the relationships under investigation. Whether a measure of a given

¹¹ The meaning: The total value of production is equal to the sum of consumption, investments, government spending, and net exports.

phenomenon is a symptom or a criterion certainly matters for assessing the legitimacy of indicators and for interpreting results.

One example of a potential application of Wittgenstein's distinction is selection of survey questions. Some survey questions, such as the ones about happiness and about life satisfaction from the World Values Survey (quoted in the second footnote) approach the criteria of the underlying concepts. Other questions, such as how much the respondent is worried about finding a job, approach symptoms. While empirical research generally considers whether a given measure is appropriate for a given concept, it seems that the pressure of data collection challenges may induce the researcher to work from finding an indicator in a dataset to interpreting its meaning and somehow fitting into the concept behind the phenomenon in question. Perhaps a way to make sure the use of terms in empirical research is philosophically sound would be first formulate the criteria and the symptoms for the concepts such as "happiness" and "life satisfaction" and only then examine how much a given indicator from a survey question applies to the concept.

Another example of a potential application of Wittgenstein's distinction is the use of the term "correlation." In Wittgenstein's terms, the ability to correlate two things means that there must be different criteria for them. Because criteria determine the meanings, the two concepts must be identified independently. Otherwise (if there is the same criterion or identification), there can be no correlation. However, for economists and quantitative social scientists, drawing correlations between two variables of interest is a common practice and a part of their routine, even regardless of whether the concepts the variables represent are distinct. In fact, running a correlation algorithm could be a way to figure out if two phenomena behind the quantities are similar to each other, e.g., when comparing the interchangeability of indicators of the same

phenomenon based on different survey questions.¹² In the light of Wittgenstein distinction, such a practice becomes problematic or at least requires additional explanation.

3.1. Applying the Criteria-Symptoms Distinction to the Indicators of Happiness

Criteria at first seem more attractive to social scientists than symptoms, because they seem to be at the core of the phenomenon under investigation. When establishing a causal link between two phenomena, an empirical social scientist aims to measure two phenomena directly rather than indirectly (using “proxies”—substitutes of the variables that are hard or impossible to observe). Wittgenstein’s criteria thus seem to be the variables satisfying this ambition, since criteria, understood as a non-inductive type of evidence, directly correspond to the phenomenon in question.

In turn, symptoms may be more interesting, because they may turn out to be empirically different than expected, e.g., happiness has turned out to be correlated with being married but uncorrelated with having children in my project and in other studies.¹³ Thus, symptoms are less obvious; they are more likely to become a research topic and a larger contribution to the literature for empirical economists and other social scientists.

It seems that in social scientific research, the most typical combination seems to be the use of a criterion as the response variable and symptoms as explanatory variables. For example, “I am married” (a symptom) explains “I am happy” (a criterion). What happens to one’s research question when these two variables swap? One obtains a model in which “I am happy” explains “I am married.” Such a model looks like from a study of what causes or correlates with being rather than what causes or correlates with being happy. In other words, the researcher seems to be

¹² Falk et al., 2018: 1659.

¹³ Parker, 2014.

focused on the causes or correlates of being married rather than the causes or correlates of being happy in such a setup.¹⁴

Nonetheless, there seems nothing inaccurate, at least as a part of a more complex analysis, in using the explanatory variable and the response variable of the same type (both criteria or both symptoms). For example, “I feel free” as a *symptom* of happiness seems a good indicator of the “I feel cheerful” *symptom*. The “I live a good life” potential *criterion* of happiness seems a good indicator of the “I am happy,” which is another potential *criterion* of happiness.

3.2. The Subjective-Objective Distinction in the Empirical Study of Happiness.

The classification of measures into objective and subjective indicators seems to follow a sharp border in social scientific research. In a survey, the target of investigation is the subjective side at least in the sense that information about respondents comes from their self-reports, which are not easily verifiable (e.g., “How often does your heart race?”), and often also in the sense that the content is non-material (e.g., “How often do you feel anxious?”). In a set of data collected with research tools rather than a survey or an interview, the target of investigation is the objective side in the sense that the measurements are validated by the researcher (who, for example, takes a heartbeat record).

In contrast to the distinction between criteria and symptoms, the discussion of subjectivity and objectivity of happiness and welfare seems to appear often in quantitative social scientific literature. However, there, the distinction is not necessarily treated as a philosophical problem related to what happiness consists in and how it is related to the human good, but rather as a discussion of how accurate or reliable a given form of measurement is. Although the quoted

¹⁴ Moreover, in this example, the response “I am married” is merely a symptom of *being married*, and “I am happy” is also a symptom of *being married*. In order to use a criterion, rather than a symptom, as a dependent variable in this setup, the researcher would need to use, for example, an official document to check the status of the study subject rather than the verbal declaration “I am married.”

sources that follow also discuss the objectivity and subjectivity of happiness, they vary significantly in focus from LeBar's moral philosophical account about the determination of happiness as a part of a broader theory of the human good:

Anthony Kenny and Charles Kenny, the authors of "Life, Liberty, and the Pursuit of Utility," refer to the following common concerns about the measuring happiness by survey methods: "'self-reported' happiness might be different from other conceptions of the term"; "People can interpret polls in different ways"; "Americans may smile more and say they are happy because it is expected of them"; "[P]eople can also lie."¹⁵ Weimann, Knabe, and Schöb, the authors of "Measuring Happiness" and three professors of public economics, discuss the problem the following way:

How long a person works, or what his income is, can, without a doubt, be measured, so the data can (in principle, at least) be checked. Subjective life-satisfaction data are completely different. Only the respondents themselves really know whether what they have marked on a scale from 0 to 10 truly represents their life satisfaction. A person's life satisfaction is private information through and through, and every individual possesses an exclusive right to it. Whether or not to report life satisfaction honestly is a decision made by each individual, and it is exceedingly difficult to verify such information. To trust self-reported subjective well-being, we also have to be sure that a subject's judgments about his or her life are made in a consistent way. This implies, for instance, that, as long as nothing in life changes, people report the same level of life satisfaction when repeatedly asked about their life satisfaction.¹⁶

3.3. The Subjective-Objective Distinction in the Economic Thought on Happiness.

The use of the term "welfare" gives additional insight into the role of objectivist and subjectivist intuitions in economics. In LeBar, "welfare" is synonymous to "well-being" and seems synonymous with "happiness" and "satisfaction." In the economic discourse, "welfare" usually refers to the possession of or access to goods and services, often in the context of state

¹⁵ Kenny, 2006: 112

¹⁶ Weimann et al., 2015: 91

policy. From this, one could presuppose that economics as a field emphasizes material conditions and thus follows objectivist intuitions regarding happiness.

However, according to Weimann et al., “economists believe very strongly that only an individual can say and judge what is useful to him and what is not.”¹⁷ In fact, the economic thought also has a long subjectivist tradition of the account of happiness, beginning with utilitarianism: Jeremy Bentham or John Stuart Mill understood happiness as the presence of pleasure and absence of pain.¹⁸ Considering that economists acknowledge the importance of both subjectively reported happiness and objective welfare, their approach is (at least roughly) consistent with LeBar’s account.

3.4. Indicators of Happiness on both Scales, Criterion-Symptom and Objectivity-Subjectivity.

Indicators can be either criteria or symptoms—by the virtue of being direct or indirect evidence—and either subjective or objective—by the virtue of being self-reported or independently observed. Consider the following examples: a variable encoding statements such as “I feel happy” or “I feel unhappy” seems to be a *criterion* and a *subjective* account of happiness; an observation of how many times per hour someone smiles or laughs seems to be a *symptom* and an *objective* account of happiness; the levels of dopamine seems to be a *criterion* that is also an *objective* account of certain pleasant feelings sometimes associated with happiness, and a variable encoding the statement “I am full of energy to do a lot of good things” seems to be a *symptom* an *subjective* account of happiness.

¹⁷ Weimann et al., 2015: 12

¹⁸ Weimann et al., 2015: 156

3.5. The Problematic Indicator-Concept Divergence.

The two distinctions from philosophy shed light on a potential problem in the scientific literature. The indicators that approach criteria and objective accounts seem to be preferred by scientists based on the intuition that evidence that is direct and based on observations more precisely and accurately testifies to the phenomenon under investigation. Thus, motivated by the need for exact reasoning, the scientist implicitly searches for and chooses the indicators that are criteria and objective accounts. The scientist then labels the indicators with the original terms for the phenomena in question, even though such indicators may have narrower definitions than the phenomena.

One instance is defining happiness strictly as nothing else than pleasant feelings induced by dopamine. While philosophers would consider the dopamine level at most a symptom of happiness, scientists take it as a criterion for happiness, which requires them to redefine the term “happiness” to a narrower meaning.¹⁹ This way, the scientist uses the wrong term for happiness in the sense that the meaning of a given term becomes reduced to just one aspect of the underlying concept. Thus, insufficient reflection may lead to conceptual inaccuracy, which is problematic from the philosophical point of view.

4. Conclusion.

In quantitative social scientific literature, there seems to be little or a lack of philosophical reflection on the different types of indicators. In particular, it is not common to discuss whether

¹⁹ An analogous situation happens for indicators that are clearly subjective and symptomatic. For example, an indicator for generalized trust may be an encoded answer to the question “*Generally speaking, would you say that most people can be trusted or that you need to be very careful in dealing with people?*”. The indicator, a statistical summary of answers to this question, has a different meaning than the concept of generalized trust; however, researchers draw their conclusions about generalized trust based on their analysis of the indicator.
<https://docs.iza.org/dp9872.pdf>

the economic indicators are criteria or symptoms; and while there sometimes is discussion whether subjective or objective measures are correct, such discussions are not parts of broader theories of the human good. Instead, intellectual efforts of these scientists are focused on distilling causes from effects, on the internal and external validity of methods, and on the positivity or normativity of claims. Despite little attention paid so far to the two important distinctions from moral philosophy, it seems that quantitative social scientific literature could benefit from reflecting on the qualities of the evidence collected and processed—especially at the stage of selecting indicators appropriate to the research question and at the stage of interpreting results, drawing generalized conclusions, and presenting policy implications.

For future scholarship in this area, there are other considerations regarding the indicators of happiness beyond the scope of this paper: To what extent does or can the social scientific research incorporate the considerations of realities beyond the observable world and beyond temporal life? (Perhaps there are only “proxies” for the condition of the soul based on data on behavior and self-reported data on thoughts, values, choices, etc.?) How does happiness relate to good conduct or virtue? (If an essay were to focus on the virtue of working hard, the essay could incorporate the widely discussed problem of religion, work ethic, and economic growth, as in Weber’s thesis.)

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