

**Using New Metrics to Assess the Role of the Arts in Well-Being:  
Some Initial Results from the Economics of Happiness**

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**The Brookings Institution**

**March 2014**

(working paper)

This project was supported in part or in whole by an award from the *Research: Art Works* program at the National Endowment for the Arts: Grant# 13-3800-7012.

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There is implicit consensus that the arts play a positive role in most societies, with good reason. The arts are a result of the creativity of the producers, and elicit that of consumers. They can have positive social externalities by generating events for social gatherings and creative exchange. They enhance our visual and auditory environments. They are as old as human existence and the most notable works far outlast the lifetimes of their creators. But how can we measure the contribution that the arts make to society and to human well-being?

Surely income metrics are insufficient. Some of the most famous producers of the arts died in deep poverty, and were only recognized posthumously. And even for those that are recognized within their lifetimes, it is not clear that compensation levels and quality are always aligned. How can we evaluate the effects that the arts have on society in general? Do the arts increase societal well-being or happiness? Are producers and consumers of the arts happier than the average? These are big questions that are surely impossible to put exact numbers to. That said, the metrics that are being developed in the new “science” of well-being can shed some light and at least provide orders of magnitude on the answers to these questions, if not exact numbers.

In this paper, we use the metrics and methods that have been developed to study well-being and apply them to the arts. Based on data from the United States, we explore whether there are well-being benefits from participating in and/or consuming the arts, and, to the extent those benefits exist, their implications for society more generally. This is, to our knowledge, a first attempt to assess these questions based on large-scale empirical data and, as such, our study is exploratory rather than conclusive. That said, beginning to answer these questions has obvious relevance to public policies designed to support the arts, at both individual and community levels.

***The Study of Well-Being and its Metrics***

The study of well-being is evolving into a new branch of the social sciences, of which the economics of happiness is a sub-field. It is concerned with better understanding the causes and consequences of human well-being. Much of the research focuses on the determinants of well-being, both within the United States and around the world. More recent research, including some by the authors, attempts to explore the causal properties of well-being. In other words, given the underlying assumption that more well-being is a desirable thing, do we know what it causes?

The research finds consistent and intuitive patterns in the determinants of well-being across individuals, countries, and cultures: health, sufficient income, stable employment, and stable partnerships are associated with higher levels of well-being, among other things (Blanchflower and Oswald, 2004; Layard, 2002; Easterlin, 1974). Higher levels of well-being, in turn, are associated with better health, better

performance in the labor market, and even with longevity (Graham, Eggers, and Sukhtankar, 2004; Diener et al, 1997; deNeve and Oswald, 2012).

The metrics are particularly well-suited for answering questions that standard revealed preference based methods do not answer well, such as the welfare effects of institutional arrangements individuals are powerless to change, and the explanation of behaviors that are not driven by optimal choices, but instead by norms, addiction, or self-control problems. They are also particularly well-suited to assessing the value of conditions or activities that are not easily measured by money metrics, such as different health conditions, exercising, leisure time, and time spent with family or friends, among others. The arts, of course, fit neatly into this category.

While the arts may have large benefits for those who participate in creating them, for those who enjoy the benefits of those arts as consumers, and for communities as a whole, it is difficult to assess these benefits in a quantitative manner, at least based on income metrics. Perhaps as a result, the arts are typically under-funded and under-valued compared to visible consumption goods.

There is now broad consensus among the scholars involved that well-being has two distinct dimensions. The first is experienced or hedonic well-being: the manner in which people experience their daily lives, as gauged by positive and negative affect, and how their moods fluctuate during different daily activities (Kahneman and Krueger, 2006). The second, evaluative well-being, assesses the manner in which respondents think of their lives as a whole, and includes eudemonic elements – the extent to which they have purpose or meaning in their lives. Evaluative metrics implicitly and at times explicitly capture the extent of respondents' agency – broadly defined as control of their lives (Kahneman and Deaton, 2010; Graham, 2011; Graham and Nikolova, 2013a; Sen, 1999).

Experienced well-being is most simply assessed by questions which ask respondents how much stress or worry they experienced the day before, on the one hand, and how happy they were or how much they smiled the day before on the other. Evaluative well-being is most simply captured by questions about overall life satisfaction. [See Table 1] Hedonic metrics are best for assessing the quality of people's lives, while evaluative metrics capture views of life over the entire life cycle, as well as the extent to which people have opportunities to lead meaningful lives.

Our previous findings about this latter dimension of well-being are relevant to the arts and to artists (Graham and Nikolova, 2013a). When we look across the distribution of well-being of our respondents (via quantile regression techniques), we find that the least happy respondents care most about income and are made most unhappy by unemployment. In contrast, the happiest respondents care the least about income and full-time employment, but care a lot about learning and creativity (in technical terms, these variables are highly correlated with their well-being). As such, the happiest cohorts fit the stereotypical profile of those who choose to produce arts for a living. The work of Richard Florida (2004) on the creative class, meanwhile, suggests that there are positive externalities – for societies and for economies – of having a conglomeration of creative people living around one another.

In this paper, we explore whether artists and consumers of the arts have higher levels of well-being than the average – with possible positive spillover effects. It is a first attempt to undertake such an assessment with a large scale data set for the United States. Our study will be as concerned with developing the appropriate methods as it is with the outputs of the exercise. We explore three sets of questions. The first

is what are the benefits, based on well-being metrics, of participating in the arts and of being a consumer of arts? The second is what dimensions of well-being are most enhanced by the arts: hedonic or evaluative? The third is, given that we are able to establish that the arts do have well-being benefits, can we say anything based on extended analysis about the behavioral outcomes related to well-being and the arts? Are individuals with higher levels of well-being more likely to participate in the arts or does participation in the arts result in higher levels of well-being? Are there positive spill-over effects for communities? If so, is it higher levels of hedonic or evaluative well-being that are most associated with participating in the arts?

### *Other studies*

Two other very recent studies, one based on data for Europe and the other based on a survey of university students, find higher than average well-being effects (measured differently in each case) among artists. Bruno Frey and co-authors at the University of Zurich, in research based on data from the European Values Survey, the British Household Panel, and the Swiss Household Panel, find higher than average job satisfaction (along with lower levels of income) among artists (Bille et al, 2013). Yet they also find that suicide rates are higher among artists, and explain those with the higher levels of volatility in living conditions that they may face.

Steven J. Tepper, at the Curb Center for the Arts, Entertainment, and Public Policy at Vanderbilt University, surveyed 13,000 graduates of arts programs and found that arts graduates were “resilient and resourceful”. Eighty three percent of the graduates had jobs working in the arts, while 60% worked more than one job to make ends meet (Grant, 2013).

### ***Research design***

Our research design is based on established methods in the analysis of well-being. For the most part, this consists of regression analysis which has well-being (in one dimension or the other) as the left hand side variable, and the usual socio-demographic and economic variables, along with the particular variable of interest, such as commuting time, participation in religious activities, political affiliation, and/or access to information technology, among others that can be explored, on the right hand side. The investigators, for example, have explored the well-being effects of: the economic crisis in the U.S.; various different health conditions; crime and corruption; exercising and smoking; political affiliation; and access to technology, among others. (Graham, Chattopadhyay, and Picon, 2010b; Graham, Higuera, and Lora, 2011; Graham and Chaparro, 2011; Graham and Nikolova, 2013b). Table 1 provides a summary of the most commonly used questions for measuring well-being.

In the case of this research, the variable of interest is participation in the arts (with separate variables for being a producer rather than a consumer of arts). Unfortunately, the data sets for the U.S. that are available on well-being do not have detailed information on participation in the arts, and the data on the arts do not, at present, have well-being questions there-in. Thus the research design for this proposal is a pilot design, which will utilize regression analysis and matching techniques to compare the well-being levels of individuals who participate (and/or produce) the arts, with those who do not.

We have extensive experience with regression analysis of well-being indicators, both within the U.S. and around the world, and we have also utilized PSM techniques extensively in an analysis of the health and

well-being effects of crime and corruption victimization, among others, (Graham and Chaparro, 2011). Yet in this instance, the data limitations call for a more creative approach, which entails matching the socio-demographic and economic profiles and well-being levels in the Gallup Healthways data with the socio-demographic and economic profiles and participation in the arts data in the Survey of Public Participation in the Arts (SPPA). Because we have to match across data sets, we lose precision at the individual respondent level.

An additional objective of the research, if we find statistically significant relationships, will be to propose the simplest and most cost-effective manner to include either a small number of well-being questions in the SPPA or a small number of arts questions in publicly available U.S. surveys that already have well-being questions there-in. As stated above, developing a method for assessing the benefits of participating in or producing the arts is part of the objective of this research.

### ***Data sources***

The two main data sources for this study are the Gallup Healthways data and the SPPA. The Gallup Healthways is a unique data set that provides daily household level data on individual perceptions. The dataset spans the same period: January 01, 2008 to the present. This dataset is a stratified sample of an average of 1000 households across the U.S. (all localities with land-line phones and mobile cell phone connections), surveyed almost every day for the entire period. The questions in the survey include the demographic details of the respondents (age, race, ethnicity, household size, education level); economic conditions (employment status, job security, job mobility; respondents' perceptions about their standards of living and the state of the economy; access to services (such as health insurance, medical care, telephone and internet); and personal health, emotional experiences, and emotional conditions, among others. Graham serves as an academic advisor to the Gallup polls and, as such, has access to both Gallup World Poll and Gallup Healthways data. She and co-authors have published numerous papers based on both.

The SPPA is a sub-component of the Current Population Survey (CPS) and is publicly available (See <http://www.nea.gov/research/SPPA/index.html/>). The details of the survey are well-known to those who work in the arts or are affiliated with NEA. For our purposes, the detailed socio-economic and demographic data there-in allow us to develop a matching strategy with the Gallup data.

### ***Data analysis and results***

As noted above, a first order objective of our research is to develop an evaluation method; the analysis is thus by nature exploratory. Our point of departure is standard ordered logit regression analysis of the determinants of well-being in the Gallup Healthways data, will establish the well-being traits upon which to match. We then use the average well-being markers from that regression as a dependent variable with variables from the SPPA (the 2008 data as it matches the year for Gallup) representing both consuming and participating in the arts as independent variables, as well as the usual socio-demographic controls, to explore the relative contribution that the arts make to average well-being levels.

Our standard well-being regression in the Gallup data is:

$$\begin{aligned}
BPL_i = & \beta_1 Age_i + \beta_2 Age_i^2 + \beta_3 Gender_i + \beta_4 Marital Status_i + \beta_5 Education Level_i \\
& + \beta_6 Employment Status_i + \beta_7 Household Income_i \\
& + \beta_8 Household Location_i \\
& + \beta_A Individual Affect_i + \beta_H Individual Health_i + \varepsilon_i
\end{aligned}$$

where *best possible life (BPL)*<sup>1</sup> is the individual respondent's score on the Cantril ladder of life question described above in Table 1. Here, Individual Affect is a series (vector) of measures that capture and proxy for the innate tendencies of the individual (such as experience of anger, sadness, joy in the day preceding the interview). Similarly, Individual Health is another series of measures that denote different health conditions (such as diagnosed depression, obesity etc.). These influences could systematically affect the individual respondents' perception of the state of their well-being (BPL), and hence we control for their effects by including them in the estimation.

Based on these results, we calculated the average BPL for cohorts based on variables which we also had in the SPPA and could therefore match across the data sets. We used age, income, and gender as the matching variables (education, which is an obvious one, was not measured in a comparable way across the data sets). As an example, we calculated the average BPL for a 20 year old woman in the 3rd income group in the Gallup data. We then merged that average score from Gallup with all 20 year old women in the 3rd income group in the SPPA data.

We then ran a set of ordinary least squares (OLS) regressions of these assigned average BPL cohort scores on the SPPA data (for the 2002 data as the variables there-in were more complete), controlling for the same individual level variables as in the Gallup regression, but in this instance with the SPPA data that had the demographic particulars of the individual as well as whether they consume or produce different forms of arts, and the frequency with which they do so<sup>2</sup>. The estimated equations were:

$$BPL_i = \beta_D Demographic characteristics_i + \beta_P Arts producer_i + \varepsilon_i$$

$$BPL_i = \beta_D Demographic characteristics_i + \beta_C Arts consumer_i + \varepsilon_i$$

We define *art producers* as those performing jazz, classical music, opera, dance, ballet, play, and/or musicals; and/or making pottery, weaving, painting, writing, or making one's own art. *Art consumers* were those who attended the above – whether in live performances or in recorded broadcasts, as well as visited art fairs, art museums, and historic parks, and collected art. [The number of time the respondents reported having engaged in the activity over the previous 12 month period was our respective frequency of production and consumption.]?

In both sets of regressions, the **demographic characteristics** of the individual includes the respondents' age (and age<sup>2</sup>), gender, level of education, household income, race (white, black, Asian, Hispanic, or other), employment status, hours worked, nature of employment (hourly wage labor versus the rest), and

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<sup>1</sup> Best possible life measured on a 0-10 (11 point) scale.

<sup>2</sup> While the dependent variables – best possible life, satisfaction with standard of living, and smiling a lot yesterday are categorical variables in the Gallup surveys, we use the average levels for these measures when mapping them to the SPPA surveys. The average levels are however not categorical variables, and hence we use OLS regressions for estimation. In addition, it is now increasingly common practice to run OLS regressions on categorical well-being variables.

marital status (married or not). This conforms to the standard procedure of controlling for individual demographic effects by including them in the estimation (as we explained above).

We ran a second set of OLS regressions specified the same way, but with average satisfaction with one's standard of living<sup>3</sup> (for each matched cohort) as the dependent variable.

***Satisfaction with standard of living<sub>i</sub>***

$$= \beta_D \text{Demographic characteristics}_i + \beta_P \text{Arts producer}_i + \varepsilon_i$$

***Satisfaction with standard of living<sub>i</sub>***

$$= \beta_D \text{Demographic characteristics}_i + \beta_C \text{Arts consumer}_i + \varepsilon_i$$

Finally, we ran a third specification with “smiling yesterday”<sup>4</sup> – a measure of positive hedonic well-being – as the left hand side variable, to see if there was a significant linkage between participating in the arts and hedonic well-being.

***Smiling yesterday<sub>i</sub>*** =  $\beta_D \text{Demographic characteristics}_i + \beta_P \text{Arts producer}_i + \varepsilon_i$

***Smiling yesterday<sub>i</sub>*** =  $\beta_D \text{Demographic characteristics}_i + \beta_C \text{Arts consumer}_i + \varepsilon_i$

In each instance we were trying to see whether being a producer or consumer of the arts contributed more to the average cohort level of well-being than not being a producer or a consumer. It is obviously an imprecise exercise, and it only allows us to infer orders of magnitude of the well-being effects rather than to attach any exact metric to the coefficient.

As a way to provide further (imprecise) linkages with the individual level traits of producers and consumers, we ran probit regressions on the SPPA data exclusively, to determine the probability of a person being either a producer or consumer of the arts (respectively). We use the same individual level controls and explanatory variables that we used in the well-being regression in the Gallup data, and add the parameters of racial background and whether the individual had ever been trained through an arts instruction/appreciation class.

***Probability (Arts Producer)<sub>i</sub>***

$$= \beta_1 \text{Age}_i + \beta_2 \text{Age}^2_i + \beta_3 \text{Gender}_i + \beta_4 \text{Marital Status}_i \\ + \beta_5 \text{Years of education}_i + \beta_6 \text{Employment Status}_i + \beta_7 \text{Household Income}_i \\ + \beta_8 \text{Household Location}_i + \beta_R \text{Race}_i + \beta_C \text{Arts instruction class}_i + \varepsilon_i$$

and

***Probability (Arts Consumer)<sub>i</sub>***

$$= \beta_1 \text{Age}_i + \beta_2 \text{Age}^2_i + \beta_3 \text{Gender}_i + \beta_4 \text{Marital Status}_i \\ + \beta_5 \text{Years of education}_i + \beta_6 \text{Employment Status}_i + \beta_7 \text{Household Income}_i \\ + \beta_8 \text{Household Location}_i + \beta_R \text{Race}_i + \beta_C \text{Arts instruction class}_i + \varepsilon_i$$

<sup>3</sup> “Satisfaction with standard of living” is measured on a 0-1 scale.

<sup>4</sup> “Smiled/laughed a lot yesterday” is measured on a 0-1 scale.

In a tiered estimation process for both estimations, we added creative arts to the performing arts for producers, and viewing recorded as well as live performances to our consumers, which increased our sample of participants in the arts, and gave us more robust coefficients. We then compared the profiles of the typical producer and consumers with the prototypical “happy” person in the Gallup data, based on the standard well-being regression for the average individual with BPL as the dependent variable. While this is, yet again, an imprecise exercise, it allows us to get a sense of how the well-being levels of producers and consumers (respectively) compare to the average respondent in the U.S.

## ***Results***

In general, our results provide moderate support for well-being being positively associated with arts consumption and production. As we do not have over-time data on the same people, we cannot say anything about the direction of causality. So the effects might run from the arts to well-being, but they could also run in the opposite direction, with happier people more likely to participate in the arts. For example, some of our earlier work suggests that the happiest respondents care less about income and full-time employment than the average, but care more about learning and creativity (Graham and Nikolova, 2013). It is also important to note that the imprecise nature of our matching exercise coupled with the averaging of the well-being scores by cohorts may be eliminating important variation across individuals and therefore may well be underestimating the potential association.

In terms of average levels of BPL (our measure of evaluative well-being/happiness), we found that consumers of the arts were, on average, happier than the average. More specifically, consumers of classical music, musicals, theater, dance, art museums, and art fairs were all happier than the average, while there was no significant effect on jazz or Latin music. [Table 1] In contrast, we found nothing significant on consuming the other arts or on being a producer of any of the arts, with the exception of singing in plays, which was positive and significant (dancing performers were slightly *less* happy than the average, but that was only significant at the 10% level). [Table 2].

We also explored the effects of the arts on respondents’ satisfaction with their standards of living (a variable which is correlated with well-being more generally). As above, we found a significant and positive correlation between being a consumer of the arts and satisfaction with one’s standard of living. In other words, controlling for a host of individual variables such as age, income, race, and urban or rural area of location, among others, respondents who are consumers of the arts are, on average, more satisfied with their standards of living than is the average for their gender, and age and income cohort.

As above, being a producer of the arts had no significant relationship on average. [Table 3] Departing from the average, though, producers of jazz, classical music, and those who sang in plays were more likely to be satisfied with their standards of living. To explore a potential channel, we compared the hours worked per week of producers and non-producers, and found that producers worked slightly less hours than non-producers; as such, those art producers that are more satisfied with their standard of living are likely willing to trade-off more job stability and income to, instead, spend their lives producing art that they are passionate about or find fulfilling. [Results on hours worked are available from the authors]. Causality could run in the other direction, as well, though, as choosing to produce the arts requires the capacity to do so, both in terms of talent and of financial sacrifice.

Producing the arts may involve sacrificing income and job stability, but is a more active form of involvement than simply consuming them. Other studies of well-being find, for example, that those respondents that actually participate in democracy are, on average, happier than those that simply live in and benefit from the same regimes, all else held equal (Frey and Stutzer, 2002). Other studies find that respondents that win lotteries who give their money away to charity or to other causes they deem worthy are happier than those who simply keep the money, again suggesting that the act of doing something meaningful has well-being benefits of its own (Dunn et al. 2008). Finally, another study, based on workers in Latin America, finds that those respondents who are simply satisfied with their jobs are no more productive than the average, while those who report to do something meaningful at work are significantly productive than the average (Chaparro and Lora, 2011).

Our results on our smiling yesterday variable were inconclusive for the most part, suggesting, as above, that the evaluative dimension of well-being is a more important link than is hedonic well-being in the arts. We did, however, find that those respondents that sing in plays smile more than the average. We leave it to the experts on the arts to help us explain that particular if cheerful finding! In line with the rest of the results, though, it does suggest that even the linkage with hedonic well-being is greater in the active involvement of the arts rather than in simply consuming them. [Results on smiling available from the authors].

Finally, we interacted respondents' race (white, black, or Hispanic) with each of the particular arts produced, in the hopes that we might find some culturally based well-being linkages with particular arts. Our results were, again, inconclusive. A note of caution is necessary here, as the averaging of the well-being scores may be washing out some more nuanced variance that we are in turn unable to capture in our matched cohort exercise. [Results with interactions are available from the authors].

We then looked more closely at how the standard control variables in a well-being regression correlated with the probability of being a producer or a consumer of the arts. Our results were mixed but ran roughly in the same direction. In this instance, our regressions had stronger predictive power for the consumers rather than the producers. In addition, our coefficients were stronger when we broadened our sample of participants in the arts to include participating in the creative arts for producers and viewing recorded arts for consumers.

We found that consumers of the arts were likely to be wealthier and more educated than the average, to be employed, to be women, to live in an urban area, and to be white rather than black or Asian. Producers of the arts were more likely to be female, living in an urban area, and to be white rather than black or Asian. Like consumers they were less likely to be married, but unlike consumers they were no different from the average in terms of income and education. [See Table 4] Having prior instruction (e.g. having taken music or arts or dance class) was positively associated with being a consumer of the arts, and had a more limited association with being a producer of the arts.

How do these traits compare to the typical "happy" person in the U.S.? The typical happier than the average person in the U.S. is either younger or older than age 44, more likely to be female, wealthier and more educated than the average, married, employed, lives in an urban area, and is white or black rather than Asian. As such, the profiles of the consumers in the SPPA data set are closer to the prototypical "happy" person in the Gallup U.S. survey than are those of producers. Some of the traits of the latter clearly depart from that prototype, in particular in terms of being less likely to be employed full-time.

That said, our first set of results suggest that producers of *some* arts (jazz, classical, and plays) are more satisfied with their standards of living than the average, precisely because they have selected into the professions that they want to be in even if they are less stable (and our results in the matched regressions discussed above suggest that producers work less hours than the average).

Other research of ours supports this interpretation. In an analysis of data for the U.S. and Europe, we find that those workers who are employed part-time voluntarily (e.g. because they have chosen to be) are the happiest and least stressed of all working categories (Nikolova and Graham, 2014). One reason for this may be that those workers are working in professions that they want to be in, even if they are not standard full-time jobs. These findings complement those on the happiest respondents (discussed above), who value full-time employment the least but learning and creativity the most.

While we do not have precise measures of the social externalities or not of these findings, we can, again, infer some possible channels from other research. A number of studies, including our own, find positive externalities from being around happier people. Unlike income, where higher average levels tend to lower individual happiness due to an envy or comparison effect, higher average neighborhood or peer group happiness levels are typically associated with an additional happiness level for individuals (controlling for individual happiness) (Graham, Higuera, and Lora, 2011; Chullun, Graham, and Myanganbuu, 2013). Other studies find that the positive effects of being around (moderate not extreme) religious people, who tend to display social purpose and who tend to socialize, extend beyond those with faith (Clark and Lelkes, 2009). One can imagine that being around creative people –who either consume or produce arts and have concerns beyond simply making a living - could have positive social externalities, although we do not have a precise measure of this at this point. As such, our results are suggestive of avenues that could be pursued in future research.

### ***Conclusions and Future Research***

Our findings suggest a positive if modest linkage between participating in the arts and well-being. The linkage is clearest in the evaluative well-being dimension rather than the hedonic one. Consumption of the arts had the most consistent linkages to well-being. Not surprisingly, the profiles of typical consumers of the arts, meanwhile – wealthier, more educated, female, employed, and urban – also fit with the profile of those respondents that are likely to be happier than the average. The producers of some arts, meanwhile (jazz, classical, and plays) were more likely to be satisfied with their standards of living, even though they were not wealthier than the average as are consumers of the arts (who are also more satisfied with their standards of living).

Our earlier research suggests that happier respondents are more likely to value learning and creativity, which fits the profile of arts producers in general. One can imagine that those respondents who spend their working time producing something that they find very meaningful (and thus enhancing well-being in the eudemonic dimension) are, on average, more satisfied with their standards of living even if they actually earn less income than the average and have less stable jobs. Research in other areas, such as in life satisfaction and religiosity, suggest that there may be positive social externalities which stem from being around others with purpose or meaning in life or who are simply happier. It is surely plausible that this could also result from having artists in the community, but we lack precise measures of this at this juncture.

Our results are a first exploration into this topic, and as we had to match across two data sets with very modest precision given the comparability of variables across the two, they are only suggestive. Indeed, because of the averaging of well-being scores across cohorts that our matching required, we may well be missing – and underestimating – important variation in well-being levels within those cohorts and across personalities within them.

A future step could be to explore the possibility of including one or two direct variables on participating in the arts (such as consuming them in general and producing them in general) in the next round of an existing survey, such as the American Time-Use Survey or another survey such as the GSS, both of which have data on well-being (the ATUS has more detailed data on both time use and on different well-being dimensions but is a smaller survey than the GSS). Another option would be to include one evaluative and one hedonic well-being question in the next round of the SPPA.

Establishing causality, such as the linkages between participating in the arts and behavioral outcomes, meanwhile, will only be possible once both well-being data and arts data are both in a panel data set which follows the same respondents over time, such as the PSID, in the same data set, and preferably in a panel set. Answering that set of questions, however, is for a next stage of research if and when the data become available.

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**Table 1: Terminology**

<b>Evaluative questions: Capture reflection of long-term life evaluation</b>		
<b>Happiness</b>	How happy are you in your life? Very happy = 4 - Very unhappy = 0	Most open-ended; least well defined of well-being terms Attracts most public attention Does not impose definition of happiness on respondents
<b>Life satisfaction</b>	How satisfied are you with your life? Very satisfied = 4 - Very unsatisfied = 0	Correlates closely with happiness, but more closely with income than does happiness Reflects thoughts on life circumstances as a whole
<b>Cantril's ladder of life question</b>	On a scale of 0 (worst possible life) - 10 (best possible life), how do you rate your life conditions now?	Respondents compare their lives to the best possible life Introduces a relative component Correlates even more closely with income
	On the same 0 - 10 scale, how do you rate your life conditions 5 years ago?	
	On the same 0 - 10 scale, how do you rate your anticipated life conditions 5 years hence?	
<b>Experience-based questions: Capture moods at particular moments in the day</b>		
<b>Smile, joy, love</b>	Did you experience each of these emotions yesterday? (In separate questions)	Capture positive affect, experiences Correlate positively with most evaluative questions
<b>Sadness, anger, pain, worry, stress, boredom, depression</b>	Did you experience each of these emotions yesterday? (In separate questions)	Capture negative affect, experiences Correlate negatively with most evaluative questions

Sources: Kahneman et al. (2004); Graham, Chattopadhyay, and Picon (2010a)

**Table 2: Best Possible Life**

Variable descriptions	(1) Best possible life	(2) Best possible life
Age	-0.106*** (0.002)	-0.107*** (0.002)
Age squared	0.001*** (0.000)	0.001*** (0.000)
Gender: 1=Male 0=Female	-0.084*** (0.014)	-0.060*** (0.016)
Years of education	0.049*** (0.002)	0.049*** (0.002)
Married: 1=Yes 0=No (including separated)	-0.394*** (0.032)	-0.399*** (0.036)
Household income: Group midpoints in '000\$	0.000** (0.000)	0.001*** (0.000)
Employed: 1=Yes 0=No (Unemp & Out of LF)	-0.104*** (0.016)	-0.099*** (0.019)
Own house: 1=Yes 0=No	0.051*** (0.014)	0.049*** (0.017)
Metropolitan area: 1=Yes 0=No	0.017 (0.016)	0.014 (0.019)
Race: Black 1=Yes, 0=Other	0.045** (0.020)	0.025 (0.023)
Race: Indigenous 1=Yes, 0=Other	0.134** (0.066)	0.022 (0.076)
Race: Asian 1=Yes, 0=Other	0.021 (0.043)	0.026 (0.055)
Race: Other 1=Yes, 0=Other	0.038 (0.048)	-0.022 (0.055)
Art Consumer: 1=Yes 0=No	0.025* (0.014)	
Art Producer: 1=Yes 0=No		0.023 (0.079)
Constant	7.665*** (0.047)	7.651*** (0.096)
<i>Number of observations</i>	4,457	3,460
<i>Pseudo R-squared</i>	0.518	0.505

Standard errors in parentheses

\*\*\* p&lt;0.01, \*\* p&lt;0.05, \* p&lt;0.1

Note: Results on individual art categories are available from the authors.

**Table 3: Satisfaction with Standard of Living**

Variable descriptions	(1) Satisfaction with standard of living	(2) Satisfaction with standard of living
Age	-0.027*** (0.000)	-0.028*** (0.000)
Age squared	0.000*** (0.000)	0.000*** (0.000)
Gender: 1=Male 0=Female	0.050*** (0.003)	0.052*** (0.003)
Years of education	0.006*** (0.000)	0.006*** (0.000)
Married: 1=Yes 0=No (including separated)	-0.080*** (0.007)	-0.074*** (0.007)
Household income: Group midpoints in '000\$	0.000** (0.000)	0.000** (0.000)
Employed: 1=Yes 0=No (Unemp & Out of LF)	-0.025*** (0.003)	-0.024*** (0.004)
Own house: 1=Yes 0=No	0.014*** (0.003)	0.010*** (0.003)
Metropolitan area: 1=Yes 0=No	0.003 (0.003)	0.001 (0.004)
Race: Black 1=Yes, 0=Other	0.006 (0.004)	0.002 (0.005)
Race: Indigenous 1=Yes, 0=Other	0.000 (0.014)	-0.007 (0.015)
Race: Asian 1=Yes, 0=Other	0.008 (0.009)	0.001 (0.011)
Race: Other 1=Yes, 0=Other	0.007 (0.010)	-0.005 (0.011)
Art Consumer: 1=Yes 0=No	0.007** (0.003)	
Art Producer: 1=Yes 0=No		-0.019 (0.016)
Constant	1.082*** (0.010)	1.113*** (0.019)
<i>Number of observations</i>	4,456	3,459
<i>Pseudo R-squared</i>	0.620	0.623

Standard errors in parentheses  
 \*\*\* p<0.01, \*\* p<0.05, \* p<0.1

Note: Results on individual art categories are available from the authors.

**Table 4: Probability of being an Arts Consumer and an Arts Producer**

Variable descriptions	(1) Arts Consumer	(2) Arts Consumer	(3) Arts Producer	(4) Arts Producer
Age	0.003*	0.006***	0.001	0.001*
	(0.002)	(0.002)	(0.001)	(0.001)
Age squared	-0.000	-0.000	-0.000**	-0.000**
	(0.000)	(0.000)	(0.000)	(0.000)
Gender: 1=Male 0=Female	-0.111***	-0.059***	-0.019***	-0.014***
	(0.009)	(0.009)	(0.005)	(0.004)
Years of education	0.046***	0.027***	-0.000	-0.001
	(0.001)	(0.001)	(0.001)	(0.001)
Married: 1=Y 0=N (including separated)	-0.068***	-0.045***	-0.011**	-0.007**
	(0.009)	(0.010)	(0.004)	(0.004)
Household income: Group midpoints in '000\$	0.002***	0.002***	0.000	0.000
	(0.000)	(0.000)	(0.000)	(0.000)
Employed: 1=Y 0=No (Unemp & Out of LF)	0.021**	0.015	-0.004	-0.004
	(0.011)	(0.011)	(0.005)	(0.004)
Metropolitan area: 1=Y 0=N	0.085***	0.093***	0.007*	0.006*
	(0.009)	(0.009)	(0.004)	(0.003)
Race: Black 1=Y, 0=Other	-0.033**	0.030**	-0.083***	-0.063***
	(0.015)	(0.015)	(0.016)	(0.014)
Race: Indigenous 1=Y, 0=Other	-0.030	-0.039		
	(0.040)	(0.042)		
Race: Asian 1=Y, 0=Other	-0.132***	-0.073***	0.013	0.012*
	(0.022)	(0.023)	(0.008)	(0.006)
Ever took music class 1=Y 0=N		0.200***		-0.009***
		(0.009)		(0.003)
Ever took visual art class 1=Y 0=N		0.169***		0.021***
		(0.013)		(0.004)
Ever took dance class 1=Y 0=N		0.162***		0.006
		(0.015)		(0.004)
Ever took writing class 1=Y 0=N		0.174***		0.013***
		(0.014)		(0.004)
Ever took art appreciation class 1=Y 0=N		0.185***		0.005
		(0.013)		(0.004)
<i>Number of observations</i>	<i>15,280</i>	<i>15,056</i>	<i>6,126</i>	<i>6,012</i>
<i>Pseudo R-squared</i>	<i>0.114</i>	<i>0.217</i>	<i>0.0645</i>	<i>0.105</i>

Standard errors in parentheses

\*\*\* p&lt;0.01, \*\* p&lt;0.05, \* p&lt;0.1

Marginal effects of probit estimation