university of groningen

faculty of economics and business

14014-EEF

Unpacking the determinants of life satisfaction: A survey experiment

Viola Angelini
Marco Bertoni
Luca Corazzini

SOM is the research institute of the Faculty of Economics & Business at the University of Groningen. SOM has six programmes:
- Economics, Econometrics and Finance
- Global Economics & Management
- Human Resource Management & Organizational Behaviour
- Innovation & Organization
- Marketing
- Operations Management & Operations Research

Research Institute SOM
Faculty of Economics & Business
University of Groningen

Visiting address:
Nettelbosje 2
9747 AE Groningen
The Netherlands

Postal address:
P.O. Box 800
9700 AV Groningen
The Netherlands

T +31 50 363 7068/3815

www.rug.nl/feb/research

Unpacking the determinants of life satisfaction: A survey experiment.

Viola Angelini
University of Groningen

Marco Bertoni
University of Padova and London School of Economics

Luca Corazzini
University of Padova and Bocconi University

Unpacking the Determinants of Life Satisfaction: A Survey Experiment*

Viola Angelini† Marco Bertoni‡ Luca Corazzini§

May 12, 2014

Abstract

We present results of a survey experiment aimed at assessing context effects on subjects' reported life satisfaction, exerted by raising awareness of fundamental life domains - income, family, job, friends, sentimental relationships and health - through questionnaire manipulations. While simply presenting subjects with the list of the domains before evaluating overall life satisfaction has no effect on the distribution of life satisfaction, asking subjects to report their satisfaction with each life domain strongly affects overall evaluations. In particular, we detect a robust unpacking effect, whereby reporting satisfaction with life domains significantly increases the subsequent overall life satisfaction evaluations. In addition, raising awareness of life domains significantly increases precision (as it reduces the dispersion of responses) and accuracy (by increasing the association between life satisfaction and life domain evaluations) of self-reported levels of life satisfaction.

JEL classification: C42, C99, I31.
Keywords: Life Satisfaction, Unpacking Effects, Survey Experiments.

*The survey experiment was run by Alessandra Cometa under the supervision of Luca Corazzini, in partial fulfillment of her M.Sc. thesis in Management at Bocconi University. We thank Alessandra for her brilliant research assistance. The usual disclaimers apply.

†Department of Economics, Econometrics and Finance, University of Groningen, PO Box 800, Groningen, 9700 AV, The Netherlands, and Netspar, PO Box 90153, Tilburg, 5000 LE, The Netherlands. Email: v.angelini@rug.nl

‡Department of Economics and Management, University of Padova, via del Santo, 33, 35123 Padova, Italy, and Centre for Economic Performance, London School of Economics, Houghton Street, WC2A 2AE, London, UK. Email: marco.bertoni@unipd.it

§Corresponding author. Department of Economics and Management, University of Padova, via del Santo, 33, Padova 35123, Italy and ISLA, Bocconi University, via Röntgen, 1, Milan 20136, Italy. Email: luca.corazzini@unipd.it

"It isn't what you have or who you are or where you are or what you are doing that makes you happy or unhappy. It is what you think about it."
Dale Carnegie, 1936. *How to Win Friends and Influence People.*

1 Introduction

The incapacity of objective economic indicators (such as per capita GDP, real wages, and financial wealth) to fully account for important aspects of citizens' life has driven social scientists to develop novel and sophisticated measures of subjective well-being (SWB hereafter). Among many approaches, those relying on data from representative general surveys are the most promising and commonly used (see Frey and Stutzer 2002a, b; van Praag and Ferrer-i-Carbonell 2004; Bruni and Porta 2005; Dolan et al. 2008 for surveys). In these surveys, subjects are presented with a large number of questions concerning their socio-economic, demographic and health conditions. In addition, they are asked to self-report their life satisfaction on an ordered scale going from very dissatisfied to very satisfied. On the basis of subjects' responses, social scientists seek to identify the relationship between the self-reported level of life satisfaction, the information provided on life domains, and several other respondents' characteristics.
Standard assumptions of survey studies posit that respondents consciously and correctly report subjective information, and that this information is interpersonally comparable. Of course, such assumptions are rather than innocuous. In particular, evaluating the level of satisfaction with one's own life is a complex task that requires sophisticated cognitive processes to make sense of the question asked, build up a mental image of their life, and formulate and report adequate judgments (Schwartz and Strack, 1991). In this perspective, it is reasonable to expect that format elements such as framing, number and order of questions, as well as the information inferred from preceding tasks, exert strong psychological effects on subjects' responses, and influence their informative content. The literature (see the next section for a comprehensive review of contributions in psychology and economics) refers to these psychological survey artifacts as *context effects*.
In this paper, we present results of a survey experiment aimed at assessing context effects in subjects' reported satisfaction with life, exerted by raising awareness of fundamental life domains - income, family, job, friends, sentimental relationships and health - through questionnaire manipulations. In particular, we compare overall life satisfaction evaluations from a benchmark questionnaire with no reference to life domains to those reported in two dif-

ferent questionnaires containing explicit reference to life domains. In both variants, before reporting their life satisfaction, subjects are presented with a list of the six life domains. However, only in the second variant subjects are required to evaluate their satisfaction with each single life domain.
Context effects are likely to influence both the level and precision of self-reported life satisfaction. First, according to the Support Theory (see Tversky and Koehler, 1994), unpacking life domains and enhancing their salience might induce subjects to report higher levels of life satisfaction. Second, by helping subjects to build a more accurate representation of the object to be evaluated, raising awareness of life domains increases the precision of responses which, in turn, results into a lower dispersion of subjective evaluations. Finally, when subjects are induced to accurately think about the determinants of life satisfaction, it is more likely that the overall evaluation better reflects a weighted aggregation of the life domains.
Although the psychological literature is rich of contributions that analyze how the structure of the questionnaire affects subjects‘ responses (see the next section for a comprehensive review of psychological and economic studies), as far as we know there is no study that seeks to disentangle and measure the empirical relevance of the abovementioned context effects in reporting life satisfaction. Moreover, a novel feature of our design is that we study how context effects change when the intensity of the awareness manipulation is gradually increased across questionnaire versions, starting from one with no reference to the life domains, moving to one that involves a weak manipulation in which subjects are simply presented with the list of life domains and, in turn, considering one that introduces a strong manipulation, in that subjects are also required to evaluate their satisfaction with each domain. Finally, no contribution exploits both within and between subjects variation, as we instead do.
While simply presenting subjects with a list of life domains does not alter their responses, we detect strong context effects on both the level and precision of the life satisfaction evaluations in the questionnaire with the strong awareness manipulation. First, coherently with the predictions provided by the Support Theory, unpacking life domains and letting subjects express evaluations on each of them increase the self-reported levels of life satisfaction. Second, by comparing the response distributions between the benchmark and the questionnaire involving evaluations of life domains, we find a lower dispersion of reported levels in the latter version. Together, these results suggest that context effects crucially affect the way respondents understand satisfaction with life questions: raising awareness of important determinants of life satisfaction reduces uncertainty on the meaning of the

question and makes subjects more incline to express higher evaluations, that are also more aligned with satisfaction with domains.
The paper unfolds as follows. In the next section, we review the relevant psychological and economic literature dealing with context effects. In Section 3, we present our experimental design and state testable predictions by following the psychological literature. In Section 4, we discuss our econometric approach and present the results on levels and variance of reported life satisfaction, as well as on the association between overall evaluations and satisfaction with the six domains. Finally, in Section 5, we discuss the relevance of our findings and conclude.

2 Literature review

This paper builds principally upon the literature on context effects in the elicitation of attitudes in surveys[1]. In our case, context effects can be framed within models depicting the cognitive process respondents rely on when asked about satisfaction with life. Schwartz and Strack, 1991, highlight how such questions require respondents to carry out an almost-impossible task in a very limited amount of time: in less than a minute (Diener et al., 2000) they ought to make sense of the question asked, retrieve the relevant information, make a judgment, report it in accordance with the alternatives provided by the researchers and, in some instances, adjust it to match criteria of social desirability. As a consequence, reported levels of life satisfaction can be thought of as spot judgments, mainly based on information that is accessible at that point in time (Schwartz and Strack, 1999). Individuals truncate the information-search process as soon as they have collected enough information to formulate a judgment (Schwartz, 1999), and, by affecting the accessibility and salience of the information respondents use to build up a mental image of their life, prior items asked in the questionnaire may provide a framework to respond to later questions, generating context effects.
For instance, Strack, Martin and Schwartz, 1988, show that correlation between satisfaction with dating life and satisfaction with life in general is higher when the specific question is asked before the general one. Similar findings are obtained also by McClendon and O'Brien, 1988, in a more gen-

[1] Tourangeau and Rasinski, 1988, and Schwartz, 1999, provide thorough reviews of the relevant literature, while Schwarz and Strack, 1999, focus in particular on subjective wellbeing questions.

eral setup that does not deal with satisfaction with dating only. Schwarz, Strack and Mai, 1991, show instead that satisfaction with life is less correlated with satisfaction with marriage when this is not the only specific question asked before the general one, as the relevance of primed information declines with its amount (Schuman and Presser, 1981). In a similar fashion, McClendon and O'Brien, 1988, find that correlation among satisfaction with a specific domain and satisfaction with life in general increases with the closeness of the specific and the general item in the questionnaire. In line with this literature, we expect that information primed by listing or asking people to evaluate satisfaction with specific life domains could increase the reliability of the information about overall life satisfaction, as a more thorough information-seeking process ought to be carried out by respondents.

The nature of the information primed is also relevant to generate context effects, as not all of it is used to formulate subsequent judgments. Strack, Schwartz and Gschneidinger, 1985, show that life satisfaction evaluations of respondents who are asked to recall three positive life events before answering to the general questions are higher than those of respondents who are asked to recall three negative life events. On the basis of an experiment where subjects are asked about satisfaction with their dating lives and with life in general, Strack, Martin and Schwartz, 1988, show that when a specific and a general question are placed within a conversational context where the researcher shows interest in both domains separately, information competing to the domain elicited by the specific question might be disregarded when answering the general one, as it might be considered as redundant[2]. In this sense, the two different manipulations we carry out may be less or more salient in terms of information retrieval, and may have differential effects on the informational content of the general question.

Information primed by previous questions may not affect life satisfaction evaluations only in the information-retrieval phase. Schwartz and Strack, 1999, highlight how context information also affects the respondent's understanding of the meaning of the life satisfaction question: does the researcher mean life as it was, as it is now, or as it will be? What aspects of life are of interest for the researcher? Similarly, McClendon and O'Brien, 1988, argue that by providing a clear frame of reference, contextual information should allow people to reduce measurement error due to "guessing", and thus increase the reliability of the judgment expressed.

[2]Tourangeau, Rasinksi and Bradburn, 1991, refer to this as a "subtraction" effect, while Schwartz, Strack and Mai, 1991, interpret it as a "contrast" effects.

Conti and Pudney, 2011, analyse context effects in the reporting phase, related with labeling of the answer categories and with face-to-face interviews versus self-completion questionnaires. Exploiting exogenous variation in the labeling of the categories of a job satisfaction question across waves in the British Household Panel Survey - BHPS, they find that women are less likely than men to tick a response option that is numerically but not textually labeled, because of different preferences towards verbal versus numerical communication across genders. Furthermore, they show that oral interviews and the presence of children during interviews produce more positive satisfaction judgments (the "let's put on a good show for the interviewer" and "not in front of the children" effects), and that women report lower job satisfaction if the partner is present during the interview, to conform to social norms about gender roles (the "don't show your partner how satisfied you are" effect).

As general life satisfaction evaluations are carried out on the spot, mood-state effects might be present as well, and it has been shown that mood affects general questions more than questions related to specific life domains. For instance, Schwartz and Clore, 1983, show that satisfaction with life in general is lower for individuals that are asked about it on a rainy day, while Schwarz et al., 1987, find that Germans express higher satisfaction with life as a whole after the national soccer team wins a match, but no changes in satisfaction with specific life domains. Diener et al., 2000, also highlight how the general "positivity" of respondents might affect evaluations of life satisfaction, as these may reflect latent dispositional tendencies more than evaluative judgments[3].

From a different perspective, enlisting life domains relevant for satisfaction with life or asking respondents to evaluate their satisfaction with these domains before expressing a general evaluation can generate what van Boven and Epley, 2003, call "unpacking effects". In their view, presenting more detailed descriptions of a given event may change the subjective perception people hold of it, and make it more extreme. In a set of experiments, they show that people are less prone to give mild evaluations when they are presented with or asked to generate more detailed descriptions of a situation they are asked to evaluate (e.g. sludge burning operations causing "all kinds of respiratory diseases" vs. "asthma, lung cancer, throat cancer and all kinds of respiratory diseases", or a tropical vacation where students could

[3]This point is raised in a different flavour also by Clark et al., 2005, and Angelini et al., 2014, that stress how people might attach the same label to different concepts of wellbeing, or may associate the same condition to different labels, hampering interpersonal comparability of SWB evaluations because of differences in reporting styles.

practice "all kinds of water sports" vs. a full set of water sports they were asked to enlist in a previous question). According to the authors, unpacking a description makes it easier for people to remind constituent elements they would not have considered otherwise, to generate a better mental image of the situation, and to think more in depth about the event. All these features allow respondents to gain awareness and to come forward with more extreme evaluations, that they would have probably not dared giving without a thorough comprehension of the topic to be assessed. Our survey experiment is the first case of "unpacking" manipulations in a life satisfaction questionnaire, and we expect to find similar results to the ones reported above here. Van Boven and Epley, 2003, claim that unpacking effects extend the "support theory" for probability judgments proposed by Tversky and Koehler, 1994, to evaluative judgments. Support theory states that detailing events into their disjoint components increases the overall perceived probability that the event may occur (e.g. the perceived probability of death by meningitis is lower than the sum of the perceived probabilities of death by viral meningitis or bacterial meningitis). In economics, part-whole bias in contingent valuation is a similar phenomenon: when asked to evaluate them separately, people are willing to pay more for the separate components of a good than for the bundled solution. Bateman et al., 1997, experimentally prove that this principle holds for the case of a drink and a burger vs. a fast-food menu made of the two goods, while Bernasconi et al., 2009, show that unpacking a single public good into two components increases private contributions to support its provision.

3 The Survey Experiment

3.1 Experimental Design

This study aims at assessing whether raising awareness of important life domains affects how subjects evaluate their satisfaction with life. In a nutshell, we manipulate the level of awareness by administering three different versions of a baseline questionnaire on life satisfaction: one including no reference to the life domains (henceforth indicated as T1), one simply presenting the list of the domains (T2) and, finally, one that requires subjects to explicitly evaluate satisfaction with each domain (T3). More specifically, in our experiment we refer to six life domains - income, family, job, friends, sentimental relationships and health, that the literature has identified as main determinants of life satisfaction (Frey and Stutzer, 2002 a, b; Dolan,

Peasgood and White, 2008). In all versions of the questionnaire, subjects are then required to report their life satisfaction by using the standard question "How satisfied are you with your life in general?" on a 10-point scale going from "very dissatisfied" to "very satisfied". We are interested in understanding how the mean and the dispersion of the life satisfaction measure varies across treatments.
In details, the structure of the three treatments implemented in our experiment is graphically represented in Figure 1. The precise phrasing of the questionnaire manipulations is reported in the Appendix.

[FIGURE 1 ABOUT HERE]

Subjects in T1 take part in a two-phase experiment. In the first phase, subjects fill in a questionnaire that is divided into two parts. The first part contains general questions on the demographic, socio-economic and health conditions of the respondents. In the second part, instead, subjects report their life satisfaction. No reference to the life domains is made.
After 20 days from the first phase of the survey experiment, subjects in T1 are unexpectedly invited to complete a new and shorter questionnaire asking them to state - according to a 10-point scale - whether they agree to be satisfied with each of the following six life domains: income, family, job, friends, sentimental relationships and health. Subjects are told that the choice of the six life domains is motivated by the existing literature studying life satisfaction and its determinants. After completing the evaluations of the domains, subjects are required to report their overall life satisfaction, as in the first phase.
The only difference between T1 and T2 concerns the first phase of the experiment. Indeed, before reporting their life satisfaction, subjects in T2 are asked the same socio-economic questions used in T1. However, they are also presented with a list containing the six life domains; subjects are simply invited to read the list, and are not required to express any explicit evaluation about the domains. Then, subjects report their overall life satisfaction on a 10-point scale. Apart from this difference, the design of T2 replicates that used in T1. In particular, the general questions in the first phase, as well as the timing, structure and questions of the second phase are kept constant between the two treatments.
On the other hand, T3 consists of a single phase, in which subjects first answer the general questions on their demographic, socio-economic and health conditions, and are then administered the same questions about their satisfaction with life domains and with life in general used in the second phase

of the other two treatments.
Two aspects of our experimental design are particularly worth noticing from a methodological perspective. First, the impact of enhancing awareness on life satisfaction is ascertained by disentangling the mere effect of providing information about the domains from that of letting subjects think deeply and evaluate each aspect of life. Second, our design allows us to assess results both between and within subjects, by comparing the distribution of life satisfaction in the first phase across the three treatments and between the two phases of T1 and T2, respectively.

3.2 Procedures

The survey experiment took place between January and February 2013 and was administered by using Qualtrics (http://www.qualtrics.com/). Subjects are mainly students of economics from three different universities in Northern Italy[4], and were recruited by email after advertising the experiment through Facebook university groups. Once agreed to participate in the study, each subject was randomly and anonymously assigned to (only) one of the three different treatments[5].

3.3 Testable Predictions

The two standard assumptions behind survey studies on the determinants of subjective wellbeing are that (i) subjects are able to evaluate their satisfaction with life and (ii) their evaluations do not depend on the order in which the questions are asked, e.g. on whether the question on overall life satisfaction is asked before or after specific life domains are presented in the questionnaire. This framework provides null predictions for our study, as we should observe differences neither in the distribution of life satisfaction evaluations across treatments, nor in the correlation between evaluations of life domains and the measures of life satisfaction reported in the two phases of T1 and T2.
However, as discussed in Section 2, there is a rich literature highlighting the existence of context effects in survey studies (see Schwartz and Strack, 1999). In this respect, we are interested in assessing how the questionnaire manipu-

[4]Bocconi University in Milan, University of Varese-Insubria, and University of Padova.

[5]In order to guarantee anonymity and correctly match the responses across the two phases of T1 and T2, subjects were required to provide the first six digits of their personal tax code (which is an alpha-numeric code of 16 characters).

lations introduced in our survey experiment influence the self-reported levels of life satisfaction and its association with life domains. On the one hand, there are two valid arguments to expect both the mean and the variance of the distribution of evaluations to vary across treatments and between phases.
First, scholars of the Support Theory suggest that, in evaluative judgments, "the whole is less than the sum of its parts" (van Boven and Epley, 2003) and priming important details of objects to evaluate might induce subjects to report more extreme evaluations[6]. Therefore, we state our first testable prediction as follows:

HP.1. ***"The Unpacking Effect".*** Priming life domains induces subjects to report higher levels of life satisfaction.

Our experimental design allows us to better investigate into the empirical validity of HP.1, as we are able to disentangle the mere effect of providing information on important aspects of life from a more salient priming mechanism that relies on evaluating each life domain. Thus, by the unpacking effect hypothesis, we expect higher reported levels of life satisfaction when the overall evaluation is preceded by indications on the life domains, with this effect being stronger when subjects are required to express their satisfaction with these specific aspects of life.
By still focusing on the distribution of self-reported levels of life satisfaction, our second prediction concerns the effects of priming information about life domains on the overall evaluations. Indeed, by affecting the accessibility and salience of information, priming life domains might facilitate subjects in building up an adequate image of life satisfaction that can be used to express meaningful evaluations (Schwartz and Strack, 1991; Schwartz and Strack, 1999; Schwartz, 1999). Thus, it is reasonable to expect the variance of responses to be influenced by the questionnaire manipulations as subjects are likely to express more precise evaluations when information on life domains is provided.

[6] "More extreme" refers to the tendency of subjects to report higher values on the ordered scale used to express responses. As noticed by van Boven and Epley, 2003, both in expressing positive (for instance, anticipated enjoyment with Bahamas vacation) and negative (for instance, suffering for health-detriments from pollution produced by an oil refinery) evaluations, subjects tend to report higher values in the scale under the unpacking manipulation. We expect unpacking effects to positively affect life satisfaction evaluations, even because most of our sample is composed of relatively young, middle-class, well-educated, and healthy individuals.

HP.2. ***"Making sense of the question asked".*** Priming life domains increases the precision of evaluative judgments and reduces the standard deviation of the life satisfaction distribution.

Again, as we manipulate the salience of the life domains across treatments and phases , we should expect the effect conjectured in HP.2 to be stronger when subjects express specific and separate evaluations on the domains than in the case in which they are simply presented with the list containing indications on these aspects of life. Our last prediction concerns how enhancing salience of the life domains affects the correlation between life satisfaction and the evaluation expressed for each domain. As highlighted in the previous section, subjects in T1 report their life satisfaction two times, with the second response (in the second phase) being expressed after the evaluations of the life domains. Thus, in formulating their second response, subjects in T1 can use all the accessible information on life satisfaction they obtain by facing specific questions on satisfaction with life domains (Schwartz and Strack, 1991; Schwartz and Strack, 1999). In addition to facilitating subjects to formulate a mental representation of life satisfaction (see HP.2), it is reasonable to expect the second response to exhibit a stronger (and more robust) association with the evaluations of the life domains just stated. Of course, under the assumption that the salience of life domains depends on priming manipulations, and that listing the domains has a weaker priming effect than asking subjects to provide evaluations of each domain, we should observe a similar effect of priming on correlations between life satisfaction and evaluations of life domains in T2.

HP.3. ***"Awareness and accessibility of information".*** Priming life domains increases the association between their evaluations and the reported levels of overall life satisfaction.

4 Empirical analysis

This section describes our empirical analysis. We start by presenting the data and by showing some descriptive statistics related to the testable predictions. Then we move to a more formal econometric analysis. We will describe the empirical models exploited as we go through the analysis.

4.1 Data and descriptive statistics

Our sample is composed of the subjects who took part in the experiment described in Section 2[7]. Information recalled through the questionnaire consists of a set of questions about satisfaction with life in general and with the six specific life domains presented in Section 2, plus standard socio-demographic controls. Aside of gender, from the raw data we generate a set of dummy variables for being younger than 30; having a partner; having children; reporting very good or good health; having a college degree; family income below 16,000 Euros, between 16,000 Euros and 30,000 Euros, between 30,000 Euros and 56,000 Euros, above 56,000 Euros; meeting friends at least once a week; not taking part in any cultural, political, sport-related or religious association; being born in Northern Italy. Descriptive statistics for the full sample are reported in Table 1.

[TABLE 1 ABOUT HERE]

As a result of our sampling strategy, we end up selecting mainly students or young workers. Table 1 shows that 78 percent of the sample is younger than 30, and that only 9 percent of the sample reports to have a child. Close to 70 percent of subjects report being in good health, and 53 percent have completed a college degree, while figures on income categories show that most subjects come from middle class or well-off families. While the extrapolation of our results to the general population is not granted, internal validity of our causal statements is granted by randomization of subjects across the three treatment groups. To test for balancing in sample composition across treatments, we regress each of the covariates presented in the upper panel of Table 1 on a constant and dummies for belonging to T2 and T3, respectively. We report the constant and the coefficients for the two treatment group dummies in Table 2, together with their standard errors and significance level.

[TABLE 2 ABOUT HERE]

Overall, randomization worked well, as most differences are not statisti-

[7] To make sure that no changes in the underlying determinants of SWB occurred among the two interviews, we drop the second-phase interviews of four subjects in treatments T1 and T2 who reported to have experienced extra-ordinary life changes across the two phases, including negative - the loss of a close relative, job displacement, divorce - as well as positive - the birth of a child, a promotion, ... - events.

cally different from zero. However, we still detect some imbalancing across the three groups, probably due to small sample size: for instance, subjects in T3 are older and more likely to have children than subjects in T1, while group T2 is more imbalanced than group 1 in terms of sex ratios[8]. To make sure we get rid of any potential source of selection bias, we are going to control for all covariates in our regression. We also show that our regression results are unchanged whether we include or exclude covariates, confirming that the imbalancing we detect is not due selective treatment assignment, and thus enhancing the internal validity of our findings.
Table 3 presents features of the distribution of overall life satisfaction, our dependent variable, and sample size by treatment and phase.

[TABLE 3 ABOUT HERE]

Evidence from Table 3 already provides useful insights on the first two testable predictions, HP.1 and HP.2. We begin by focusing on results for phase 1. Comparison of outcomes of groups T1 and T2 suggests that providing a list of life domains that are relevant for satisfaction with life as a whole does not affect the distribution of overall satisfaction with life, neither in terms of mean levels, nor in terms of standard deviation within each group. On the other hand, comparison of the outcomes of the former groups with T3 reveals the first evidence of unpacking effect as well as increased awareness on the topic to be evaluated: asking subjects to rate satisfaction with specific life domains leads them to express more positive judgments, and shrinks evaluations towards this higher mean level. Graphical evidence in this sense is reported in Figure 2, where we plot the distribution of satisfaction with life across treatment groups in phase 1. The figure confirms that our result on the variance is unlikely due to a ceiling effect, as only a small fraction of subjects report evaluations of satisfaction with life using the highest available point on the evaluation scale.

[FIGURE 2 ABOUT HERE]

Finally, similar evidence of the unpacking effect is also present when we consider the longitudinal dimension of our experiment, and compare the distribution of satisfaction with life that subjects in T1 and T2 express in

[8]Similar results are obtained when we estimate a generalized propensity score through a Multinomial Logit regression for treatment status on the same set of covariates (see Imbens, 2000, and Lechner, 2001). The R^2 of such a regression is around 0.1, confirming that the distribution of covariates across groups is only mildly different.

the two phases. In this sense, it is worth noticing that around 40 percent of the initial T1 and T2 subjects drop out from the survey between the two phases. As a consequence, longitudinal findings might be biased due to panel attrition if only people reporting higher satisfaction with life remain in the sample. We test for endogenous attrition by comparing mean baseline characteristics of the full sample and of the sample of "stayers". Results are presented in Table 4 and do not reveal any evidence of endogenous attrition, as we find perfect balancing across the two groups both in terms of the observable covariates and of the evaluation of life satisfaction carried out at baseline.

[TABLE 4 ABOUT HERE]

4.2 Econometric analysis

We carry out formal econometric analyses in this section. We start by exploiting the variation in treatment assignment between treatments within the first phase of the experiment, and analyse the effects of the questionnaire manipulations on the mean and the variance of overall satisfaction with life. To estimate treatment effects on the mean of the dependent variable, we run simple linear regressions of overall life satisfaction on dummies for T2 and T3 and the set of covariates illustrated in the previous section, using heteroskedasticity-robust standard errors[9]. On the other hand, we exploit Recentered Influence Function (RIF) regressions, as introduced by Firpo, Fortin and Lemieux, 2009, to estimate treatment effects on the unconditional variance of satisfaction with life across the three treatment groups[10]. In both cases, identification is granted by random assignment to treatment,

[9]To assess the robustness of our results to the parametric specification imposed by the model, we also consider an alternative semi-parametric estimator. We implement the multi-valued treatment propensity score weighting estimator discussed in Imbens, 2000, and Lechner, 2001, where the propensity score is estimated through a Multinomial Logit model. We test that no covariate imbalancing is present after weighting each observation for the inverse of the probability of receiving the treatment actually received, and verify that when we consider overall life satisfaction as our dependent variable estimation results from this different specification - not shown - are quantitatively and qualitatively equivalent to our baseline model. Results are also robust to dropping observations that are extreme with respect to our propensity score metric. Finally, equivalent results not shown and available upon request are obtained when we treat overall life satisfaction as an ordinal measure and estimate marginal effects from Ordered Probit regressions.

[10]RIF regressions on the variance of satisfaction with life are also exploited by Clark, Fleche and Senik, 2012

as documented in Section 4.1. Inclusion of covariates enforces conditional independence in case of randomization failure, and helps to increase precision of our estimates. The coefficients associated with the treatment dummies are presented in Table 5, while full estimation outcomes are presented in Table A.1 in the Appendix.

[TABLE 5 ABOUT HERE]

Looking at Column 1, we see that presenting respondents with information on specific domains that are relevant for overall satisfaction with life before expressing a general judgment does not significantly affect evaluations relative to the benchmark treatment T1. On the other hand, asking respondents to elicit satisfaction with specific life domains before the general question exerts a significant and strongly positive unpacking effect on satisfaction with life, consistently with the conjectures in HP.1.

RESULT 1. Evaluating life domains increases overall life satisfaction.

We now turn our attention to HP.2 and we study how adding explicit references to the life domains affects the variance of the reported levels of life satisfaction. As shown in Column 3, we find that simply presenting subjects with a list containing the life domains does not influence the standard deviation of life satisfaction, while asking subjects to elicit their satisfaction with each specific domain exerts a strong negative effect on the variance of life satisfaction[11].

RESULT 2. Evaluating life domains reduces the variance of the distribution of life satisfaction.

Together, the previous findings provide supporting evidence in favor of both HP.1 and HP.2 conjectures. Indeed, by raising awareness on the domains to be evaluated, asking subjects to report their satisfaction with the six life domains leads them to take a less mild position on their satisfaction with life and to reduce uncertainty in the evaluations, which shrink toward a higher mean level[12].

[11] Columns 2 and 4 show that results are not dependent on the inclusion of covariates, that is reassuring for the validity of our identification strategy.

[12] Table A.1 in the appendix shows that most coefficients related with the covariates included in the equation have the expected signs (see Frey and Stutzer, 2002, and Dolan, Peasgood and White, 2008): satisfaction increases with income, and it is higher for the

Next, we exploit the variation between-phases and within-treatment by taking advantage of the fact that, in both T1 and T2, subjects state their life satisfaction twice, with the second evaluation being expressed after judging satisfaction with the six life domains. This longitudinal setup allows us to estimate the effects of life domains evaluations on life satisfaction using within-subject variation as well. Since no difference in life satisfaction at baseline was detected between T1 and T2, we pool observations from these two groups and include a dummy variable for belonging to T2 in all models[13]. Table 6 presents estimation outcomes.

[TABLE 6 ABOUT HERE]

Results on the mean and the variance of overall life satisfaction are consistent with our previous findings both qualitatively and quantitatively: when subjects are primed with their own judgments on specific life domains, the mean level of life satisfaction increases and the distribution of the measure becomes more concentrated around this higher value. Furthermore, results are robust to the exclusion of individual covariates, confirming the robustness of our findings.
As a placebo test, we also compared the distribution of the reported levels of satisfaction with life expressed in phase 2 by subjects in T1 and T2 with those expressed by subjects in T3 in phase 1. Finding no differences in the mean and the variance of the distribution of life satisfaction across treatment groups does not allow us to conclude that our results in the longitudinal analysis are not due to retesting effects, because we never observe an untreated group in both phases, yet it is reassuring to see that results in Table 7 confirm that no difference across groups exposed to the same treatment in different phases is detectable[14].

[TABLE 7 ABOUT HERE]

The final part of our empirical analysis focuses on the relationship between life satisfaction and subjects' evaluations about life domains. So far, our results suggest that asking subjects to evaluate specific life domains before expressing an overall judgment on satisfaction with life raises their aware-

youngest in the sample, for those with children, those in good health and those who have more frequent contacts with friends.

[13]We also checked for heterogeneous effects, but the interaction term was not significant.

[14]Furthermore, to the best of our knowledge, no evidence of positive changes in life satisfaction due to retesting is present in the literature.

ness about the general topic to be assessed and allows them to express more accurate evaluations. As a consequence, we expect to observe a higher correlation between life satisfaction and satisfaction with life domains when these are elicited before the general question. To test this hypothesis, we focus on subjects in the longitudinal sample, for whom we observe two general evaluations, one expressed without prior assessment of specific life domains, in phase 1, and one elicited after domains evaluation, in phase 2. We run two simple linear regressions of the two overall evaluations on the evaluations of the specific domains and controls for gender, age, and geographical origin[15]. Results are presented in Table 8, and suggest that evaluations carried out in phase 2, after domains elicitation, are more strongly correlated with satisfaction with the domains. Comparing Column 1 to Column 2 and Column 3 to Column 4 we see that this result is not due to the inclusion of covariates. Furthermore, the R^2 of regressions for phase 1 is equal to 0.26 and 0.17 with and without covariates, respectively, while it equals 0.59 for both phase 2 regressions. These results bring strong support to HP.3, as they confirm that raising awareness about life domains decreases the influence of mood state, guesses and measurement error in the general evaluations, increasing the coherence between self-reported satisfaction with domains and satisfaction with life as a whole[16].

RESULT 3. Evaluating life domains increases the correlation between these responses and the (subsequently) reported level of life satisfaction.

[TABLE 8 ABOUT HERE]

5 Conclusions

The aim of the paper was to assess how raising awareness of six specific life domains - income, family, job, friends, sentimental relationships and health - affects subjects‘ self-reported levels of life satisfaction. In order to investigate the relevance of this specific context effect, we administered a survey experiment based on three different questionnaire versions that can be ordered on the basis of the intensity of the awareness manipulation: one with no reference to the life domains, one including simply the list of the

[15] We drop other covariates as they represent objective measures of the specific domains evaluated.

[16] As a robustness check, we repeated this analysis by augmenting the sample where domain evaluations are elicited before asking the general question with observations from T3 at phase 1, and results are fully comparable with the ones presented in Table 8.

life domains and, finally, one in which subjects evaluate each domain before expressing their overall satisfaction with life.

We document a strong and robust unpacking effect, whereby evaluating the (subjective) conditions with the domains makes subjects more satisfied with their life. In addition, raising awareness of the domains substantially increases precision (as it reduces the dispersion of responses) and accuracy (by increasing the association between life satisfaction and life domain evaluations) of life satisfaction evaluations.

Overall, our results offer relevant insights to the flourishing empirical literature on life satisfaction. Our results suggest that framing and context effects play a substantial role in isolating what people should refer to when asked to evaluate their satisfaction with life, and stress the necessity to raise awareness of the determinants of life satisfaction to produce more precise and reliable subjective measures of well-being.

Our results also caution researchers about the potential problems of data comparability across different sources. While in some cases the overall evaluation of life satisfaction is anticipated by questions concerning the subjective conditions with specific life domains (see for instance the fifteenth wave of the British Household Panel Survey - BHPS, the 2004 edition of the German Socio-Economic Panel - SOEP, the second wave of the Household, Income and Labor Dynamics in Australia Survey - HILDA), in other cases life satisfaction is assessed with no reference to the life domains (to mention some examples, the sixth wave of the European Social Survey - ESS, the sixth wave of the World Value Survey - WVS). As suggested by the present study, manipulating the structure of the questionnaire makes life satisfaction assessments not entirely comparable across different surveys and waves, as it is likely to alter the distribution of the responses substantially.

References

Angelini, V., Cavapozzi, D., Corazzini, L., and Paccagnella, O. (2014). Do danes and italians rate life satisfaction in the same way? using vignettes to correct for individual-specific scale biases. *Oxford Bulletin of Economics and Statistics*.

Bateman, I., Munro, A., Rhodes, B., Starmer, C., and Sugden, R. (1997). Does part–whole bias exist? an experimental investigation. *The Economic Journal*, 107(441):322–332.

Bernasconi, M., Corazzini, L., Kube, S., and Maréchal, M. A. (2009). Two are better than one! individuals' contributions to unpacked public goods. *Economics Letters*, 104(1):31–33.

Bruni, L. and Porta, P. L. (2005). *Economics and Happiness: Framing the Analysis: Framing the Analysis*. Oxford University Press.

Clark, A., Etilé, F., Postel-Vinay, F., Senik, C., and Van der Straeten, K. (2005). Heterogeneity in reported well-being: Evidence from twelve european countries. *The Economic Journal*, 115(502):C118–C132.

Clark, A. E., Flèche, S., and Senik, C. (2012). The great happiness moderation. *IZA Discussion Paper*, 6761.

Conti, G. and Pudney, S. (2011). Survey design and the analysis of satisfaction. *Review of Economics and Statistics*, 93(3):1087–1093.

Diener, E., Napa-Scollon, C. K., Oishi, S., Dzokoto, V., and Suh, E. M. (2000). Positivity and the construction of life satisfaction judgments: Global happiness is not the sum of its parts. *Journal of Happiness Studies*, 1(2):159–176.

Dolan, P., Peasgood, T., and White, M. (2008). Do we really know what makes us happy? a review of the economic literature on the factors associated with subjective well-being. *Journal of Economic Psychology*, 29(1):94–122.

Easterlin, R. A. (2001). Income and happiness: Towards a unified theory. *The Economic Journal*, 111(473):465–484.

Ferrer-i Carbonell, A. and Frijters, P. (2004). How important is methodology for the estimates of the determinants of happiness? *The Economic Journal*, 114(497):641–659.

Firpo, S., Fortin, N. M., and Lemieux, T. (2009). Unconditional quantile regressions. *Econometrica*, 77(3):953–973.

Frey, B. S. and Stutzer, A. (2002a). The economics of happiness. *World Economics*, 3(1):25–41.

Frey, B. S. and Stutzer, A. (2002b). What can economists learn from happiness research? *Journal of Economic Literature*, 40(2):402–435.

Imbens, G. W. (2000). The role of the propensity score in estimating dose-response functions. *Biometrika*, 87(3):706–710.

Lechner, M. (2001). *Identification and estimation of causal effects of multiple treatments under the conditional independence assumption*. Springer.

McClendon, M. J. and O'Brien, D. J. (1988). Question-order effects on the determinants of subjective well-being. *Public Opinion Quarterly*, 52(3):351–364.

Schuman, H. and Presser, S. (1981). *Questions and answers: Experiments on question form, wording, and context in attitude surveys*. New York: Academic.

Schwartz, N. and Clore, G. L. (1983). Mood, misattribution, and judgments of well-being: Informative and directive functions of affective states. *Journal of Personality and Social Psychology*, 45(3):513–523.

Schwarz, N. (1999). Self-reports: how the questions shape the answers. *American Psychologist*, 54(2):93.

Schwarz, N. and Strack, F. (1991). Evaluating one's life: A judgment model of subjective well-being. *Subjective Well-being: An Interdisciplinary Perspective*, 21:27–47.

Schwarz, N. and Strack, F. (1999). Reports of subjective well-being: Judgmental processes and their methodological implications. *Well-being: The Foundations of Hedonic Psychology*, 178.

Schwarz, N., Strack, F., Kommer, D., and Wagner, D. (1987). Soccer, rooms, and the quality of your life: Mood effects on judgments of satisfaction with life in general and with specific domains. *European Journal of Social Psychology*, 17(1):69–79.

Schwarz, N., Strack, F., and Mai, H.-P. (1991). Assimilation and contrast effects in part-whole question sequences: A conversational logic analysis. *Public Opinion Quarterly*, 55(1):3–23.

Strack, F., Martin, L. L., and Schwarz, N. (1988). Priming and communication: Social determinants of information use in judgments of life satisfaction. *European Journal of Social Psychology*, 18(5):429–442.

Strack, F., Schwarz, N., and Gschneidinger, E. (1985). Happiness and reminiscing: The role of time perspective, affect, and mode of thinking. *Journal of Personality and Social Psychology*, 49(6):1460.

Tourangeau, R. and Rasinski, K. A. (1988). Cognitive processes underlying context effects in attitude measurement. *Psychological Bulletin*, 103(3):299.

Tourangeau, R., Rasinski, K. A., and Bradburn, N. (1991). Measuring happiness in surveys: A test of the subtraction hypothesis. *Public Opinion Quarterly*, 55(2):255–266.

Tversky, A. and Koehler, D. J. (1994). Support theory: a nonextensional representation of subjective probability. *Psychological Review*, 101(4):547.

Van Boven, L. and Epley, N. (2003). The unpacking effect in evaluative judgments: When the whole is less than the sum of its parts. *Journal of Experimental Social Psychology*, 39(3):263–269.

Figures and Tables

Figure 1: The Experimental Design

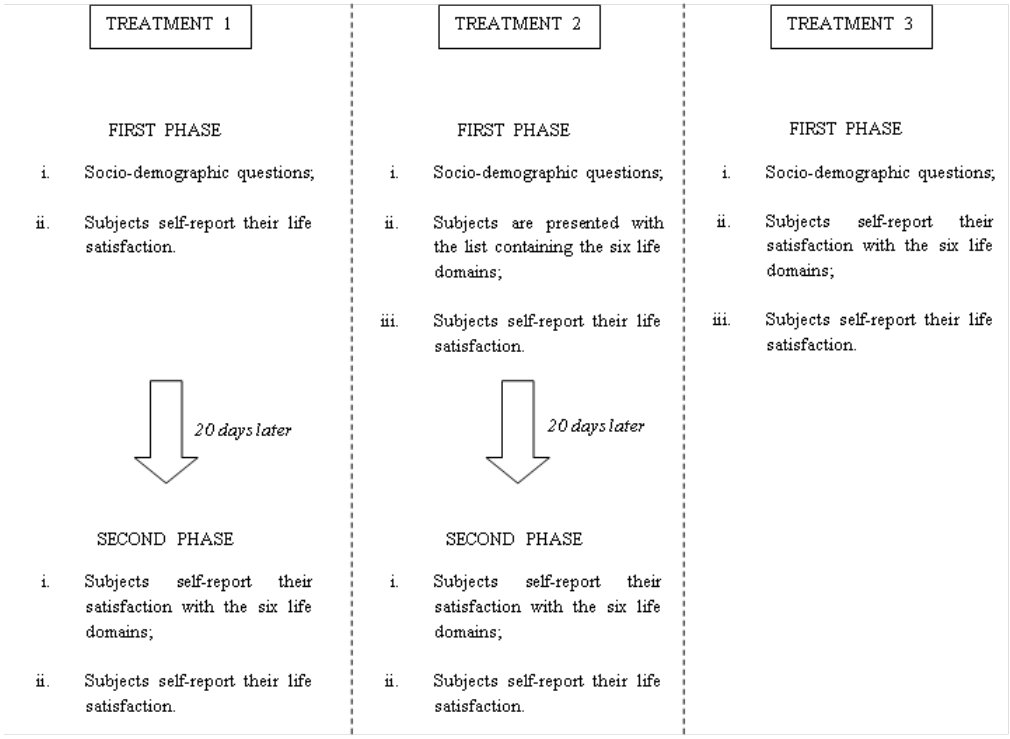

Figure 2: Distribution of Life Satisfaction in Phase 1

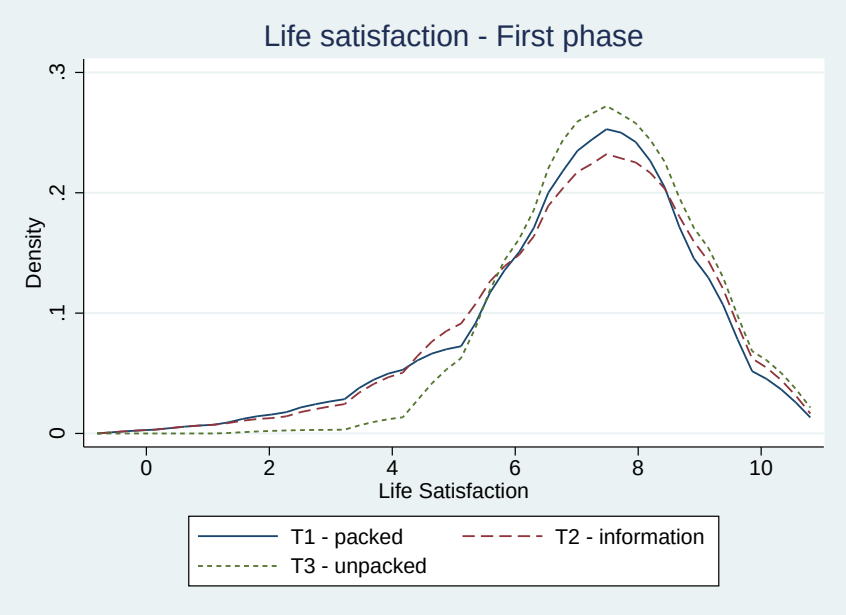

Table 1: Descriptive Statistics

	Mean	Standard Deviation	Observations
female	0.570	0.496	342
young	0.798	0.402	342
partner	0.342	0.475	342
children	0.099	0.300	342
goodhealth	0.708	0.456	342
highedu	0.526	0.500	342
income2	0.307	0.462	342
income3	0.266	0.443	342
income4	0.170	0.376	342
friendsoften	0.678	0.468	342
association	0.459	0.499	342
north	0.459	0.499	342
lifesatisfaction	7.371	1.470	469
lsreddito	6.236	2.108	267
lsfamiglia	7.562	1.894	267
lslavorostudio	6.577	1.957	267
lsamici	7.779	1.606	267
lsrelsentimentali	6.431	2.924	267
lssalute	7.790	1.639	267

Table 2: Balancing tests

	Mean T1	T2-T1	T3-T1
female	0.495	0.149**	0.076
		(0.069)	(0.065)
young	0.911	-0.020	-0.261***
		(0.042)	(0.049)
partner	0.386	-0.010	-0.100
		(0.069)	(0.062)
children	0.050	-0.020	0.136***
		(0.028)	(0.039)
goodhealth	0.723	-0.059	0.006
		(0.065)	(0.059)
highedu	0.396	0.050	0.283***
		(0.070)	(0.063)
income2	0.277	0.069	0.023
		(0.065)	(0.059)
income3	0.347	-0.129**	-0.104*
		(0.063)	(0.060)
income4	0.178	-0.079	0.036
		(0.049)	(0.052)
friendsoften	0.782	-0.079	-0.196***
		(0.062)	(0.059)
association	0.455	-0.010	0.016
		(0.070)	(0.065)
north	0.584	-0.069	-0.256***
		(0.070)	(0.063)
Observations	342		

Notes: we report mean values of the covariates for individuals in treatment group 1 in column 1, and differences in mean values between treatment group 2 (3) and treatment group 1 in column 2 (3). Robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1.

Table 3: Life satisfaction across treatments and phases

	Treatment 1	Treatment 2	Treatment 3
Phase 1	Mean: 7.020 Standard deviation: 1.726 Observations: 101	Mean: 7.079 Standard deviation: 1.747 Observations: 101	Mean: 7.521 Standard deviation: 1.249 Observations: 140
Phase 2	Mean: 7.655 Standard deviation: 1.001 Observations: 58	Mean: 7.768 Standard deviation: 1.178 Observations: 69	

Table 4: Attrition

	Mean in Full sample	Stayers - Full sample
female	0.569	-0.010
		(0.056)
young	0.901	0.020
		(0.032)
partner	0.381	-0.003
		(0.055)
children	0.040	-0.016
		(0.019)
goodhealth	0.693	0.023
		(0.052)
highedu	0.421	0.012
		(0.056)
income2	0.312	-0.005
		(0.052)
income3	0.282	0.033
		(0.052)
income4	0.139	-0.013
		(0.038)
friendsoften	0.743	0.045
		(0.048)
association	0.450	-0.017
		(0.056)
north	0.550	-0.006
		(0.057)
lifesatisfaction	7.050	0.155
		(0.196)
Observations	329	

Notes: the sample considered includes treatment groups 1 and 2. We report mean values of the covariates in the full sample in column 1, and differences in mean values between the full sample and the sample of those who do not drop out between phase 1 and phase 2 in column 2. Robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1.

Table 5: Unpacking life satisfaction

	(1) Mean	(2) Mean	(3) Variance	(4) Variance
Packed - with information	0.282	0.059	-0.313	0.050
	(0.221)	(0.244)	(0.657)	(0.654)
Unpacked	0.627***	0.502**	-1.923***	-1.373**
	(0.203)	(0.202)	(0.670)	(0.607)
Covariates	Yes	No	Yes	No
Observations	342	342	342	342
R-squared	0.234	0.022	0.104	0.022

Notes: the dependent variable is overall satisfaction with life. Column 1 and 2 report the mean regression coefficients associated with the treatment dummies. Columns 3 and 4 report the RIF regression coefficients for the variance of life satisfaction. Covariates included in columns 1 and 3 are shown in the upper panel of Table 1. Robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1.

Table 6: Longitudinal analysis

	(1) Mean	(2) Mean	(3) Variance	(4) Variance
Second phase	0.512***	0.512***	-1.786***	-1.786***
	(0.146)	(0.143)	(0.573)	(0.591)
Covariates	Yes	No	Yes	No
Observations	254	254	254	254
R-squared	0.210	0.034	0.135	0.035

Notes: the dependent variable is overall satisfaction with life. Columns 1 and 2 report the mean regression coefficient associated with the treatment dummy. Columns 3 and 4 report the RIF regression coefficient for the variance of life satisfaction. The sample considered includes only individuals observed in both phases. The covariates used in columns 1 and 3 are shown in the upper panel of Table 1. A dummy for treatment group 2 is also included. Panel-robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1.

Table 7: Not a re-testing effect?

	(1) Mean	(2) Mean	(3) Variance	(4) Variance
Packed - with information	0.215	0.113	0.265	0.404
	(0.201)	(0.193)	(0.369)	(0.365)
Unpacked	-0.036	-0.134	0.187	0.572*
	(0.197)	(0.168)	(0.363)	(0.320)
Covariates	Yes	No	Yes	No
Observations	267	267	267	267
R-squared	0.170	0.008	0.109	0.012

Notes: the dependent variable is overall satisfaction with life. Column 1 and 2 report the mean regression coefficients associated with the treatment dummies. Columns 3 and 4 report the RIF regression coefficients for the variance of life satisfaction. Covariates included in columns 1 and 3 are shown in the upper panel of Table 1. The sample considered includes only the treatment groups in which domains are elicited. Robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1.

Table 8: Overall life satisfaction and satisfaction with domains

	Phase 1	Phase 1	Phase 2	Phase 2
Satisfaction with income	0.026	0.050	0.103***	0.104***
	(0.081)	(0.104)	(0.039)	(0.038)
Satisfaction with family	0.131	0.140*	0.159***	0.167***
	(0.081)	(0.084)	(0.039)	(0.037)
Satisfaction with work or study	0.069	0.144	0.107**	0.110**
	(0.099)	(0.103)	(0.050)	(0.047)
Satisfaction with friends	0.137	0.136	0.149***	0.152***
	(0.103)	(0.111)	(0.053)	(0.051)
Satisfaction with partner	0.124**	0.075	0.048*	0.046*
	(0.056)	(0.060)	(0.027)	(0.026)
Satisfaction with health	0.093	0.074	0.165***	0.162***
	(0.085)	(0.088)	(0.054)	(0.053)
Covariates	Yes	No	Yes	No
Observations	127	127	127	127
R-squared	0.261	0.174	0.594	0.591

Notes: the dependent variable is overall satisfaction with life, and we report mean regression coefficient associated with satisfaction with specific domains. The sample considered includes only individuals who are observed for two phases. Columns 1 and 2 considers outcomes for phase 1, colums 3 and 4 for phase 2. Covariates included in columns 1 and 3 are age, geographical origin and gender. Robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1.

Appendix

Table A.1: Unpacking life satisfaction - with covariates

	(1) Mean	(2) Mean	(3) Variance	(4) Variance
Packed - with information	0.282	0.0594	-0.313	0.0504
	(0.221)	(0.244)	(0.657)	(0.654)
Unpacked	0.627***	0.502**	-1.923***	-1.373**
	(0.203)	(0.202)	(0.670)	(0.607)
female	-0.00609		0.569	
	(0.157)		(0.522)	
young	0.823***		-1.737**	
	(0.245)		(0.774)	
partner	0.165		0.458	
	(0.170)		(0.578)	
children	0.851**		-1.189	
	(0.343)		(1.071)	
goodhealth	0.960***		-1.646***	
	(0.189)		(0.552)	
highedu	0.486***		-0.596	
	(0.173)		(0.555)	
income2	0.372*		-1.588**	
	(0.209)		(0.663)	
income3	0.583**		-0.933	
	(0.235)		(0.696)	
income4	0.687***		-0.148	
	(0.254)		(0.795)	
friendsoften	0.630***		-1.164**	
	(0.185)		(0.570)	
association	0.00714		-0.0543	
	(0.152)		(0.506)	
north	0.00739		-0.611	
	(0.172)		(0.541)	
Constant	4.353***	7.020***	7.689***	3.000***
	(0.469)	(0.172)	(1.246)	(0.462)
Observations	342	342	342	342
R-squared	0.234	0.022	0.104	0.022

Notes: the dependent variable is overall satisfaction with life. Column 1 and 2 report the mean regression coefficients associated with the treatment dummies. Columns 3 and 4 report the RIF regression coefficients for the variance of life satisfaction. Covariates included in columns 1 and 3 are shown in the upper panel of Table 1. Robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1.

Questionnaire manipulations in the survey experiment

As follows, we report the questions used in the three treatments to elicit satisfaction with life and the six specific domains. The questions were originally written in Italian.

1. No reference to the life domains (T1, Ph. 1)

How satisfied are you with your life in general?

(Very dissatisfied)	1	2	3	4	5	6	7	8	9	10	(Very satisfied)

2. Reference to the life domains (T2, Ph. 1)

Research studies have shown that family, friend and sentimental relationships, education or job situation, economic and health conditions represent important determinants of life satisfaction.

How satisfied are you with your life in general?

(Very dissatisfied)	1	2	3	4	5	6	7	8	9	10	(Very satisfied)

3. Questions of the life domains (T1 and T2, Ph. 2; T3, Ph. 1)

[Subjects were presented with two consecutive and separate screen shots. In the first screen shot, they reported their satisfaction with the six life domains. In the second screen shot, they reported their overall satisfaction with life]

[First screen shot] Research studies have shown that family, friend and sentimental relationships, education or job situation, economic and health conditions represent important determinants of life satisfaction. For each of the following domains, how do you agree with the correspondent statement?

I am satisfied with my economic conditions and my annual income.

(Strongly disagree)	1	2	3	4	5	6	7	8	9	10	(Strongly agree)

I am satisfied with my family relationship.

(Strongly disagree)	1	2	3	4	5	6	7	8	9	10	(Strongly agree)

I am satisfied with my job (or my student career - if still student).

(Strongly disagree)	1	2	3	4	5	6	7	8	9	10	(Strongly agree)

I am satisfied with my friend relationships.

(Strongly disagree) | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | (Strongly agree)

I am satisfied with my sentimental relationships.

(Strongly disagree) | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | (Strongly agree)

I am satisfied with my health conditions.

(Strongly disagree) | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | (Strongly agree)

[Second screen shot] How satisfied are you with your life in general?

(Strongly disagree) | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | (Strongly agree)

List of research reports

12001-HRM&OB: Veltrop, D.B., C.L.M. Hermes, T.J.B.M. Postma and J. de Haan, A Tale of Two Factions: Exploring the Relationship between Factional Faultlines and Conflict Management in Pension Fund Boards

12002-EEF: Angelini, V. and J.O. Mierau, Social and Economic Aspects of Childhood Health: Evidence from Western-Europe

12003-Other: Valkenhoef, G.H.M. van, T. Tervonen, E.O. de Brock and H. Hillege, Clinical trials information in drug development and regulation: existing systems and standards

12004-EEF: Toolsema, L.A. and M.A. Allers, Welfare financing: Grant allocation and efficiency

12005-EEF: Boonman, T.M., J.P.A.M. Jacobs and G.H. Kuper, The Global Financial Crisis and currency crises in Latin America

12006-EEF: Kuper, G.H. and E. Sterken, Participation and Performance at the London 2012 Olympics

12007-Other: Zhao, J., G.H.M. van Valkenhoef, E.O. de Brock and H. Hillege, ADDIS: an automated way to do network meta-analysis

12008-GEM: Hoorn, A.A.J. van, Individualism and the cultural roots of management practices

12009-EEF: Dungey, M., J.P.A.M. Jacobs, J. Tian and S. van Norden, On trend-cycle decomposition and data revision

12010-EEF: Jong-A-Pin, R., J-E. Sturm and J. de Haan, Using real-time data to test for political budget cycles

12011-EEF: Samarina, A., Monetary targeting and financial system characteristics: An empirical analysis

12012-EEF: Alessie, R., V. Angelini and P. van Santen, Pension wealth and household savings in Europe: Evidence from SHARELIFE

13001-EEF: Kuper, G.H. and M. Mulder, Cross-border infrastructure constraints, regulatory measures and economic integration of the Dutch – German gas market

13002-EEF: Klein Goldewijk, G.M. and J.P.A.M. Jacobs, The relation between stature and long bone length in the Roman Empire

13003-EEF: Mulder, M. and L. Schoonbeek, Decomposing changes in competition in the Dutch electricity market through the Residual Supply Index

13004-EEF: Kuper, G.H. and M. Mulder, Cross-border constraints, institutional changes and integration of the Dutch – German gas market

13005-EEF: Wiese, R., Do political or economic factors drive healthcare financing privatisations? Empirical evidence from OECD countries

13006-EEF: Elhorst, J.P., P. Heijnen, A. Samarina and J.P.A.M. Jacobs, State transfers at different moments in time: A spatial probit approach

13007-EEF: Mierau, J.O., The activity and lethality of militant groups: Ideology, capacity, and environment

13008-EEF: Dijkstra, P.T., M.A. Haan and M. Mulder, The effect of industry structure and yardstick design on strategic behavior with yardstick competition: an experimental study

13009-GEM: Hoorn, A.A.J. van, Values of financial services professionals and the global financial crisis as a crisis of ethics

13010-EEF: Boonman, T.M., Sovereign defaults, business cycles and economic growth in Latin America, 1870-2012

13011-EEF: He, X., J.P.A.M Jacobs, G.H. Kuper and J.E. Ligthart, On the impact of the global financial crisis on the euro area

13012-GEM: Hoorn, A.A.J. van, Generational shifts in managerial values and the coming of a global business culture

13013-EEF: Samarina, A. and J.E. Sturm, Factors leading to inflation targeting – The impact of adoption

13014-EEF: Allers, M.A. and E. Merkus, Soft budget constraint but no moral hazard? The Dutch local government bailout puzzle

13015-GEM: Hoorn, A.A.J. van, Trust and management: Explaining cross-national differences in work autonomy

13016-EEF: Boonman, T.M., J.P.A.M. Jacobs and G.H. Kuper, Sovereign debt crises in Latin America: A market pressure approach

13017-GEM: Oosterhaven, J., M.C. Bouwmeester and M. Nozaki, The impact of production and infrastructure shocks: A non-linear input-output programming approach, tested on an hypothetical economy

13018-EEF: Cavapozzi, D., W. Han and R. Miniaci, Alternative weighting structures for multidimensional poverty assessment

14001-OPERA: Germs, R. and N.D. van Foreest, Optimal control of production-inventory systems with constant and compound poisson demand

14002-EEF: Bao, T. and J. Duffy, Adaptive vs. eductive learning: Theory and evidence

14003-OPERA: Syntetos, A.A. and R.H. Teunter, On the calculation of safety stocks

14004-EEF: Bouwmeester, M.C., J. Oosterhaven and J.M. Rueda-Cantuche, Measuring the EU value added embodied in EU foreign exports by consolidating 27 national supply and use tables for 2000-2007

14005-OPERA: Prak, D.R.J., R.H. Teunter and J. Riezebos, Periodic review and continuous ordering

14006-EEF: Reijnders, L.S.M., The college gender gap reversal: Insights from a life-cycle perspective

14007-EEF: Reijnders, L.S.M., Child care subsidies with endogenous education and fertility

14008-EEF: Otter, P.W., J.P.A.M. Jacobs and A.H.J. den Reijer, A criterion for the number of factors in a data-rich environment

14009-EEF: Mierau, J.O. and E. Suari Andreu, Fiscal rules and government size in the European Union

14010-EEF: Dijkstra, P.T., M.A. Haan and M. Mulder, Industry structure and collusion with uniform yardstick competition: theory and experiments

14011-EEF: Huizingh, E. and M. Mulder, Effectiveness of regulatory interventions on firm behavior: a randomized field experiment with e-commerce firms

14012-GEM: Bressand, A., Proving the old spell wrong: New African hydrocarbon producers and the 'resource curse'

14013-EEF: Dijkstra P.T., Price leadership and unequal market sharing: Collusion in experimental markets

14014-EEF: Angelini, V., M. Bertoni, and L. Corazzini, Unpacking the determinants of life satisfaction: A survey experiment

www.rug.nl/feb