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**TIME, RELATIONS AND BEHAVIORS: MEASURING THE
TRANSFORMATIVE POWER OF LOVE-BASED
COMMUNITY LIFE**

SIMONA BERETTA and MARIO A. MAGGIONI

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**TIME, RELATIONS AND BEHAVIORS:
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LOVE-BASED COMMUNITY LIFE***

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ABSTRACT

This paper is about measuring if and how vulnerable persons' choices and attitudes change when they undergo a significant modification in their lives, as they begin experiencing care and support within durable relationships in love-based communities. Although there is anecdotal evidence that love-based experiences produce a restorative and rehabilitative impact on vulnerable people's lives, we still lack adequate empirical frameworks for measuring the transformative power of such experiences on individual choices and attitudes.

This paper proposes an innovative methodology for measuring personal transformation. We use a mix of behavioral economics experiments, textual analysis, and validated psychological tests to perform a longitudinal analysis of individuals in love-based communities. Changes in behavioral parameters and qualitative answers, observed over a significant period of love-based "treatment," provide empirical evidence of the transformative impact on deep behavioral traits and attitudes (altruism, gratitude, sincerity, trust).

This methodology, which significantly innovates on existing behavioral experiments and on conventional longitudinal studies and field experiments, has been applied to three ongoing case studies of love-based treatment: 1) formerly addicted people living in Italian rehab communities; 2) Californian convicts attending Guiding Rage into Power (GRIP) programs; 3) vulnerable schoolchildren experiencing Distance Support in Goma, Democratic Republic of the Congo. This paper is meant to present our methodology to researchers interested in human and social development, hoping to receive from them comments, suggestions, and possibly interest in a collaboration on other case studies.

RESUMEN

Las teorías de la legitimidad democrática sostienen que la gente que cree que el gobierno se maneja bien y que representa sus intereses es probable que defienda el statu quo democrático. Sin embargo, la teoría sobre las relaciones entre principales y agentes predice que es probable que estos mismos grupos acepten que el ejecutivo adopte medidas que restrinjan la libertad de expresión o a los grupos de oposición a través formas delegativas de democracia. Los ciudadanos que se sienten representados por un poder ejecutivo afín y competente pueden estar dispuestos a delegar en él la autoridad para restringir a la oposición, aún a expensas de los derechos civiles. Existen datos de encuestas en 18 países de América Latina entre 2006 y 2012 que son consistentes con la hipótesis de principal y agente: es más probable que aquellos que votaron por el partido de gobierno en la elección previa o que perciben que la situación económica es sólida apoyen las restricciones de los derechos civiles de los opositores al régimen. Quienes resultan ganadores en contiendas políticas son particularmente proclives a exhibir bajos niveles de tolerancia en sistemas de partidos polarizados. De este modo, para prosperar, la democracia debe no solamente satisfacer a los derrotados en los procesos políticos y sociales sino encontrar formas de contener a los ganadores.

INTRODUCTION

This paper is about measuring if and how vulnerable persons' choices and attitudes change when they undergo a significant modification in their lives, due to experiencing care and support within durable relationships in a love-based community.

The anthropological premise for our interest in measuring the transformative power of love is that people basically learn to love, over time, by being loved and taken care of; they learn to trust by being trusted; to aspire to beauty by being exposed to beauty; and so on. This premise seems to us simple, though not simplistic, and potentially general enough to be relevant for different kinds of community experiences in very diverse locations, such as Italy, California, and the Democratic Republic of the Congo (DRC).

Time and relations matter in everyday choices: there is much more to economic decisions than the standard economics algorithms that allow *homo economicus*—an individual with exogenous expectations and preferences—to perform maximizing and optimizing procedures. The concern about realism in economic analysis is anything but new. In early twentieth-century France, the book *Psychologie économique* (Tarde 1902) challenged the conventional concept of *homo economicus*: by neglecting the role played by “passions” and “relations” in shaping human decisions and actions, Tarde argues, this archetypal idea becomes too abstract to capture actual human agency. Nonetheless, the majority of contemporary approaches to economic decisions and actions remains largely dominated by analysis of rational actors with stable, autonomous preferences that predictably respond to material incentives according to algorithms of procedural rationality, summarized by rational choice axioms.

Behavioral economics approaches and field experiments, building on psychological research and empirical observation of actual individual choices in either lab experiments or real-world situations, model human choices as deriving from “fast” and “slow” thinking (Tversky and Kahneman 1974), with fast thinking implying “automatic decisions with little or no effort and no sense of voluntary control,” and slow thinking entailing “effortful mental activities ... including complex computations” (Kahneman 2011, 20–21).

However, if these approaches are conceived within the mindset of economic orthodoxy, they irremediably drift toward the possibility of “nudging” people (by priming and/or framing) into making choices that are considered to be superior by policymakers, on the basis of a predetermined definition of rationality, as in the “libertarian paternalism” or “asymmetric

paternalism” approaches.¹ The 2015 World Development Report (World Bank 2015) titled *Mind, Society, and Behavior* offers a wealth of examples of development-oriented interventions built on such perspectives derived from behavioral economics insights.

A particularly interesting related line of investigation, highlighting the importance of social influences on individual behavior, is “identity” economics (Akerlof and Kranton 2000, 2010). In this view, individual preferences and choices depend on one’s identity, that is “a person’s sense of self” (Akerlof and Kranton 2000, 715): who one is and with whom one interacts. In other words, preferences and actions depend on the social context and the norms that characterize it. One’s identity is associated with different social categories (age group, gender, race, ethnicity, social class); thus, how people in these categories are socially expected to behave influences individual choices. Social norms related to social categories act both as a source of motivations and as powerful non-monetary drivers of individual behavior. As the authors argue, “Identity economics restores human passions and social institutions into economics” (Akerlof and Kranton 2010, 8).

Another recent strand of literature on behavioral economics explores various channels through which social groups shape individual preferences, influence individual choices, and feed back into social group dynamics (JEBO 2016). Here, economic behavior is portrayed as a “reflexive interplay between economics and social forces” (Snower 2016, 1), where identities, norms, and narratives influence individual beliefs and, consequently, choices. Narratives, in particular, represent the crucial link connecting individual decisions to social influences (Akerlof and Snower 2016). In the same journal issue Hoff and Stiglitz (2016) propose to move beyond quasi-rational individuals, as conceived by the traditional behavioral economics approach, to highlight the behavior of actors whose preferences and perceptions are shaped within social contexts and reflect cultural mental models. These “enculturated” actors, as defined by Hoff and Stiglitz, are characterized by endogenous preferences, perception, and cognition, shaped by social constructs. Thus, considering enculturated actors opens interesting opportunities for economists to interact with sociologists and cultural anthropologists, as well as psychologists. In

¹ “A general conclusion from behavioral economics is that people often do not understand and interpret situations as economists normally assume. ... An implication of such effects is that re-framing a situation in subtle ways that would be irrelevant from the perspective of the standard economic model can have large effects on behavior.’ The power of such framing effects... might help irrational people make better decisions, while having absolutely no effect on fully rational people.” (Camerer et al. 2003, 1230).

Hoff and Stiglitz's view, the social experiences of an individual affect one's rational choices, including what kind of "self" one can become; thus, appropriate policies at the social level may change actors' choices and shift societies into new, possibly more desirable social equilibria. For example, reserving leadership positions for women in India reduced gaps in aspirations between boys and girls (Beaman et al. 2012), contributing to overcoming social rigidities. Our approach is connected to these lines of research, as it represents a tentative exploration of how changes in social experiences may produce transformative effects on individuals' observable choices and (non-directly observable) attitudes.

In addition to affinities with recent theoretical approaches that highlight how social influences contribute to shaping individual preferences and values, our approach also bears similarities to other recent lines of empirical economic enquiry that underline the importance of non-material dimensions in economic decisions and outcomes, with special reference to development situations. This is not surprising, as our research is about if and how love-based community life can be conducive to personal human development.

Among the non-material drivers of behavior that appear to exhibit significant correlation with development outcomes, we find aspirations (Ray 2006; Genicot and Ray 2014), hope (Duflo 2012; Glewwe, Ross, and Wydick 2014; Lybbert and Wydick 2016), and self-control (Bernheim, Ray, and Yeltekin 2015), as they all appear to play a significant role in breaking cycles of poverty. In particular, Lybbert and Wydick (2016) explore the determinants and impact of aspirational hopes in development environments in a study of the effects of a "hope" intervention in Oaxaca by a microfinance lending program, disentangling the different components of aspirational hopes—namely: goals, actual and perceived agency (or self-efficacy), and pathways (removal of actual or perceived constraints). Conversely, lack of hope can contribute to being trapped in poverty and deprivation; de Quidt and Haushofer (2016), for example, explore the economic causes and consequences of depressive disorder, which may itself follow from pessimistic beliefs about returns to one's effort. In our case, the non-material dimension we are mostly interested in is the very basic feeling of being loved, which is associated with being accepted, cared for, and engaged as an active participant within a stable community.

While exhibiting similarities with some recent strands of economic, social, and psychosocial research, our research methodology bears some distinctive, innovative features.

First of all, when we consider the impact of social influence on individual behavior, we are not mainly concerned with assessing the impact of macro social constructs and contexts (such as race, caste, gender, and other mental models acquired in society that influence individual behavior). Rather, we focus on micro social (interpersonal) relations as experienced by vulnerable, marginalized individuals within love-based caring communities. These personalized, stable relations may (and often do) prove transformative of vulnerable people's perceptions, aspirations, motivations, and hopes; individuals may revalue their sense of self, recover self-control, and sustainably change their attitudes and behavior.

We are convinced that exploring micro interpersonal relations, and how they influence self-awareness and self-efficacy, may prove useful beyond assessing formal restorative and rehabilitation initiatives. More broadly, exploring the non-material dimensions that underlie and drive interpersonal relations—and love in particular—allows a better understanding of how an individual agent, conceived as *homo agens*² (Arendt 1958) or an “acting person” (Wojtyła 1979), may contribute to bringing about change and innovation in society at large, starting from micro relations. Understanding real-world transformations—rehabilitation and human flourishing at the micro, personal level; innovation and development at the societal level—requires a better understanding of *homo agens*'s actions and their non-material drivers. *Homo agens* inevitably has to work his/her path through ignorance, deep uncertainty, and social interdependence (which are matters of fact in daily life, however difficult to address with procedural rationality). Thus, *homo agens*'s actions can be nondeterministic, often unpredictable; they are driven by non-material dimensions such as sentiments, perceptions, aspirations and hopes; they are embedded in personalized and broadly social relationships and take place within institutions—themselves shaped, sustained, and transformed over time by human actions.

Passions and relations, as Tarde would say, are a good summary of why our research group at the Cognitive Science and Communication Research Center (CSCC) developed this research project, building an original methodology for measuring if and how experiencing meaningful relations of loving care and support within stable communities actually changes individual choices and attitudes. We built on the common elemental experience that we need love in order to develop as human persons, as confirmed by scientific evidence over many

² See Martini (2003) for an insightful analysis of Hannah Arendt's distinction between *homo faber* and *homo agens*.

decades (Spitz 1945, 1946). Reflecting on one's own personal experience, one can usually identify times and situations in which experiencing meaningful relations³ challenged or transformed one's horizon of self-awareness and thus behavior. Sometimes this may have occurred as a radical change due to a sudden realization; more often as the beginning of an open-ended process.

The behavioral approach offers an experimental framework for capturing human decisions⁴ that has both strengths and weaknesses. On the attractive side, the behavioral approach seeks realism, as opposed to abstraction; observations, as opposed to assumptions; experiments, as opposed to modeling. The empirical results highlight some limitations of traditional mainstream models, based on narrow self-interest, by showing that social institutions and preferences (altruism, willingness to reciprocate, trust, aversion to inequality, etc.) matter in actual decision-making.⁵ On the problematic side, experimental behavioral studies are not immune from dubious technical procedures,⁶ epistemological problems,⁷ and ethical challenges, especially with reference to development analyses and practices.⁸

³ The expression 'meaningful relations' is used here as shorthand (maybe too short) for the distinction between material, extrinsic dimensions of behavior and symbolic, intrinsic dimensions of human agency related to love, truth, justice, and beauty; it is also shorthand for the distinction between interpersonal relations and "transcendent" symbolic relations. While discussing these distinctions is obviously important, the focus here is on measuring changes in human choices as synthetic indicators of changes in traits and attitudes.

⁴ "Unlike standard economics, behavioral economics does not assume that people are rational. Instead, behavioral economists start by figuring out how people actually behave, often in a controlled lab environment in which we can understand behavior better, and use this as a starting point for building our understanding of human nature" (Ariely 2012).

⁵ The game-theoretical and the behavioral economics literatures tend to provide very different explanations of the nature and dynamics of interpersonal cooperation and other pro-social behaviors, ranging from rational self-interest (Binmore 2006), to "warm glow" (Andreoni 1990), to evidence of other-regarding preferences in human beings (widely studied by Fehr, e.g., Fehr, Bernhard, and Rockenbach 2008). However, the game-theoretical and the behavioral perspectives converge on underlining the importance of interactions and institutions in developing pro-social attitudes.

⁶ For example, when observing the behavior of real people, researchers may find that they do not satisfy basic definitions of rationality, such as consistency (or non-contradiction). The standard research procedure consists in eliminating inconsistent subjects from the sample (Sutter et al. 2013), showing little interest in exploring reasonable choices beyond calculating rationality.

⁷ Recent presentations of behavioral economics tend to re-accommodate it into a modified version of *homo economicus*, allowing for people being more or less proficient in rational decisions. "Behavioral economists embrace the core principles of modern economics—*optimization* and *equilibrium*—and wish to develop and refine those ideas to make them more *empirically* accurate. Behavioral economists study how people *try* to pick the best feasible option, including the cases in which people, despite their best efforts, make mistakes.... If you want to boil behavioral economics down for a classroom summary you

Our empirical methodology builds on the hypothesis that the tangible experience of receiving love and care can transform both the material and non-material dimensions of one's life, when persons who previously experienced marginalization, rejection, and even cruelty are allowed to experience personalized, stable relations of care: besides improving their living conditions, these durable relations can transform their contingent choices and behavioral attitudes. Moreover, the relational dynamism that ensues may prove transformative for caregivers as well and may even generate unplanned new experiences of love and care.

Powerful narratives of transformative experiences are widely used in the humanities and in some social sciences; narratives have a power of their own to affect behavior (Collier 2016). Economists may not only learn about human development and socioeconomic innovation from narrative evidence of the transformative power of love-based community life but also contribute to providing persuasive evidence of how this transformative power is related to non-material drivers of human actions.

Along this line, we focused on devising an empirical strategy to observe comparable personal stories of individuals in distressful situations—in our empirical studies, we consider vulnerable children in low income, high-conflict areas; addicted people; inmates convicted of violent crimes—who experience a positive and sustained change in their relational environments. This change that can be seen as a “relational shock”: from distress, marginalization, and violence to the possibility of stable accompaniment within a community where these individuals can experience meaningful relations. From available narratives,⁹ we know that in many cases these relations lead to healing, rehabilitation, inclusion, and even social creativity. In our research projects, we monitor all comparable personal stories (not success stories only) in order to gather statistically significant evidence on the transformative impact of community-based care relations

might say that most people are located somewhere between Mr. Spock and Mr. Simpson (aka Homer)” Laibson and List (2015), 389.

⁸ Behavioral economics is now fully connected to development studies and development practices, as thoroughly documented in the 2015 World Development Report (World Bank 2015). However useful the insights that the behavioral approach can yield, though, there are some ethical risks related to their implementation, if behavioral insights are mechanistically applied in a development setting, in analogy to nudging techniques in marketing (for instance, nudging by inflating information about expected benefits of an individual choice that produces desirable social effects, with a view to cheating people into choosing accordingly).

⁹ The Kellogg Institute's multidisciplinary research initiative “From Aid to Accompaniment” also represents a rich source of narratives of exemplary cases where the quality of durable relations is key for development effectiveness and outreach.

by observing longitudinal change in individuals' contingent choices, behavioral traits, and attitudes.

Communities capable of producing transformative outcomes come in a variety of sizes, scopes, locations, and specific motivations; we use the umbrella expression “love-based community” to designate situations where vulnerable peripheral people (substance addicts, prisoners, vulnerable children) receive material care and accompaniment, embedded in stable, personalized relationships with caregivers, staff, and community leaders. Moreover, in love-based communities actors tend to describe their methods and activities by using words (such as love, beauty, justice, dignity, freedom, recognition) that summarize non-material human needs and aspirations. In acting and by acting, individuals implicitly convey the reasons why they act; when they act out of love and respect, when beauty is manifest in what they do, when they provide reliable answers to vulnerable people's needs, their non-material motivations also become experiential evidences for community members. Love may seem an elusive word,¹⁰ but it is probably more difficult to define in theory than to recognize within elemental experience. Material relations of care convey symbolic meanings of love; and this entire experience (external and internal to the person; material and symbolic) can open new horizons for vulnerable people's agency. Understanding the role of love-based relations in transforming behavior and attitudes remains a daunting task; however, this role is potent, hence it deserves our attention.

THE RESEARCH QUESTION

Our research questions can be summarized as follows: can love-based relations transform human behavior and attitudes? In order to address this question about the transformative power of a treatment consisting in love-based community life, we needed to be confident about characterizing a community treatment as “love-based.” There are no obvious metrics for measuring love: professing love is itself a contingent human action “here and now,” possibly ambivalent and fragile. We proceeded by interviewing communities' founders, leaders, and caregivers on how their community was practically organized. We observed whether they spontaneously mentioned love (reciprocal or unconditional), forgiveness, dignity, altruism and

¹⁰ One way to consider love within economic analysis is to take it to be synonymous with loyalty, as in Frijters and Foster (2013). This volume discusses how love and loyalty (to persons and groups) shape behavior, also through the power implicit in social groups.

generosity while describing practical daily life in the community, its meaning for their personal experience, and their motivations for continuing to work in that community.¹¹ As human experience also includes failure to live up to one's own principles, mentioning love and forgiveness cannot be taken to mean that every day in the community is idyllic and that everything runs smoothly. (Actually, we have often observed communities facing unpredictable, stressful events—as families do, but more intensely.) However, durable love-based communities must develop in themselves the relational “antibodies” for keeping on a loving track, even when distressed: either they develop these antibodies, or they dry up or implode over time. Thus, in addition to statements by community leaders, staff, and people in rehab mentioning love, forgiveness, and dignity as keywords in their narratives, we use duration over time as a reasonable indicator that a community is love-based. That is, we consider both the longevity of communities and their ability over time to extend their outreach (creativity). Longevity and creativity may be taken as observable characteristics of the fact that actual persons (community leaders, staff and volunteers, community members) remain attracted to that way of life. Somehow, they must concretely experience the love they speak about.

Anecdotal evidence shows that vulnerable people experience the transformative power of love-based communities (re-integration in society, decent work, good relationships, even social creativity). However, these are only the success stories and may understate the extent of failures and difficulties. This prompted us to explore the universe of similarly treated people, in order to longitudinally measure change in behavioral parameters, traits and attitudes and to empirically study whether people undergoing treatment exhibit statistically significant transformative experiences.

RESEARCH METHODOLOGY

Although we are convinced that there is much more to human actions than observable economic choices and behavior, we decided to use behavioral economics situations and games (complemented by validated psychological tests and textual analysis) to assess the transformative impact of community-based care and accompaniment, by means of a longitudinal analysis of

¹¹ See the Appendix for a summary of the textual analysis results.

how individual answers and choices change, over a significant period of time spent within a supportive community.

Behavioral choices, especially when observed in experimental settings, provide but a pale representation of real-life decisions and actions.¹² Each behavioral parameter can be interpreted to signal a variety of traits and attitudes and tells us very little about inner motivations. Thus, we felt from the very beginning the need to gather additional empirical evidence on personal meanings and motivations of actual behavioral choices, by asking agents to explain why they made their choices, in order to complement econometric analysis of behavioral parameters with textual analysis of personal narratives. As some personal traits and behaviors of interest are also studied from a psychological and social perspective, we decided to include in our interdisciplinary longitudinal analysis a number of psychological tests, identified by consulting with researchers in social psychology and with founders/leaders of love-based rehab communities.

After pilot testing and much learning by doing, we developed and modified (culturally adapted) versions of our basic methodology and applied them to a number of situation in which vulnerable, marginalized people experience love-based transformative treatments. The three ongoing interdisciplinary research projects described in subsequent paragraphs measure the transformative impact of a love-based community for: 1) formerly addicted people living in Italian rehab communities; 2) convicts attending Guiding Rage into Power (GRIP) programs in Mule Creek and Avenal, California state prisons; 3) vulnerable schoolchildren experiencing Distance Support in Goma (DRC).¹³

Despite obvious differences in the geographical locations, language, culture, and age of the agents we study and in the specific vulnerability/deprivation from which they suffer, all the projects have in common the following three basic features:

a *longitudinal* assessment of personal behavioral change
assessed through a *multi-disciplinary, multi-instrument* approach
for people experiencing a *community-based loving treatment*.

¹² “Drawing from the *Oxford English Dictionary*, Glenn Harrison and I (2004) adopted the term ‘artefactual’ to denote such studies—meaning that they are an empirical approach created by the experimenter that is artificial or synthetic in certain dimensions” List (2011, 5).

¹³ More detailed information on the specific design of these three projects based at the CSCC is available to interested readers at <http://centridiricerca.unicatt.it/csc-home?rdeLocaleAttr=en>.

Each of the community-based treatments under study has been identified on the basis of two elements: first, clear anecdotal evidence of significant personal transformative experiences (rehabilitation, re-integration in society, social creativity) related to experiencing community life; and second, the treatment offered in that community being characterized as love-based (as described above).

Dealing with these particular populations, quite different from those usually involved in behavioral economics experiments, raises certain challenges.¹⁴ First, not only did we have to choose which games and situation to consider but also how to meaningfully present them to individuals with possibly low literacy and numeracy. Second, we had to find suitable alternatives to money for expressing endowments and rewards in behavioral situations and games, as monetary circulation is not allowed either in rehab communities or in prisons and is not appropriate for schoolchildren. For each case, we consulted with community leaders to identify an appropriate in-kind reward. Third, we had to balance the structure of the survey so as to include all three components (behavioral, textual, psychological), at the same time as keeping the survey reasonably short, adequate to interviewees' age and education, non-intrusive and as free as possible from priming effects, respectful of the interviewees' privacy,¹⁵ and—last but not least—not too tedious. Fourth, we had to deal with the very complex issued of finding, where possible, suitable control groups.

ASSESSING LONGITUDINAL BEHAVIORAL CHANGE

Collecting behavioral economics evidence in longitudinal studies in order to assess the transformative impact of community-based support and care (treatment) represents a significant

¹⁴ Our efforts to meet these challenges were guided by John A. List's crisp remarks (List 2011, 4): "However, results in laboratory economics are inevitably subject to questions over the extent to which they generalize to non-laboratory settings. One concern is that such experiments are often done with college students as subjects. During my time in 2002–2003 at the Council of Economic Advisers, as I was urging my colleagues to take account of certain laboratory experimental results in our revisions of the Federal Benefit/Cost Guidelines, an official from the White House responded with some phrases that have been etched in my mind ever since: 'even though these results appear prevalent, they are suspiciously drawn...by methods similar to scientific numerology...because of *students...who are not real people*'" (our italics).

¹⁵ All data are collected so as to guarantee the absolute anonymity of each participant; questionnaires are gathered, treated, and stored according to current Italian law and regulations on privacy (D.L. 196/2003). Data are used only in an aggregate form and only for statistical purposes. Both the Fetzer Institute's Advisory Council and the Ethical Committee of Università Cattolica del Sacro Cuore, Milan, approved the guidelines of the ongoing research projects.

innovation on existing research practices. To the best of our knowledge, this is a totally original approach in behavioral economics experiments.

The (costly and challenging) decision to adopt a longitudinal approach—spanning over a number of months/years that depends on the specific love-based treatment—was motivated by our aim to preserve the integrity of individual experience in its transformation. Conventional procedures, comparing behavioral parameters across subsets of the population under investigation (for treated versus control groups; or for different national, cultural, or religious groups), clearly provide interesting results. However, such a comparison is not meant to—and does not—capture how individual behavior changes along with, and possibly because of, transformative experiences.

Our methodology innovates with respect to most longitudinal studies measuring the impact of treatments, which tend to focus on outcomes and/or on changes in self-reported data concerning individual socio-psychological and/or economic situations. Measures of outcome clearly provide indispensable *ex post* evidence of treatment effectiveness, but they suffer from drawbacks as they also depend on external factors and lack predictive power. Socio-psychological questionnaires do provide measures of change in behavioral traits, but results are based on self-perceptions and subjective representations. Our approach provides an innovative measure of the transformative impact of treatments, complementary with respect to both outcomes and self-reported data, by measuring changes in behavioral parameters in specific experimental situations. Outcomes and self-reported data remain important, and we also keep track of them in our research cases:¹⁶ achieving better results at some point in one's life—whether improvement in objectively measured or self-reported outcomes—provides a powerful measure of intervention success. We hope that our methodology provides a tentative enquiry into the *nature and causes* of those outcomes, looking at attitudes and behaviors that made those outcomes possible. Longitudinal studies of changes in individual attitudes, habits, and traits can provide forward-looking measures, possibly signaling outcome sustainability. Transformative/restorative changes in attitudes, behavioral habits, and personality traits may provide forward-looking insights into future outcomes. Another important reason for using

¹⁶ We collect self-reported information on self-esteem in the case studies of persons in rehab and of Californian prisoners, and we collect information on the Goma schoolchildren's situations and achievements through specially designed vulnerability assessment sheet and personal fact sheets.

longitudinal experiments is that they allow study of a given treatment by surveying the actual members of that community, but they do not require creating artificial situations of treatment deprivation that may imply arbitrary unfairness. Excess demand for love-based community treatment (which occurs frequently, as needs vastly exceed available resources) can provide control groups appropriate to each specific treatment, allowing us to draw conclusions by using the much less intrusive technique of Difference-in-Differences (DiD) analysis. Thus, our longitudinal approach circumvents the ethical problem of artificially creating discriminatory situations by withdrawing otherwise accessible treatment from a randomly chosen subset of the people who need it.¹⁷

The necessary prerequisite for DiD analysis is that people who stay in the same walk of life tend to exhibit stability in their behavioral parameters. In order to test this hypothesis, we decided to apply the same longitudinal methodology to survey non-academic staff at the Università Cattolica by administering our questionnaire three times over an eighteen-month period. Their parameters proved to be stable, enabling us to interpret statistically significant changes in the parameters of our “treated” samples as evidence of the transformative impact of a change in existential experience. We were not able to identify a proper control group for our interviewees in rehab communities,¹⁸ but we can compare the results obtained in the first wave(s) from people who continue to live in the rehab communities with the results from people who subsequently choose to abandon rehab. The prisoners we study fall naturally into three distinct groups without any intervention from us: persons who successfully applied for the program, persons who applied and are on the waiting list, and persons who did not apply. In the case of Distance Support for schoolchildren we survey treated children, and we use a control group large enough to allow for formerly unsupported children in the control group to enter the Distance Support program at a later time, thus automatically dropping out of the control group.

Our experimental design thus combines “between-subjects” and “within-subjects” methodologies: between subjects, as we compare the sample of persons under treatment (rehab,

¹⁷ Randomization procedures themselves can be problematic. For further reflection on the (often unaddressed) ethical issues raised by randomized controlled trials (RCT), see Baele (2013).

¹⁸ Addicted people not engaged in any rehab program were not amenable to stable research protocols (involving three waves of questionnaires); while repeated requests to the Italian National Health Service to enroll addicted people engaged in one-to-one medical and psychological counselling and help did not bear any fruit, despite several attempts.

GRIP, Distance Support) with the sample of non-treated persons;¹⁹ within subjects, as we longitudinally collect information from the same person at two (or three) different moments of time—ideally, at the beginning and at the end of the treatment period. We thus reap the advantages of the within-subject approach (increasing the statistical power of results and reducing the error variance associated with individual idiosyncratic characteristics of the between-subjects approach), while avoiding its possible shortcomings. For example, we managed to avoid carryover effects of past outcomes on future behavior because of the significant temporal distance between surveys, and preserved the possibility of comparing observed changes in the treated group and in the non-treated group by DiD. Our surveys, which are culturally adapted in order to collect information from people of different ages and literacy levels and living in different environments, include:

- a mix of behavioral economics situations and games;
- qualitative and quantitative textual analysis;
- a number of validated psychological tests.

Using a plurality of disciplinary instruments seems to us a reasonable way to preserve as much as possible the complexity and integrity of human choices and answers across potentially transformative experiences. The external conditions—in particular, living in a love-based community where love can be received and accepted—may induce changes in attitudes and behaviors. However, the decision to change remains deeply internal, engaging the inner freedom of the individual person.²⁰

Behavioral Games and Situations

The main corpus of the surveys we are using in our three ongoing projects consists of (different combinations of) behavioral situations, games and tasks that are briefly presented and critically discussed below.²¹ To exploit the potential of behavioral experiments, while containing their

¹⁹ In some cases (rehab communities for addicted people), as stated above, it is practically impossible—or ethically inappropriate due to privacy violation—to collect information on addicted people who are not (or do not want to be) involved in community-based treatment.

²⁰ We are convinced that fragmenting the essentially unitary experience of human agency along disciplinary lines would make it impossible to capture the vitality of freedom that drives personal choices.

²¹ This section heavily draws from FETZER–CSCC–UCSC (2011, 2014, 2015).

limitations, we include a plurality of experimental situations and games in each of the research projects we are conducting. Hopefully, interpreting the combination of a plurality of behavioral parameters can shed better light on the interpretation of each parameter. Four games and situations measure relational parameters; two tasks measure attitudes toward time and risk; and one task measures (average) sincerity in self-reporting. The four situations and games we use to provide parameters concerning relational choices (social norms, other-regarding preferences) are: the *Dictator Game*, the *Ultimatum Game*, the *Investment Game*, and the *Gratitude Game*.

In the *Dictator Game* (DG), originally introduced by (Forsythe et al. 1994), the situation, fully known to the agent, is the following: the agent is endowed with a given amount of a good (usually money) and an anonymous partner with none. The agent (Dictator) is asked to freely decide if, and how much, of the endowed good is to be sent to the anonymous partner. As standard self-interested behavior would be to give nothing, the DG investigates whether this assumption is violated in real choices. In the established literature, a bimodal distribution of share sent is found, with peaks at 0 percent and 50 percent and an average around 30 percent (Camerer 2003; Engel 2011). The share of the initial endowment sent to the partner is usually interpreted as a proxy for *generosity/altruism*, defined as caring about others' material welfare, or *fairness/inequity aversion*, defined as a preference for equity in the distribution (Guala and Mittone 2010; Pelligra and Stanca 2013).

In our survey, we use textual information provided by the agents to go deeper into agents' motivation for their choices. To the best of our knowledge, this is the first study to include textual analysis of agents' motivations in a behavioral experiment. This appears to be a worthwhile effort; in fact, preliminary textual analysis results from the ongoing research project on rehabilitation show evidence that people in rehab describe the motivations for their DG choices in a variety of ways: as driven by intrinsic moral motivations, as defined in (Kahneman, Knetsch, and Thaler 1986a, 1986b), such as altruism or fairness (we find clear evidence of both streams); by extrinsic social motivations (Frey and Bohnet 1995; Cappelen et al. 2013); and also by other motivations (including religious motivations).

The *Ultimatum Game* (UG) was devised to measure *fairness* (Güth, Schmittberger, and Schwarze 1982), but it may also be interpreted as an index of *inequity aversion* (Fehr and

Schmidt 1999), often in the form of *anger* or *indignation* (Camerer 2003).²² In the UG situation, the agent (with no endowment) interacts with an anonymous partner who has received a given and known amount of a good. The partner is free to choose how to split the received amount with the agent; however, once the partner has chosen the share to be sent to the agent, the agent is asked to accept or to refuse the proposed split. If accepted, the proposed split is implemented and both agents receive their share; if the proposal is refused, no one receives anything. The agent is therefore able to punish iniquitous behavior by the partner—at a cost. In order to punish the proponent, in fact, the agent has to bear the cost not receiving the proposed share he/she refused. Self-interested agents would accept any positive amount offered by the partner, but empirical evidence regularly shows that low amounts (usually below 20 percent of the partner's endowment) are often rejected (Fehr and Schmidt 1999; Camerer 2003).²³

The *Investment Game* (IG) (Berg, Dickhaut, and McCabe 1995)—or *Trust Game* (TG) (Camerer and Weigelt 1988)—works as follows. The agent is endowed with a given amount of a good (and/or money) and the anonymous partner with none. The agent must decide if and how much of the endowed good to send to the anonymous partner: the agent is also informed that the experimenter will multiply (say, triple) the amount the agent chooses to send. The partner who has received the total transfer (the amount sent by the agent, duly multiplied) is then told to choose whether to send any of the total amount back to the agent and if so how much. Self-interested agents would maximize their payoffs by not sharing any fraction of the received endowment with strategic partners (Kreps 1990); the established literature shows that the share sent to the partner in the TG tends to exhibit a uni-modal distribution, peaking around 50 percent of the initial endowment (Camerer 2003; Johnson and Mislin 2011). Sending a positive share to anonymous partners signals agents' openness to interact with unknown partners, providing a proxy for generalized *trust* (Berg, Dickhaut, and McCabe 1995). Possible motivations include pure *altruism* (Rabin 1993); desire to undertake a risky bet to maximize *return of investment*

²² Camerer (2003) defines *anger* as the emotional state associated with a perceived unfairness personally suffered and distinguishes it from *indignation*, which arises when the perceived injustice observed by the agent is suffered by a third party. In our survey, we are able to match agents' minimum acceptable offers with the motivational texts they provide.

²³ Recent literature shows a possible link between biological activity (in particular related to the serotonergic system) and the rate of rejection in ultimatum games (Takahashi 2007; Schweighofer et al. 2008; Emanuele et al. 2008). This link calls for controlling for agents in the rehab sample undertaking substitutive therapy.

(Camerer 2003);²⁴ expectation of *positive reciprocity* or *trustworthiness* (Ashraf, Bohnet, and Piankov 2006); reputational concerns in repeated interactions (Camerer and Weigelt 1988; Andreoni 1990).

The *Gratitude Game* (GG) proposes the same situation as the TG, the difference being that in this case the agent plays the role of respondent instead of the role of initial sender. Thus, the agent has to choose if and how much of the amount of resources received (i.e., the initial transfer sent by proponent, multiplied by the experimenter) to send back to the anonymous partner. The returned share is also described as a measure of *induced altruism* and/or *gratitude* (Berg, Dickhaut, and McCabe 1995); a measure of *trustworthiness* (Camerer 2003); or of *reciprocity*—as “is typically assumed to be *reciprocity* in behavioral economics” (Ashraf, Bohnet, and Piankov 2006, 194); (Fong, Bowles, and Gintis 2006).

In the four situations and games that provide parameters meant to measure social or other-regarding preferences (*altruism, fairness, trust, reciprocity*), each behavioral parameter can have a number of different, nuanced motivations. There is no simplistic, unambiguous interpretation—let alone ethically colored evaluations of the intensity of pro-social attitudes—of the behavioral parameters collected from experimental situations. As an example, take the UG. Given the plurality of ways to interpret the costly decision to forego a reward in order to punish the proponent, can we really link the UG to pro-social behavior? If, by refusing a proposal as unacceptably low, agents signal their aversion to inequality, this could be interpreted as a “good” pro-social attitude. Yet, envy or spitefulness may be the inner motivations for the same decision: the agent refuses the offer in order to punish the lucky recipient of the initial endowment, thus savoring some revenge, albeit at a cost; but few people would include envy and spitefulness among “good” pro-social behaviors.

The same happens with interpretation of behavioral parameters in the TG. It is difficult—in the absence of a textual description of the player’s motivations—to discern whether transfers to the partner are driven by generalized trust (taken to represent a pro-social behavior) or represent a form of gambling (self-interest). This is precisely the reason for including texts and textual analysis in our research methodology. However, even assuming that changes in TG parameters can be safely interpreted as an increase in generalized trust can raise disturbing

²⁴ Camerer (2003) among others suggests comparing the shares sent back in the IG (TG) with the share donated in the DG, as a strategy to elicit *trustworthiness* from the GG.

doubts, given that our project aims at eliciting choices from peripheral, vulnerable people. Are we sure that we need to observe higher parameters for generalized trust, as measured by TG experiments, in order to conclude that we face a case of treatment success? Think of a former substance user in rehab who, as months of treatment go by, comes to realize that he/she had previously trusted the wrong people (say, someone perceived to be trustworthy who actually led to him/her falling deeper and deeper into substance addiction). In this case, prudence in choosing whom to trust (not just anybody, as happens in anonymous interactive games) could indicate a positive transformative experience towards prudence, rather than a worsening in social attitudes.

Another set of behavioral situations used in the research project highlights the role of time and risk in human decisions. Agents' time horizon in contingent choices is both important per se and relevant for cooperative outcomes in society (*folk theorem*): a longer time horizon implies caring for the future—one's own future, and possibly that of others. We propose in our surveys two situations and games: one measuring inter-temporal preferences, the *Inter-temporal Discount Test* (IDT); the other measuring risk-taking behavior and impulsivity, the *Balloon Analogue Risk Task* (BART).

In IDT tests, the agent has to choose between receiving a given amount of money (or good) at a given time or a different amount at a different time. By observing a number of individual choices between specific alternatives, the experimenter can compute²⁵ a summary measure of the agent's inter-temporal preference, namely the ITD rate. In the literature, the ITD rate is meant to provide an experimental measure for delay discounting, i.e., the selection of a smaller more immediate reward over a larger more delayed reward, interpreted in behavioral economics as *impulsivity*, (Bickel and Marsch 2001; Bickel et al. 2007). In the empirical literature on inter-temporal discounting, the variation of the estimated discount rates across and within studies is said to be “spectacular” (Frederick, Loewenstein, and O'Donoghue 2002, 378). Despite these variations, empirical evidence consistently shows that substance addiction is associated with an overvaluation of present rewards with respect to future, as compared to

²⁵ ITD rates are computed on the basis of a hyperbolic discount function. Given the methodological difficulties in measuring individual inter-temporal discount rates, current literature assumes that real inter-temporal choices are best approximated by a hyperbolic discount function (Ainslie 1992), rather than by the traditional exponential discount function. While exponential discount functions assume that the discount rate is constant over time, the hyperbolic discount function allows for an empirically observed behavior called “preference reversal” (Ainslie and Haslam 1992) that would otherwise be regarded as inter-temporal preferences inconsistency.

population at large (Ainslie and Monterosso 2003; Monterosso and Ainslie 2007).²⁶ As we expect something similar to hold for the other vulnerable groups we study, we decided to investigate whether the treatment received in love-based communities is associated with a reduction of impulsivity, as measured by lower ITD rates (which would signal a self-defense mechanism against addiction temptation and other dangerous actions).

As we learnt during pilot testing, replicating existing experimental measures of individual ITD rates tends to be both painfully time-consuming and abstruse. (Numerical ability may play a bigger role than actual inter-temporal preferences in decision-making.²⁷) Given our focus on the choices of peripheral people, with likely low numerical abilities, we decided to include only a small number of inter-temporal situations in the surveys and to present very clear, simple alternatives (that is: in-kind rewards, with time horizons that are commonly used in real life such as “in a week,” “in a fortnight,” “in a month”). Each alternative is implicitly characterized by a notional ITD rate that would equate the present values of the smaller immediate amount and the larger delayed amount. This notional IDR represents the lower bound of the actual (unobserved) ITD rate for the agent. With our methodology, the individual parameter for impulsivity is provided by observing in which situation the agent switches from choosing the immediate reward to choosing the delayed one: the notional IDR corresponding to that situation measures the (minimum) IDR that the agent finds acceptable for selecting the delayed reward.

In order to measure risk-taking attitudes and/or behavior in people with possibly low literacy/numeracy, we included in the survey a visual, quite entertaining task: the *Balloon Analogue Risk Task*, BART (Lejuez et al. 2002).²⁸ BART is a computer-based task, where each participant is (repeatedly) presented with a balloon and offered the chance to earn money (or in-kind rewards) by pumping up the balloon with a click. Each click causes the balloon to incrementally inflate (with potential reward being added, as shown by a counter on the computer

²⁶ Bretteville-Jensen (1999) finds the inter-temporal discount rate for addicted people to be eighteen times larger than the rate for non-addicted (six times larger, if formerly addicted people are considered). The importance of understanding delay discounting in behavioral economics is strictly related to the effort to identify the causes of addiction: “delay discounting is arguably the source of systematic irrationality that has been most conclusively linked to addiction” (Monterosso, Piray, and Luo 2012, 108).

²⁷ Most behavioral experiments, especially with inter-temporal discount situations, are performed with university students, often those attending courses in behavioral economics. Obviously, using a “captive” population of educated individuals allows answering subtle questions on time preferences in a more reliable way. In this case, inter-temporal preferences inconsistencies have been taken seriously and not discarded as irrational.

²⁸ Dahne et al. (2013) use BART with addicted people.

screen) up until some unknown threshold, at which the balloon explodes. Thus, each click confers greater risk but also greater potential reward. If the agent chooses to cash-out the reward by clicking on the counter prior to one balloon exploding, he/she collects the reward earned for that trial; if the balloon explodes, earnings for that trial are lost. A given sequence of trials is provided to all agents, with some balloons exploding very early and others getting bigger and bigger before exploding, in a pre-determined random sequence. Participants are not informed about the balloons' bursting points, allowing for testing both participants' initial responses to the task and changes in their response as they gain experience with the task contingencies. As BART models risk-taking behavior through the conceptual frame of balancing potential for rewards versus risk of losses, it provides a measure for risk-aversion.²⁹

Lastly, we included in our surveys another entertaining behavioral task, the *Dice Rolling Game* (DICE) (Ariely et al. 2014), which concerns *sincerity/truthfulness* in self-reporting. The agent is asked to report the results of a series of single die-throwing tasks. Before every throw, the agent is asked to choose, in his/her mind, either the “up” or “down” side of the die, and memorize this decision without revealing it.³⁰ After completing the throw, the agent will gain the points corresponding to the side he/she ends up declaring. That is, the agent can gain by cheating in reporting the outcome, strategically declaring his/her non-observable choice after the throw in order to maximize the value of his/her rewards.³¹

Observing DICE average reported scores provides (stochastic) information about the attitudes of a given group or population to truthfully reporting a series of favorable/unfavorable events. In fact, the distance between the average reported score and the expected value of a series of die-throwing tasks where the agent can only declare up or down (by construction, equal to 3.5) provides a statistical measure of (group average) truthfulness in reporting outcomes. As an individual could report an average reward above 3.5 by truthfully reporting an above-average

²⁹ Risk-taking is a process related to, but phenomenologically distinct from, impulsivity. See <http://www.impulsivity.org/measurement/BART>.

³⁰ In the web-based version of this game, the agent is presented with two differently colored dice (one blue, the other green) that behave exactly as two opposite side of a single die (if the green shows 6, the blue shows 1, etc.) Before every throw, the agent is asked to choose, in his/her mind, green or blue and memorize this decision without revealing it. The rest of the game is identical.

³¹ DICE situations have been used to analyze the influence of different cultural and social environments on sincerity, applying this situation to people born and raised in the (former) German Democratic Republic versus the Federal Republic of Germany (Ariely et al. 2014) or applying it to bank managers versus other professionals (Cohn, Fehr, and Marechal 2014).

series of lucky throws—and not because of cheating—DICE does not provide measures of individual truthfulness. The stochastic nature of DICE results implies that only asymptotically can one say that the expected average gain in dice throwing is 3.5, so that individual higher averages cannot be interpreted as strategic misreporting. However, DICE does provide statistically significant comparative information with respect to *truthfulness/sincerity* across different groups, in our case in the “treated” and the control(s) groups.

We are aware that observable behavior (*a fortiori* experimentally observed behavior) is a poor proxy for real human acting, and experimental games and situations are very rudimental forms of eliciting information about subjective traits and attitudes, let alone about motivations driving human decisions—an intricate bundle of expectations, aspirations, beliefs, intrinsic and extrinsic incentives. However, measuring how behavioral parameters change over time for the same individual, in correspondence to his/her experiencing a significant and lengthy change in living conditions, can provide valuable objective information on transformational processes.

Analyzing the combination of parameters relative to different games for the same individual (together with the textual explanations provided by the agents we survey, as detailed below) may also shed some light on the crucial, and somewhat elusive, dimensions of love in transformative experiences. In fact, intimate self-regarding and other-regarding attitudes cannot be easily captured by individual parameters in behavioral games. Different dimensions of love may be at play in transformational experiences: reciprocal love, but also unconditional loving relations. In particular, receiving and accepting love, and reciprocating it, seems to require some form of offering unconditional love to start with. Textual analysis may help in disentangling these aspects.

Textual Analysis and Psychological Tests

We use textual analysis with two aims.³² First, we are interested not only in observing behavioral parameters but also in grasping what the decisions actually mean for individual agents, as a

³² The textual information is either typed directly by the agent in the web-based version of the questionnaire (rehab communities), or handwritten in the paper-based version (GRIP), or orally expressed in the local language—Swahili—and subsequently transcribed in both Swahili and French by the interviewer (schoolchildren in Distance Support programs, with inadequate literacy in French). While typing and writing provide a non-intrusive environment for interviewees, orally answering may involve some priming effects on schoolchildren. In order to limit priming as much as possible, we stipulated that interviewers should have no relationship whatsoever (neither prior nor foreseeable) with the

variety of narratives is possible, yielding different interpretative nuances (or even different interpretations) of the behavioral parameters under study. Second, we also introduced textual analysis for collecting evidence concerning the characteristics of the community experiences under scrutiny, to meaningfully label them as love-based. The specific form of textual data we use depends on the project: *ad hoc* oral interviews³³ or publicly available narratives³⁴ provided by the community's founders or leaders, community staff, and people who have completed or are still undergoing the "treatment." We expect quantitative and qualitative textual analysis of the above to provide useful insights for identifying the particular features of each "treatment" community, including whether the language agents use explicitly refers to love, forgiveness, justice, dignity, altruism, and so on. Ideally, we would like to be able to assess the relative prevalence of "love" versus "rules," as constitutive dimensions of a given program.

On the basis of systematic dialogue with leaders and staff for both rehab communities and GRIP, as well as with colleagues in psychology departments,³⁵ we focused on selecting validated psychological tests related to *forgiveness* (ability to forgive others and to ask for forgiveness; ability to forgive oneself), and *self-esteem*. These tests require the agent to carefully read a statement (sometimes making reference to recent personal experience), and express the degree of agreement or disagreement by ticking an item on a given Likert scale. With a view to making a parsimonious use of these psychological tests, which are time-consuming and require a high reading proficiency (which cannot be taken for granted, as we survey vulnerable people),

schoolchildren: that is, interviewers should not be school personnel nor personnel related to the nongovernmental organization (NGO) organizing the Distance Support programs.

³³ For the project on Italian rehab communities, we devised a list of specific questions, as neutrally formulated as possible in order to avoid priming effects, to be orally answered by interviewees. The answers are subsequently transcribed and analyzed with quantitative textual methods. The same set of questions is answered by three groups of people: community's founders/leaders, community staff, and rehabilitated people who have completed the treatment. Questions are designed to elicit narrative, descriptive answers (example: "How are daily activities organized in the community?"), so that answers may or may not include reference to keywords of interest for our research (love, truth, forgiveness...). Interviewees are also asked to indicate seven key words describing their own experience in the community. See Appendix for summary results from the second pilot study on rehab communities.

³⁴ The GRIP website (<http://insight-out.org/index.php/programs/grip-program>) and the Distance Support (AVSI) website (<http://www.avsi.org/2012/03/14/distance-support-2/>) provide a wealth of narrative documents, including mission statements provided by the organization and exemplary personal histories. In both cases, these publicly available documents complement the direct provision of texts by interviewees.

³⁵ Conversations with rehab community leaders and operators confirmed that propensity to forgiveness (of others and, most significantly, of oneself) is a sign of successfully completing the first stage of the rehab process and that gratitude is another key step.

we ended up focusing on *self-esteem* (Rosenberg 1965) and propensity to forgive, including *forgiving others* (Mullet et al. 1998) and *self-forgiveness* (Regalia and Pelucchi 2014). The self-forgiveness test, in particular, is to be answered after recalling a specific situation that occurred in the last six months in which the interviewee offended or mistreated another person (or persons).

EXPERIMENTAL SETTING FOR THE THREE RESEARCH PROJECTS

The following paragraphs provide a compendium of treatment, subjects involved and experimental procedure for the three ongoing research projects.

Can Love and Forgiveness Defeat Addiction? A Survey within Italian Rehab Communities

Treatment

The basic “treatment” that formerly addicted persons receive when they enter a love-based rehab community is, as already mentioned, very simple: sharing an orderly daily life; being accompanied in learning anew the basic relationships that are essential for living in society (how to relate to oneself, to material things, and to other people); rediscovering, over time, inner freedom and purpose; preparing for reintegration in society, according to personalized paths, worked out in dialogue with community staff.

The Italian rehab communities we involved in the research provide a community-based “treatment” for addicted people seeking rehabilitation, which consists in sharing simple daily life with (a small number of) other people in rehab and with community workers—including paid and voluntary workers. That is, community members including staff and people in rehab share communitarian rhythms for waking up, taking food, working, playing, and resting.³⁶ The process of rehabilitation is usually divided into three stages (that can occur in three different locations within the same community’s network):

- A reception stage, in which, in the first days/weeks, all applicants are given essential help and assistance. This is the starting point of every rehabilitation process, with the addicted person asking for help. This is particularly true when the entrant is still suffering the effects of chemical addiction, thus requiring medical/chemical support to exit from the easiest form of the addiction (chemical

³⁶ A more thorough narrative is available as FETZER-CSCC-UCSC (2016).

addiction). Once this phase is over, the person may formally enter the community stage. This first stage constitutes therefore a sort of filter to identify special needs and to assess the gravity of every single case, in order to devise the most appropriate solutions.

- The community stage proper, which can last around one to two years, constitutes the core part of the rehabilitation process. The communities included in our study focus on the familiar aspects of community life; educate guests to take care of themselves, respect each other, and take responsibility (by sharing routine works and performing tasks); and progressively help guests to open to the local society.
- The final stage consists of reintegration within families of origin, if appropriate, and in the broader society.

All the communities included in the study consist of small, family-like units (usually around fifteen to twenty guests per community home), characterized by a day-to-day routine based on sharing—spaces, rooms, and also material resources—and reciprocal caring. Each of these small units, commonly called *casa* (home), is led by a head of staff—usually a trained psychologist or social worker—who is in charge of managing the small community. He/she is normally assisted by trained social workers (the number depends on the total number of guests in the community) who take care of the day-to-day activities of the people in rehab, spanning self-care, meditation, prayer, and work. Finally, these communities are very often supported by a variable number of volunteers who help to create a vital link to the world outside the community boundaries. The rehabilitation programs implemented in the communities included in our study are validated by psychologists; medical care, especially in the first phase, is either provided directly by the Italian National Health Service (NHS) or administered by the community according to NHS protocols.

Each community has specific rules, providing an orderly space in which love-based relations can develop. People in rehab learn by imitation, month after month, to personally take care of relationships. The first step concerns the relationship with oneself (self-consciousness, self-forgiving, self-esteem). The following steps concern relations with material reality: typically, agricultural work that allows guests to see fruits and vegetables and flowers grow as a result of their care; and relations with other people—later in the rehab process, people in most

communities normally participate in providing service work and in supporting other people in need, such as handicapped children. They also learn to develop social relations (especially through artistic expression, artisan crafting, refining their previous job skills, or acquiring new ones), thus getting ready for reintegration in society.

Persons in rehab are free to leave the community—and they frequently do, because rehab paths are very hard work. Remaining in the community is a factual indicator that something humanly attracting is present there—meaningful enough to overcome the inevitable hardships.³⁷

Subjects

The participating communities have been identified after extensive research and personal interactions with their leaders and top officers; with different specific profiles, each of them provides educational environments where orderly daily life unfolds within personalized relations where persons in rehab are loved and accompanied. Each of the communities in our sample provides its own particular mix of rule-based and love-based treatment, but all of them are clearly different from anonymous treatments with methadone and from one-to-one counseling protocols (no community life). All of them, with different accents, share the understanding that love and forgiveness need to be experientially received and freely accepted, in order to become part of one's attitude toward oneself and others.

As each rehab community includes a small number of people in rehab, for statistical significance we ended up involving (and keeping motivated in participating over a long period of time) forty-two rehab communities belonging to nine different networks:

We asked everyone entering the rehab process within the first wave (six months, February 2015–July 2015) to participate in the survey and complete the web-based questionnaire. During the first wave of interviews, we collected 192 valid questionnaires in thirty-two rehab communities.

Individuals are free to leave the community if they so wish, and a significant number of individuals are expected to drop out of the rehab process (informal evidence indicates that fewer than 50 percent of people in rehab complete the “treatment”). Even dropouts' surveys, however, provide relevant information for the research project, as their average behavioral choices,

³⁷ According to the scant information on the topic, the average drop-out rate is about 70 percent.

psychological attitudes, and textual contributions may exhibit statistically significant differences with respect to averages for people who continue in the treatment process.

As university students (the group we used as partners in the interactive games of the pilot studies) were not adequate as a control group for rehab community members, due to their being significantly younger and more highly educated than our sample of persons living in rehab communities, we also submitted three waves of the full survey to a sample of 200 nonacademic employees of the Università Cattolica del Sacro Cuore (UCSC) (warden, cooks, secretarial staff...), randomly selected to match the genders, ages, and education of the group in rehab.

TABLE 1

ITALIAN REHAB COMMUNITIES INVOLVED IN THE RESEARCH PROJECT	
Networks	Number of communities Involved
Associazione Casa Famiglia Rosetta	2
Papa Giovanni XXIII	14
Nuovi orizzonti	4
Exodus	3
Fides ONLUS	1
Cooperativa Sociale PARS	1
Consorzio Cometa	2
Casa del Giovane	1
Cooperativa Sociale Bessimo	4
Total number of communities involved	32
Total questionnaires collected during the first wave (February–July 2015)	192

TABLE 2

**DEMOGRAPHICS OF PEOPLE IN REHAB AND UCSC
NON-ACADEMIC EMPLOYEES**

Community members				UCSC employees						
				All 3 waves 37 resp.				2 waves only 68 resp.		
Variable	N	Mean	SD	Variable	N	Mean	SD	N	Mean	SD
age	73	33.93	10.27	age	37	38.46	5.56	68	39.57	0.38
size of family of origin	73	4.58	1.27	size of family of origin	37	4.11	1.07	68	4.18	1.12
sex				sex						
<i>male</i>	53			<i>male</i>	30			56		
<i>female</i>	20			<i>female</i>	7			12		
education				education						
<i>junior high or lower</i>	49			<i>junior high or lower</i>	2			9		
<i>high-school</i>	20			<i>high school</i>	18			29		
<i>tertiary or higher</i>	4			<i>tertiary or higher</i>	17			30		

In the first wave we received 103 valid answers, which we used for providing partners for anonymous interactive games with people in rehab and also as a relevant benchmark for non-addicted people.³⁸ We administered the questionnaire to UCSC non-academic employees two more times, as the second and third waves of the survey were launched (in January 2015, October 2015, and June 2016). University employees were asked to take the web-based survey within one given weekend. Comparing university employees' survey results over time provided the expected evidence of overall stability in parameters for people not experiencing community rehab.

Experimental Procedures

Our encounter with Fr. Vincenzo Sorce was especially important in practically developing our methodology, as he trusted us to perform our initial pilot studies, financed by the Fetzer Institute,

³⁸ While we cannot be sure that university workers in our control group are not substance users, they represent people randomly drawn from a population who hold a regular job position and are not experiencing severe distressful situations.

within two rehab communities belonging to the network Casa Famiglia Rosetta (CFR), which he founded in the early 1980s. The CFR is at once a powerful exemplar of love-based treatment³⁹ and a think-tank engaged in self-reflection and in systematic reflection on rehabilitation strategies.⁴⁰ Together with Fr. Vincenzo and Mr. Rosario Cigna (head of the rehab department of the CFR), we developed and tested different (web-based) versions of the survey, and we learnt how to progressively adapt the survey to the specific characteristics of members of rehab communities.

After an extensive review of the literature on behavioral economics situations and games, concerning in particular the behavior of addicted people,⁴¹ we identified a series of behavioral habits and traits that tend to be significantly different for addicted people with respect to the population at large: inter-temporal preferences, impulsivity, and risk-taking (Ainslie and Monterosso 2003; Monterosso and Ainslie 2007; Bickel et al. 2007; Dahne et al. 2013), relational behavior and other-regarding preferences.⁴² We included in our early surveys specific

³⁹ Established by Fr. Vincenzo Sorce in Caltanissetta (Sicily) in the 1980s, the Casa Famiglia Rosetta Association (<http://www.casarosetta.it/default.aspx>) offers reception, care, rehabilitation, and social inclusion programs to people with physical and/or mental disabilities; people with alcohol and drug abuse and gambling dependence issues; at-risk minors or minors living in dysfunctional families; elderly people; people affected by AIDS; and women in need. Since 1995 the Association has also been active in Brazil and since 2005 in Tanzania. Quite remarkably, the Brazilian initiative was developed by formerly addicted people who underwent the love-based treatment within the CFR.

⁴⁰ The CFR is recognized as an Organization with Consultative Status with the United Nations Economic and Social Council (ECOSOC); it has also established the Alessia Foundation–Euro-Mediterranean Institute for Training, Research, Therapy and Development of Social Policies. Since March 2009, the Association has been engaged as an NGO specialized in the field of drug abuse and HIV/AIDS issues in the TreatNet Project of the United Nations Office for Drug and Crime (UNODC). The CFR network of people includes many highly specialized professionals who monitor and keep track of their methods' impact and outcomes, as you can see from the list of publications, including the journal *Solidarietà* (<http://www.casarosetta.it/topic/83-solidarieta.aspx>) and various series of volumes (<http://www.casarosetta.it/topic/205-collane.aspx>).

⁴¹ Economics and behavioral economics of addiction mostly concern factors influencing the choice of substance use (substance intake depends on its ratio of benefit/cost as compared with other activities). Substance use produces a rapid but small reward as compared with more valuable delayed gains from other activities. The four major theories of addiction considered in behavioral economics are hyperbolic discounting, melioration, and relative and rational addiction (Vuchinich and Heather 2003). Noë (2011), however, suggests considering addiction as a “disorder of choice.”

⁴² It is common knowledge that substance-addicted people tend to lie and to manipulate others; Correia et al. (2010) and Ferentzy and Turner (2013) study behavioral choices related to substance use, substance addiction, and other forms of addiction. However, behavioral economics situations and games concerning addicted people's *relational* behavior cannot be found in the literature.

situations and games measuring behavioral parameters related to those traits and attitudes. As traits and attitudes tend to be quite stable, their change would signal personal transformation.

The first pilot study (2012) was based on a pseudo-panel, matching-pairs methodology.⁴³ The second pilot study was a longitudinal analysis, consisting of two waves of interviews: the first performed with people just entering the rehab communities (November 2013), and the second with the same individuals after a rehab period of six months (May 2014).⁴⁴ We developed and tested different (web-based) versions of the survey, and we learnt how to progressively adapt the survey to the specific characteristics of members of rehab communities. Preliminary results from both the matching-pairs and longitudinal pilot studies were encouraging: during the rehab experience individual agents' behavior and psychological traits changed in the expected directions, even if not all coefficients were statistically significant. Community life appears to produce, over six months, a reduction of "extreme" behaviors and psychological traits⁴⁵ both within community members and with respect to average values in the quasi-control group of USCS staff. Textual analysis showed persistence and internal coherence within subjects and again a tendency to smooth "extreme" motivations when moving from wave 1 to wave 2. The result of the two pilot studies encouraged us to launch an extensive explorations of Italian rehab communities.

⁴³ It consisted in surveying two groups of people in rehab: group A, composed of people who had just entered the community; and group B, people in rehab at the end of the rehab process, composed of people ready to leave the community (after around eighteen months) for the further phase of re-integration into society. The data of each individual in group A were matched (on the basis of similarities in socio-demographic and educational characteristics) with those of an individual in group B. The first pilot study produced the expected results, as we observed significant differences (with the expected signs) in behavioral parameters between new entrants and people who had almost completed their eighteen-months rehab period. A group of university students also completed the behavioral subset of the questionnaire, mainly to provide partners for rehab community members in interactive games.

⁴⁴ Six months is a much shorter than optimal time span: but if our methodology could detect transformations in a short period of rehab experience, *a fortiori* it is expected to yield reliable results over the typical duration of a rehab process (eighteen months).

⁴⁵ Before reaching this conclusion we tested for pure peer-effect, in order to check whether the outcome was the intended effect of the community's educational process or merely the effect of living in a small group of peers. As we detected convergence across agents irrespective of the community they lived in, we could conclude that life in a rehab community *per se* tends to reduce extreme traits and behaviors

The full-fledged implementation of the rehab research project required a thorough exploration of the vast, scattered pattern of rehab communities in Italy.⁴⁶ Contacting communities' leaders/founders required much time and effort but at the same time provided us with a deeper understanding of the problems, opportunities, and meaning of operating rehab communities. Moreover, the informal knowledge we gathered proved very relevant to the broad cultural aims of our research, that is, gathering empirical evidence on the transformative impact of love-based relations on human decisions and choices. For example, some impressive love-based rehab community leaders whom we contacted raised meaningful objections to our methodology, such as: "We see your point, but our people in rehab are people to be loved, not subjects to be studied." In other cases, we encountered rehab communities with strictly rule-based treatment protocols, including total material dispossession, where obedience to rules is expected and no rewards are allowed. Thus, unfortunately these could not be part of behavioral-experiments research such as ours, which necessarily implies individual rewards. We also tried involving the Italian public health service (based on a system of local, partially autonomous entities), where addiction is dealt with in a number of alternative ways: individual provision of methadone, individualized counseling, and referral to community-based rehab initiatives. The project received a positive response, but we made no progress in implementation (partly because of constantly changing assignment of responsibilities and functions to different offices).

The most successful contacts were with networks of geographically diffused communities, each community being relatively small but connected to a common central reference point as to educational and rehab practices. We remain confident about future collaborations: as results of pilot studies proved persuasive in attracting new communities in the full-fledged research, we hope that forthcoming results may attract the attention of other initiatives for addicted people, both in the private and in the public sector. Extending our research to different treatment protocols for rehabilitation from substance dependence (monitoring both objective outcomes and survey-based longitudinal measures of transformative experiences) would be both innovative and very useful for rehab policy design and

⁴⁶ Some very innovative and effective communities (often with a strong artistic penchant) were simply too small to receive a statistically significant number of new entrants and hence could not be involved in our research.

implementation.⁴⁷ Ideally, we would like to compare outcomes and transformational experiences for different rehab protocols, which could be classified along a two-dimensional mapping allowing for different degrees and combinations of love-based versus rule-based treatment, on the one hand, and individual versus community-based treatment on the other. Alternative protocols, classified along those two dimensions, would provide relevant “natural” control groups for love-based community treatments. Such a research design requires a sufficiently large number of subjects participating in at least two waves of questionnaires per community. Given the high dropout rate and the small scale of each community, and most relevantly the absence of a proper control group, we cannot apply DiD analysis to the rehab communities case. However, more general results on the effectiveness of community life in changing behavioral traits and attitudes may be obtained by simply performing basic t-tests on the mean difference of the treated population before and after the treatment.

The full-fledged version of the CSCC research project *Can love and forgiveness defeat addiction?* is a longitudinal study including three waves of surveys, performed by means of a web-based questionnaire. Individual interviews occur at specific (personalized) dates within each of the three survey waves: at t_{io} (the moment of agent i joining the rehab community); $t_{io} + \text{nine months}$; and $t_{io} + \text{eighteen months}$.⁴⁸ Besides the fact that individuals seeking treatment joined communities at different times, the various rehab communities also joined the CSCC research project at different times—this is why we refer to survey “waves,” each wave lasting about six months.

The web-based interviewing procedure is designed to fully preserve anonymity, so that each interviewee is able to freely express choices and motivations, unconcerned about possible judgmental attitudes of peers and community staff. Each interviewee is matched to a code number; community staff can match the code number with the name of each person in rehab, so as to be able to deliver rewards according to the web-based algorithms, but they have no access

⁴⁷ Empirical evidence concerning the effectiveness of rehab communities for ex-addicted people comes from self-reported data and voluntary toxicological tests; such evidence is scattered, and the literature on the topic is virtually nonexistent. Even compulsory toxicological tests (hair samples) would provide evidence concerning substance intake in the recent past but no information about the sustainability of the non-addicted status. Our research can contribute to filling an information gap on the effectiveness of alternative rehabilitation protocols; filling this gap is relevant for both private fundraising and public policy-making. Moreover, the informal knowledge network created by participating in our research is valuable as a basis for collaboration among communities.

⁴⁸ Each person being surveyed three times allows capturing nonlinearity in the transformative process.

to information about answers to questionnaire provided by people in rehab. The research team receives and elaborates the coded answers to the questionnaire, knowing codes and results, but on its side has no information about personal identities.

Given the low levels of average literacy among people in rehab, we devoted much effort to producing a web-based questionnaire with as little text and as much visual communication as possible. *Behavioral situations and games* are briefly described in words on the online platform and are also illustrated in a clear visual manner, with examples designed to avoid priming effects as much as possible. The behavioral games and situations included in the survey (Dictator Game, Ultimatum Game, Investment Game, Gratitude Game, Inter-temporal Discount Test) involve in-kind endowments and require the interviewees to make decisions in regard to receiving rewards.⁴⁹ Rewards are either directly determined by individual decisions or determined by automatically matching individual decisions with choices made by an anonymous partner (a university non-academic employee) who already performed the task, in order to calculate rewards. After using espresso coffee in the first pilot (logistically quite difficult for the community staff to provide, as each cup of coffee has to be prepared immediately before consumption), we decided with community founders/leaders that cigarettes could be used as payoffs.⁵⁰

We included three *psychological sections* described in the general methodology. Our desire to produce a not-too-boring questionnaire spurred our interest in using BART and DICE; both turned out to be especially useful in subsequent research projects as well.

After performing behavioral tasks, interviewees are requested to type a short text of motivations and/or comments related to that game or situation, thus providing material for *textual analysis*. We also intend to submit the qualitative open-question interview we tested and validated in the pilot study to directors and staff members of each community, in order to assess

⁴⁹ It is well known that the use of money (or other goods) in experimental games tends to enhance greed in decision-making. However, our experiment is not about measuring levels of pro-social attitudes as such; rather, its aim is to observe whether time and relations matter for changing behaviors and attitudes, by applying—where possible—Difference-in-Difference techniques.

⁵⁰ We are aware that both cigarettes and coffee have non-negligible negative health effects. In fact, both goods are allowed but rationed in their quantity in rehab communities. Most communities (all of the communities in our sample) allow people in rehab to smoke up to a given number of cigarettes per day; moreover, communities' members tend to use cigarettes as a medium of exchange in informal trades among themselves.

the specific reference to and relative relevance of rules and love/forgiveness in the daily working of the rehab process within each community.

Leaving the Prison before You Get Out: The GRIP Program in Mule Creek and Avenal California State Prisons

Treatment

Insight-Out,⁵¹ a Californian NGO with which we connected via the Fetzer Institute,⁵² has been serving Californian prisons for years through the Guiding Rage into Power (GRIP) program, impacting and healing the lives of hundreds of people. Insight-Out is committed to the improvement of prisoners' lives in California and organizes educational initiatives for prisoners and challenged youth, with a view to creating the personal and systemic change needed to transform violence and suffering into opportunities for learning and healing.

The GRIP Program, active in San Quentin for seventeen years and now operating in other Californian prisons, provides prisoners with the tools that enable them to learn how to stop their violence, to become emotionally intelligent, to cultivate mindfulness, and to come to understand victim impact. The program originates from the founder's vision that violence and unlawful behavior are often connected to having experienced a lack of relational connections or violent ones. In the words of Jacques Verduin, the GRIP educational, restorative program aims at enabling prisoners to "turn the stigma of being a violent offender into a badge of being a non-violent peacekeeper"; it is about "becoming agents of change," thus "leaving the prison before you get out."⁵³

⁵¹ <http://insight-out.org/> Insight-Out refers to the process the GRIP Prison Program teaches, guiding people on a healing journey deeply inside of themselves from which they come back out transformed and ready to serve others. Insight-Out also refers to the former prisoners who now work for the organization, men who once were in prison and are now out; Change Agents trained and ready to work with challenged youth and teach their brothers and sisters who are still incarcerated. Lastly, Insight-Out seeks to reform the prison system from the inside out, as a movement of engaged citizens that includes law enforcement, victims, prisoners, and at-risk youth. "Perhaps only in directly supporting our prisoners in transforming themselves can we transform our prison system as well" (<http://insight-out.org/index.php/component/content/article/109-featured/106-statement-from-founding-director>).

⁵² Jacques Verduin, the founder of Insight-Out, listened to Mario presenting the broad lines of our research project on addiction at an international conference organized by the Fetzer Institute at Assisi in September 2012. He proposed GRIP as a second possible case study; and this was the beginning of our partnership.

⁵³ Some numbers: out of 182 GRIP graduates, 43 have been subsequently released and none have returned to prison (the average recidivism rate in California being 64 percent of released prisoners returning to

GRIP works through a year-long program that aims at providing prisoners with the tools to not only change their behavior, giving up violent behavior, but also become “agents of change,” that is, “people with skills to defuse conflicts around them.”⁵⁴ In particular, the program focuses on the origins of behaviors and habits that are conducive to crime with the specific purpose of undoing “the characteristic destructive behavioral patterns (including addiction) that lead to transgressions.”⁵⁵ The core idea is to address each prisoner as a person, rather than merely as a problem, and make him feel loved and respected, without neglecting the gravity of the offence. Experience and anecdotal evidence about reduction in recidivism reveals that the GRIP program has a considerable effect in helping prisoners to get a second opportunity in their lives and building sound and long-lasting relationships. We wanted to use our objective and scientific methodology to prove whether GRIP really succeeds in transforming the psychological traits and behavioral attitudes of inmates.

After being successfully run in San Quentin for almost two decades, the GRIP program has been introduced for the first time in two other prisons in California, namely Avenal State Prison and Mule Creek State Prison, in September 2015. The program usually spans over an “academic year,” namely roughly ten months (between September and July), and develops through fortnightly lessons, each focused on a specific topic, aiming at four macro objectives:

- stopping violent behavior;
- cultivating mindfulness;
- achieving emotional intelligence;
- understanding victim impact.

Activities consist of classes over an “academic year,” held through a variety of didactic methods, including formal lessons, group work, and interventions from external guests. The key methodological effort is at creating friendly relationships and strong group identification (the classmates—of different ethnicities and backgrounds—work together as a “tribe”). Personal narratives and evidence available on the Insight-Out website reveal that the GRIP program, by helping prisoners reflect on their lives, enables them to effectively experience the possibility of a

prison within three years). See *GRIP Program: An Excerpt of the Work in Action*, <http://insight-out.org/index.php/component/content/article/109-featured/106-statement-from-founding-director>.

⁵⁴ See <http://insight-out.org/index.php/programs/grip-program>.

⁵⁵ Ibid.

different daily life in their (externally unchanged and quite hard) prison environment. Not only have some of these men transformed their own behavior; they have become agents of change—people with skills to defuse conflicts around them.⁵⁶

Subjects

The GRIP program is open to almost any prisoner who applies, but class capacity is limited to twenty-five people; this size constraint makes it possible to randomize admissions from a large number of applicants, somewhat limiting self-selection bias. In each of the two California state prisons, Mule Creek and Avenal, the survey involves all of the prisoners enrolled into the 2015–16 GRIP program (twenty-five is the class maximum capacity per year); another twenty-five prisoners who applied but could not be admitted because of the limitation in class size and who may attend GRIP in the future; and another twenty-five prisoners randomly drawn from among those who did not apply to participate in GRIP. In total, the research involves around a hundred and fifty prisoners (seventy-five in each prison), evenly distributed in the three groups. This procedure is expected to guarantee significance of statistical results and reliable evaluation of program effectiveness.

Experimental Procedures

Insight-Out collaborates with the CSCC to run a longitudinal survey of prisoners enrolled in the 2015–2016 GRIP program at Mule Creek and Avenal State Prisons⁵⁷ to gather survey-based evidence about GRIP's transformative, pro-social impact on prisoners' behavioral choices and psychological traits.

A group of Californian community college students, trained and accompanied by a research team member from the CSCC-Milano, administers the paper-and-pencil questionnaire, so as to avoid any direct involvement of Insight-Out staff in the research process and to prevent possible priming effects. College students have been trained to appropriately calculate and deliver immediate rewards to the prisoners; in the case of delayed rewards (Inter-temporal choices), Insight-Out staff will deliver the postponed reward according to specific instructions

⁵⁶ See: <http://insight-out.org/index.php/insights/stories-from-prison>.

⁵⁷ Saint Quentin, where Insight-Out has been present for decades and the GRIP program has been active since 2011 (see https://www.youtube.com/watch?v=W_GOcIBIXKA), was not selected as a case study because the large number of educational activities available in that prison made it virtually impossible to find a significant control group. Thus, the introduction of GRIP in two other, more peripheral, high-security prisons in 2015–2016 offered us a significant experimental opportunity.

(date and amount) provided by the students. However, Insight-Out staff members have no access to prisoners' answers to the questionnaire.

All interviewees' answers are treated in a strictly anonymous manner, using a coding procedure analogous to that described in the rehab case (the code-names match is only known to Insight-Out; the code-questionnaire match is only known to the CSCC research team). Names and self-reported personal details of prisoners do not appear in the questionnaires. After completing the procedure (individual filling of the questionnaire, calculation of payoffs for interactive games, rewarding), interviewers immediately seal each anonymous questionnaire in an envelope, and the envelopes are inserted in a container to be mailed to the CSCC-Milano.

The interdisciplinary survey collects information on individual prisoners' behavioral choices, textual contributions, and psychological parameters. The questionnaire will be administered twice, at the beginning and at the end of the GRIP program. The first wave of surveys was completed in November 2015.

As Avenal and Mule Creek are security prisons, inmates are not allowed to use computers; as a consequence, we could use neither the web-based survey nor its (non-web) computer-based version. We thus prepared a paper version of our questionnaire, including a paper-based version of interactive games with anonymous non-prisoners (we used UCSC employees as prisoners' partners in interactive games).⁵⁸

The paper-and-pencil questionnaire used for studying the GRIP restorative program includes six behavioral sections (the Dictator Game, Inter-temporal Discount, the Ultimatum Game, the Investment Game, the Gratitude Game, and the DICE Sincerity Test). The behavioral section of the questionnaire is written so as to be self-explanatory and easy to answer, but we also prepared a subsidiary booklet with visual examples for each game and situation (carefully avoiding priming effects). That booklet is available to prisoners whenever they ask for clarifications, so as to minimize differences in information available to prisoners.

Payoffs and rewards are given in the form of dried soup packs, which are much appreciated within prisons both for personal use and as a medium of exchange. Prisoners also receive stationery as a token gift for participating in the survey.

⁵⁸ Thus, interviewers could immediately calculate payoffs for all situations and games, including interactive games, and proceed immediately with rewarding prisoners.

The set of psychological sections, the same as those we use in rehab communities, includes Self-Esteem, Forgiving and Self-Forgiveness tests. The latter test was slightly reformulated as we decided, in agreement with GRIP leaders, not to ask the prisoners to provide a written description of a situation, within the last six months, in which they had offended or treated someone badly. We opted for having the prisoner think about that situation and keep it in mind when answering that part of the survey, without writing about it. We preferred this procedure because it is less intrusive and more socially acceptable in a difficult environment, where punishment from guards and/or retaliation from fellow inmates might be feared.

Vulnerable Schoolchildren Participating in the AVSI-RDC Distance Support Program in Goma, DRC⁵⁹

Treatment

The AVSI Foundation is an international not-for-profit NGO founded in Italy in 1972. Its mission is to promote the dignity of the person through development cooperation activities, with special attention to education, in accordance with the social teaching of the Catholic Church.⁶⁰ A long history of collaboration⁶¹ between AVSI and CSCC members, and a shared vision of human dignity and development, facilitated identifying which educational project could be used as a case study. With AVSI managers and staff, we identified the Distance Support Program (DSP) as the most suited to our methodology. Both observed outcomes (Lauro and Rovati 2010) and documented narratives of individual transformative experiences (AVSI 2010)⁶² provide clear evidence of the transformative impact, at the personal and societal level, of the DSP as a love-based community treatment. The DSP provides much more than predictable money transfers from donors to vulnerable schoolchildren's families. DSP is a stable, continuous economic

⁵⁹ Democratic Republic of the Congo or DRC; in French, République démocratique du Congo or RDC

⁶⁰ <http://www.avsi.org/who-we-are/>. AVSI is currently involved in 107 cooperation projects in 30 developing countries throughout Africa, Latin America and the Caribbean, Eastern Europe, the Middle East and Asia, and works with 700 local partners all around the world (NGOs, public institutions, local authorities, community- and faith-based organizations, informal groups, companies). Of these, 68 constitute the informal AVSI network, which systematically works on project implementation, sharing methods and experiences, discussing development issues, and enhancing staff organizational, management, and technical capacities.

⁶¹ AVSI, in particular, has been involved since its launch in 2006 in the ASERI master's program in International Cooperation and Development, directed by Simona Beretta.

⁶² AVSI (2010) is a photographic book rich in personal story-telling that documents how changing the prospects of one child had a positive influence on the lives of innumerable others.

contribution directed towards one specific child or adolescent from one specific donor who receives regular information on the child, the program and on AVSI's activities in the world. This contribution allows AVSI to design an individual intervention plan for the child, his/her family and community, to give material support and to accompany his/her education always with the presence of an adult, within a stable network of community relations.

New children enter DSP on an ongoing basis, as donors become available; however, during the 2015–2016 school year, AVSI-RDC activated for the first time a DSP in Goma (DRC). This new program involves 178 new children entering the DSP at the same time, all attending school in local educational institutions—thus providing a uniquely favorable research opportunity. Accordingly, in close collaboration with the AVSI Foundation and AVSI-RDC, we developed a culturally adapted version of our longitudinal interdisciplinary research project, including a new questionnaire and specific modalities for performing the interviews.⁶³

In AVSI's experience, two years is the typical time required for participation in the DSP to produce significant transformative impacts. Over two years, our research methodology can be expected to provide evidence both by measuring the macro effectiveness of the DSP (by comparing the “treated” group with the “control” group) and by measuring the micro effectiveness of Distance Support on individual subjects, allowing us in particular to measure the effect of the individual “intensity of participation” in DSP-related activities (Wydict, Glewwe, and Rutledge 2013, 2016).⁶⁴ We hope, with this research on the DSP, to contribute to the very limited literature on child sponsorship, a key forward-looking instrument for fostering human dignity and development.⁶⁵

⁶³ We thank Francesca Oliva, Valeria Presciutti, and Lorna Beretta from the AVSI Foundation for helping us to identify the case study and the AVSI-RDC team for their collaboration.

⁶⁴ Wydict, Glewwe, and Rutledge (2013), one of the very few studies on personalized international child sponsorship by Compassion International, also controls for outcomes by children's participation in Compassion programming of extra-school educational support, including activities such as retreats and camps.

⁶⁵ Wydict, Glewwe, and Rutledge (2013) make a significant reference to the importance of subjective transformation in development: “The most salient characteristic that distinguishes *Compassion's* program from comparable interventions is its emphasis on raising children's self-esteem, reference points, and aspirations. As such, it aims to simultaneously relieve both internal and external constraints that can impede progress in education” (Ibid., 426); they conclude: “Traditionally, development economics—and indeed the practice of economic development—has focused on the relief of external constraints such as school quality, infrastructure, and credit. But it may be that the internal constraints of the poor also contribute to poverty traps in important ways. Further observational and experimental research should

Subjects

Out of the 178 schoolchildren newly entering the AVSI DSP in the Goma area in 2016, we identified the subset of 137 schoolchildren participating in our longitudinal study. Age was the main criterion for selecting them: the two-year elapse of time between the first and the second administration of the survey was a reason to include in the sample only those children who will still be attending school in two years, that is first to fourth graders. We subsequently reduced the sample on the base of logistical considerations, as we decided to perform the survey only in those schools where at least two children participate in DSP, so as to reasonably contain the time and distance burdens of collecting questionnaires.

As control group, we identified a group of schoolchildren not accessing the DSP, on a “matching-pairs” basis: for each schoolchild accessing the DSP, two children in the same school were identified as members of the control group, matching school class, sex, and age. The decision to have two children in the control group per each child in the DSP is based on the possibility that children currently listed in the control group may, in the next two years, be included in the DSP—thus automatically ceasing to be part of the control group.

Here is the summary of schools and schoolchildren involved:

TABLE 3			
SCHOOLS AND NUMBER OF CHILDREN INVOLVED IN THE RESEARCH PROJECT			
School	Number of schoolchildren in the survey		
	DSP	Control group	TOTAL
EP Neema	61	122	183
EP Saint Benoit	9	18	27
EP Virunga Quartier	22	44	66
EP Amkeni	3	6	9
EP Katoyi	5	10	15
EP Osso Kato	2	4	6
EP Virunga Nord	3	6	9
CS Saint Michel	8	16	24
EP La Sainte Trinité	21	42	63
EP Saint Charles Lwanga	3	6	9
TOTAL	137	274	411

seek to better understand the internal constraints faced by the poor and how development efforts that seek to release internal constraints can complement purely economic interventions and incentives.” (Ibid. 428)

For each child (both in the DSP and in the control group) school staff will provide information on a specifically designed personal fact sheet, which summarizes useful personal data (age, sex, school class...) and other indicators concerning the child's health and nutrition, informal labor activities, and family socioeconomic situation; school staff will also provide information on school attendance and school performance. Information are provided with parents' or legal guardians' approval. For DSP children we will also use the more detailed vulnerability assessment sheet prepared by AVSI-RDC, which includes information on children's and families' participation in specific (educational, recreational...) community-based activities related to the DSP.

TABLE 4**DEMOGRAPHICS OF DSP CHILDREN AND CONTROL GROUP**

	DSP			Control group		
Variable	Obs	Mean°	Std. Dev.	Obs	Mean	Std. Dev.
sex°	130	1.00	0.50	269	1.00	0.50
age	130	8.12	1.71	269	7.85	1.60
grade	130	2.28	1.04	269	2.26	1.06
distance	130	0.88	1.08	269	0.73	1.14
health°	129	1.00	0.37	268	1.00	0.31
children_in_family	130	2.85	0.85	268	2.84	0.81
meals	130	1.79	0.69	269	1.86	0.54
work°	130	1.05	0.21	269	1.02	0.14
parents°	130	1.00	0.68	269	1.00	0.40
parents_job°	130	3.00	1.32	269	3.00	1.18
parents_alph°	130	1.00	0.49	269	1.00	0.47
house°	130	2.00	2.14	269	2.00	0.41
water°	130	2.00	0.25	269	2.00	0.14

Experimental Procedures

The longitudinal study is meant to collect survey and personal information for both the children receiving treatment and the children in the control group, at the beginning of the DSP treatment and after two school years.

External interviewers, locally recruited by AVSI-RDC among trustworthy external collaborators who have no connection with either the schools or with the DSP, administered the survey to the 411 children at their respective schools on March 23 and 24, 2016, according to a

timetable agreed with the school principals. School principals introduced the group of external interviewers to the children the day before, to reassure the children that these people can be trusted and that the reward (packaged cookies) are tasty, healthy, and safe. The interviewers, who are bilingual (French and Swahili), familiar with the environment that the children experience, and well suited to interact with the children, showed them the choices in a well defined visual manner and transcribed their choices (and their verbal expressions when requested) on a coded individual questionnaire. Interviewers also calculated and delivered the rewards to each child immediately after he/she completed the individual survey.

As in the research projects previously presented, anonymity of responses is fully preserved. The CSCC receives the completed questionnaires and the *fiches de données personnelles/fiches de vulnérabilité* with a code that uniquely identifies the same child for both waves of surveys; AVSI-RDC keeps track of the matching between codes and the schoolchildren's names, so as to perform the second wave of the survey, but has no access to the completed questionnaires.

Culturally adapting the questionnaire to schoolchildren with little or no literacy and numeracy required drastic simplification of the choice situations and an unambiguous, totally visual approach. The survey includes six behavioral situations and games; one textual self-expression task (verbally expressed by the children in Swahili, immediately transcribed by interviewers in Swahili onto the paper questionnaire, and subsequently translated into French by three people working as a team in order to minimize spurious translation biases); and one psychological test, a modified version of the “marshmallow” test (Mischel 1958).⁶⁶ The behavioral situations and games include the Dictator Game, the DICE Sincerity Test, and four extremely simple experimental situations meant to assess the altruism, inequality aversion, and other-regarding preferences of the child who is making the decisions. AVSI-RDC staff suggested that payoffs be delivered to children in form of packets of cookies (safer and easier to transport and preserve than street food).

The four experimental situations combine three situations initially proposed for studying pro-social behavior in young children and primates (Fehr, Bernhard, and Rockenbach 2008),⁶⁷

⁶⁶ For a description of the marshmallow test, see <http://www.newyorker.com/magazine/2009/05/18/dont-2>.

⁶⁷ “Other-regarding preferences are decisive for the human ability to achieve and maintain cooperation in large groups of genetic strangers” (Fehr, Bernhard, and Rockenbach 2008, 1079). The authors perform

namely “pro-social,”⁶⁸ “envy,”⁶⁹ and “sharing”⁷⁰ situations, as observed in one-shot experiments. Our study will longitudinally replicate Fehr’s experiment after two years, thus allowing us to explore whether, and to what extent, the process of individual development of pro-social attitudes is due to age and schooling (which are common factors for all children) or can be related to the transformative impact of community-based education received within a love-based program such as the DSP. Besides replicating situations (Fehr, Bernhard, and Rockenbach 2008), we also decided to include in our experiment a fourth behavioral situation, meant to expand our information on pro-social behavior and inequality aversion.⁷¹ In each situation, the child has to select one out of two alternative distributions of in-kind goods (cookies) between the child her/himself and another anonymous child attending a different school.⁷² For each of the four situations, the two alternatives allocations of cookies are visually presented on a table, so as to make the two alternative choices as clear as possible to the children.

We also introduced in the survey a modified version of the DICE sincerity test, where two independent dice (one red, one blue) are simultaneously rolled, after the child has decided

one-shot experiments with anonymous partners in order to assess the development of (non-parochial) pro-social behavior in very young children. Their study aims at exploring at what age other-regarding preferences are manifested and how they change with age, also comparing human and other primates’ behavior.

⁶⁸ In the *pro-social* situation, the child has to choose between the allocation 1,1—that is, one for him/herself and one for the partner—and the allocation 1,0. This situation measures some elementary form of pro-sociality, as by choosing 1,1 the subject can expand others’ access to the payoff good at no cost to him/herself.

⁶⁹ In the *envy* situation, the child has to choose between 1,1 and 1,2. Here again, it is possible for the child to deliver a benefit to the anonymous partner at no cost, but the choice 1,2 leads to a situation of inequality, disadvantageous for the decision-maker.

⁷⁰ In the *sharing* situation, the child faces the choice between 1,1 and 2,0. This choice is meant to measure a strong form of inequality aversion, because providing a benefit for the anonymous partner is costly to the decision-maker.

⁷¹ In this further version of the pro-social/inequality aversion situation, the child faces the alternatives 1,1 and 3,2—the latter being a mix of pro-social behavior and expression of low concern for inequality, as the outcome in this case is more favorable to the decision-maker.

⁷² Interaction with anonymous partners is more clearly related to other-regarding preferences, while within-group interaction may include self-regarding preferences (expected reciprocity) or gratitude. We decided not to pursue controlling for “parochial” preferences, since this strategy would have required a larger (unavailable!) group of children under the DSP.

the color of choice in his/her mind. That is, the outcome of each throw is not limited to seven as in the standard DICE procedure.⁷³

The survey procedure concludes with a modified version of the “marshmallow” test,⁷⁴ which allows us to observe children’s behavior with respect to self-control and delayed gratification. This is the only psychological test we use, given the children’s age and literacy level.

CONCLUSIONS

This paper presents an innovative, interdisciplinary methodology for assessing the transformative impact of receiving care and support within a love-based community. We use a longitudinal analysis of individual choices and answers in a survey that includes a mix of behavioral situations and games, textual answers, and validated psychological tests.

Note that the normal use of behavioral parameters is to assess macro differences across groups, at a given point in time. We are the first, to our knowledge, to use behavioral parameters to longitudinally monitor transformation. In the psychological literature, it is held that deep personality traits and behavioral attitudes are stable over time; we tested whether such a hypothesis holds for behavioral economics parameters, absent significant life-changing experiences. Their parameters proved to be stable, enabling us to interpret statistically significant changes in parameters as evidence of the transformative impact of a change in existential experience.

The overall research project is innovative both in its object (the transformative process of vulnerable people experiencing being loved within stable community relationships) and in its methodology—but it is also very risky. Since this is, to the best of our knowledge, the first longitudinal application of behavioral experiments plus textual analysis, we are likely to face unexpected difficulties. Moreover, we are dealing with vulnerable, peripheral subjects who are very different from the typical participants in behavioral economics experiments (university students).

⁷³ As the procedure is repeated twenty times in each survey, the expected value of the game depends on the average of the actual twenty outcomes and is different for each child. This makes the computing procedures more cumbersome for the CSCC, but the game is thereby straightforward for the children.

⁷⁴ We use cookies for this final test as well, leaving the child alone with one pack of cookies after informing him/her that if he/she does not open the pack he/she will receive a second pack. The absence of the interviewer is set at ten minutes.

We hope researchers in various disciplines, interested in human and social development, will provide further comments and suggestions. We are very open to possible collaborations on other case studies.

APPENDIX

TABLE 1A

English translation of keywords provided in fifteen interviews with five communities' staff members, directors, and people who completed rehab (second pilot study on Addiction

Arezzo	ex-addicted	love, forgiveness, brotherhood, respect, suffering, communion, patience
	social worker	brotherhood, love, equality, benevolence, healing, passion, smile
	director	communion, courage, humility, heart, dream, chaos, unity,
Caltanissetta	ex-addicted	honesty, respect, forgiveness, understanding, work, tenacity, motivation
	social worker	hospitable, familiar, un-intrusive, understanding, professional, serious, helpful
	director	relation, team, community, love, culture, respect, falling in love
Frosinone	ex-addicted	joyful, demanding, strong, current, without a penny, supportive, charitable
	social worker	hospitable, love, change, commitment, seriousness, truth, humanity
	director	potentiality, family, person, communion, healing, Gospel, hope
Pistoia	ex-addicted	love, forgiveness, sharing, altruism, gift of oneself, respect, prayer
	social worker	joy, love, truth, humanity, underworld, healing, Jesus
	director	love, unity, communion, confidentiality, helpfulness, understanding, authoritativeness
Trento	ex-addicted	faith, courage, friendship, gift of oneself, cheerfulness, hassle, steady commitment
	social worker	love, hospitality, home, change, freedom, toil, strength
	director	love, family, professionalism, transparency, personalized attention, professional growth, quality

Source: FETZER – CSCC – UCSC (2014).

FIGURE 1A

WORDS CLOUD, BASED ON FIFTEEN INTERVIEWS WITH FIVE COMMUNITIES' STAFF MEMBERS, DIRECTORS, AND PEOPLE WHO COMPLETED REHAB



Source: FETZER – CCCC – UCSC (2014).

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