

Research Topic White Paper #2

Institute for Research on

Unlimited Love

Altruism, Compassion, Service

PUBLIC HEALTH AND MEDICINE PROGRAM AREA

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I. Introduction: Public Health and Medicine Program Area

For the past four decades, research and writing in social epidemiology have explored risk-enhancing or -mitigating effects of personal characteristics and interpersonal statuses. Empirical investigations have established linkages between psychosocial constructs and rates of morbidity and mortality in diverse populations. Theoretical and conceptual work has been instrumental in development of mid-range theories which posit multifactorial models of disease etiology or of determinants of population health highlighted by complex interrelationships among characteristics of human hosts and social environments. By tradition, this work has focused on the pathogenic effects of deleterious, dysfunctional, or maladaptive constructs (e.g., stressful life events, Type A behavior, external locus of control, daily hassles, inadequate support networks). This emphasis has served to marginalize both the study of more positively defined constructs (such as the “classical sources of human strength” [1]) and an orientation seeking to identify factors promoting salutogenesis [2]. Epidemiologic research on constructs such as hope, forgiveness, gratitude, love, and the like has thus not been forthcoming [3].

A long-term goal of the IRUL Public Health and Medicine Program Area is to encourage a cross-fertilization of the fields of positive psychology and social epidemiology. Foremost among “positive” psychosocial constructs, giving and receiving love has received preliminary scholarly attention requisite to furthering epidemiologic research [4]. Mid-range theories of love have been proposed by psychologists, and scales and indices developed and validated. Most of this work, though, has focused on romantic attachments, in keeping with the emphasis among researchers in the psychology of love [5]. Broader multidimensional theories, such as the sophisticated taxonomy of sociologist Pitirim Sorokin, have been few. Sorokin conceived of love as comprising seven “aspects” (religious, ethical, ontological, physical, biological, psychological, social) characterized by five “dimensions” (intensity, extensity, duration, purity, adequacy) [6]. Pilot research recently funded by the Institute of Noetic Sciences has provided a preliminary version of a scale designed to assess love accordingly [7].

Concomitant theoretical work by the principal investigator of the Sorokin study has outlined an “epidemiology of love” [4]. Two approaches are possible. The first is the standard approach of epidemiologists investigating population health effects of psychosocial host characteristics. Respective psychosocial constructs, operationalized as exposure variables, are examined in relation to population health parameters in order to identify an increase or decrease in the risk of subsequent morbidity or mortality. Factors associated with increased risk are known as risk factors; those associated with decreased risk are termed protective factors. New research findings point to one aspect of Sorokin’s theory of love, a loving relationship with God, as a significant protective factor against both poor physical health and depressive symptomatology [7].

A second, more novel approach to the epidemiology of love is to treat love as an agent—specifically a salutogenic agent—capable of effects across the natural history of disease, both preventive and therapeutic. This approach is based on traditional conceptual models developed for infectious disease epidemiology, including description of the characteristics and

transmission of pathogenic agents and investigation of agent-host interactions in disease causation. This framework is familiar to epidemiologists, but may be unknown to social and behavioral scientists who conduct health-related research. Possible applications to the epidemiology of love, while not yet empirically demonstrated, have been described in depth [4].

The primary objective of the IRUL Public Health and Medicine Program Area is to solicit proposals seeking to investigate health effects of giving and receiving love. Several caveats should be noted. First, a concise definition of love will not be imposed. Indeed, the psychometric validation of reliable new instruments for use in health research is one of five main topics to be supported. Second, health is defined as liberally as possible. Investigators may focus on clinical, functional, or subjective dimensions of physical or psychiatric well-being, and may rely on self-reported symptoms, clinical signs, formal diagnostic categories, or biomarkers of disease. Third, proposals are sought on love-health associations across the natural history of disease. This includes love as a promoter of wellness, as a primary-preventive factor against morbidity, or as a factor in illness recovery or curing of disease.

The IRUL Public Health and Medicine Program Area encompasses five broad research topics. Proposals are encouraged to place primary emphasis on one of these topics, although multifaceted studies which engage more than one topic will be considered. These topics include (a) epidemiologic research, (b) clinical research, (c) basic-science research, (d) psychophysiological research, and (e) psychometric research. For each topic, two key research questions are listed; proposals addressing other related issues or questions will be considered.

II. Key Research Questions

1. Epidemiologic Research

Proposals seeking funding under this topic include epidemiologic research treating love, broadly defined, as an exposure (i.e., independent) variable or construct domain. The focus should be on population-based investigations of rates of morbidity, mortality, or disability due to physical illness or psychiatric outcomes, with an emphasis on love as a salutogenic factor in primary prevention or health promotion. Key research questions for this topic include:

Question 1.1

Is love a protective factor against morbidity and mortality?

Question 1.2

Does love promote health, psychological well-being, and high-level wellness?

Despite emergence of the psychology of love as a scholarly field, empirical investigations linking love to psychosocial or health-related outcomes have been few. Epidemiologic and other health-related investigations have provided, however, encouraging preliminary evidence of a salutary effect of love, variously defined. Spousal love has been associated in males with reduced

incidence of angina pectoris [8] and duodenal ulcer [9]. Parental love has been linked to lower morbidity due to several chronic diseases [10], including psychological distress [11], and also to lower rates of cancer mortality [12]. Aspects of love also have been associated with greater self-esteem [13] and less suicidal behavior [14], and with higher global self-ratings of health [7]. With the exception of the latter study, this research has been characterized by single-item and indirect approaches to assessing love, typically undefined. More expansive or multidimensional approaches, such as proposed by Sorokin, have not been forthcoming, nor have studies of love as a promoter of wellness, as opposed to a preventer of illness.

Under this research topic, population-based investigations of a possible love-health connection are sought. Descriptive and analytic epidemiologic studies will be supported, as will evaluative research of public health interventions seeking changes in outcomes. Prospective cohort or retrospective case-control designs are preferred, as are longitudinal approaches generally, but prevalence study (i.e., cross-sectional) designs will be considered if samples are drawn through probability-based methods. IRUL is especially interested in studies which propose to use validated scales for assessing one or more dimensions of love, multivariable approaches for modeling determinants of health outcomes, and samples containing ethnic minority, older adult, socioeconomically disadvantaged, or international populations.

2. Clinical Research

Proposals seeking funding under this topic include research on love as a feature of clinical interactions. This includes studies of love as a therapeutic intervention, as well as investigations of love as a salutary component of the practitioner-patient relationship. The focus should be on studies of love as a salutogenic factor in coping with sickness or medical treatment, in recovery from illness, or in healing or curing of disease. Key research questions for this topic include:

Question 2.1

Does love exhibit therapeutic efficacy?

Question 2.2

Is love a salutary component of the patient-provider relationship?

Popular writing by physicians and other providers bear witness to a growing belief in love as a salient ally in the clinical setting [15-16]. The experience of feeling love, for oneself and from others, has been described as a powerful resource for both healing of illness [17] and psychological growth and self-actualization [18]. A loving and empathic relationship between practitioner and patient has been described as a key element in a successful course of medical treatment [19]. Loving empathy, moreover, has even been proposed as a necessary condition for efficacious healing prayer [20]. Empirical verification of these observations, however, has not been as forthcoming. An encouraging sign is recent funding by the Fetzer Institute of several studies investigating love as a therapeutic intervention [21], a characteristic of exceptional

clinicians [22], and a capability enhanced through participation in a training program for clinicians [23].

Under this research topic, clinical trials and other studies investigating loving transactions in the clinical setting are sought. Studies investigating the therapeutic efficacy of love through randomized controlled trials or other experimental or quasi-experimental methods are encouraged. Medical outcomes research will be supported for studies of love as a facilitator of coping or of recovery from illness, as will studies of practitioner-patient relations through a variety of empirical or qualitative approaches. IRUL is especially interested in studies utilizing creative, innovative conceptions of love-as-intervention (e.g., non-Western psychotherapeutic approaches, healing touch or other bioenergy approaches), interventions or interactions which engage the spiritual dimension (e.g., prayer, focused meditation, directed intentionality), and patient samples including chronic degenerative diseases of unknown or controversial etiology for which conventional treatment options are limited (e.g., chronic fatigue syndrome, fibromyalgia, multiple chemical sensitivity, rheumatoid arthritis, multiple sclerosis, AIDS).

3. Basic-Science Research

Proposals seeking funding under this topic include social, behavioral, or biomedical research on mechanisms or mediating factors which underlie or explain a love-health or love-healing connection. The focus should be on studies seeking to explain the effects of love as an antecedent of physical health or mental or emotional well-being, or as a component of the salutogenic process. This research topic differs from the first two topics, above, in that the emphasis here is on basic-science research seeking to answer “how” and “why” questions regarding the operation of love as an antecedent factor in health or healing. Proposals are encouraged from psychosocial researchers and from basic scientists regardless of discipline, including physiologists, biochemists, immunologists, neuroscientists, and others. Key research questions for this topic include:

Question 3.1

What are the physiological mediators of the love-health and love-healing relationships?

Question 3.2

What are the psychosocial mediators of the love-health and love-healing relationships?

Epidemiologic and clinical research are designed to answer who, what, where, and when questions; rarely are how and why questions engaged [24]. This generally requires studies of intervening mechanisms or of mediating factors in observed relationships between exposures and health outcomes. Very little work has ever explored the component features or processes operating within a connection between love and health, whether physiological or psychosocial. One famous study investigated effects of watching a film about Mother Teresa on salivary

immunoglobulin (S-IgA) concentration, a marker of immune function [25]. S-IgA concentration rose significantly in study subjects as they viewed the film. It also remained high for an hour after the film ended in those who participated in an exercise in which they recalled times in their life when they had experienced love. A recent study identifying a salutary effect of a loving relationship with God determined that this apparently protective effect remained despite controlling for effects of 15 hypothesized mediating factors totaling nearly 40% of the variance in health [7]. These mediators included constructs related to religious involvement, supportive networks, psychological resources, medical history, physical functioning, and other factors.

Under this research topic, both observational and laboratory studies will be supported which empirically test theories or models of how love impacts on health, the prevention of disease, the healing process, or the body. Investigations of physiological and/or psychosocial mechanisms or mediators linking love with general or specific health outcomes or markers are encouraged. IRUL is especially interested in studies grounded in “outside-the-box” thinking, as well as in interdisciplinary and multidisciplinary collaborations among biomedical scientists, social and behavioral scientists, epidemiologists, and medical and nursing researchers, and in studies which utilize sophisticated analytical methodologies, such as structural modeling.

4. Psychophysiological Research

Proposals seeking funding under this topic include studies of psychophysiological correlates of the experience of love. The focus should be on research which investigates psychophysiological responses to giving and receiving love, as measured by EEG or other instrumentation, paper-and-pencil measures of psychological functioning, or other neurophysiological or cognitive markers. Proposals for cutting-edge mind-body or brain-mind investigations from unconventional perspectives are encouraged. This includes studies engaging concepts from non-Western or complementary and alternative medical (CAM) systems, consciousness research, and the emerging field of energy medicine. Key research questions for this topic include:

Question 4.1

Are there psychophysiological correlates of giving or receiving love?

Question 4.2

What can non-Western, unconventional, and CAM perspectives on mind-body connections tell us about love?

Connections between mind and body, and brain and mind, have been subject in recent years to increased scrutiny, theoretically and empirically, by psychologists and neuroscientists. The experience of loving emotions or intentions represents an exciting frontier for research designed to map neurological and cognitive correlates of positive psychological states. As with other research topics under this program area, initial empirical observations are only sketchy. It

has been hypothesized [26] that a state of loving intimacy may be “potentiated by a relative inhibition of the left hemisphere’s critical analytic brain functions” (p. 167) such as may occur in a “cognitive-sensory inhibitive state (like samadhi or satori)” (p. 167), or through hypnosis, due to projection of feelings of love onto a love object. In one study, subjects focused on loving intentions experienced increased sympathetic/parasympathetic balance and entrainment of heart rate variability, pulse transit time, and respiration [27]. The researchers concluded that self-management of one’s mental and emotional state engendered “a state of deep peace and inner harmony” (p. 262). Others, from Sorokin [28] to contemporary psychophysiologicalists [29], have proposed that bioenergetic or psychophysical effects of love mediated by psychophysiological states of consciousness may facilitate physical healing [30].

Under this research topic, proposals are sought which feature experimental, quasi-experimental, and/or laboratory research, *in vivo* or *in vitro*, on mind-body interactions in humans or other biological systems. Investigations which document neurophysiological or neuropsychological states of people experiencing love are especially encouraged. Studies of the widest possible range of variables will be supported (e.g., cognitions, affects, beliefs, behavioral intentions, states or traits, neurochemical markers, neurological functioning, brainwave maps, states of consciousness). IRUL is especially interested in research utilizing biofeedback or neurobiofeedback, investigating human potential and self-regulation, or examining subjects experiencing affectional attachments with significant others or undergoing meditation or other spiritual practices which may produce transcendent, numinous, or unitive states.

5. Psychometric Research

Proposals seeking funding under this topic include theoretical, conceptual, and methodological research on assessment of love for health-related research. No limitations are placed on theoretical perspective or on the disciplinary background of the investigator. The focus here should be on development and psychometric validation of new theory-driven instruments or on refinement or new applications of existing measures for use in health or medical studies. Key research questions for this topic include:

Question 5.1

Can new assessment instruments for love be developed and validated?

Question 5.2

What are the most promising theoretical and conceptual models of love?

Since the early 1970s, psychologists have developed and validated instruments assessing aspects or dimensions of love. Most of this work has focused on romantic expressions of love, as manifested in dating, sexual, life-partnering, or marital relationships. Examples include multi-item instruments such as the Erotometer [31], Love Scale [32], and Love Component Scales [33], and the multidimensional Love Attitudes Scale [34]. This work has made a strong contribution to the psychology of love, but has been limited in its impact on health research for several reasons.

First, epidemiologic and clinical studies of love, as of other psychosocial topics, have typically relied upon single-item measures. Second, psychometric properties of the most ambitious of these instruments, the Love Attitudes Scale, have been questioned [35]. Third, broader definitions of love, extending the construct beyond affectional bonds, have rarely been considered in development of assessment instruments. (Efforts to validate a multidimensional measure based on Sorokin's taxonomy are a recent exception [7].) Perhaps this is because original theoretical work on love in fields other than psychology—for example, sociology [36] and medicine [37]—has been largely dormant since the 1950s.

Under this research topic, proposals are sought which use state-of-the-art psychometric procedures, such as confirmatory factor analysis, to develop and validate measurement instruments. A premium is placed on positing theory-driven models as a foundation for instrument development. Indeed, proposals will be accepted which focus solely on careful delineation of new theoretical or conceptual models, drawing on existing theory, research, or clinical observation. Fundable products under this program area thus include both (a) new instruments validated with preliminary data and (b) comprehensive reviews coupled with proposals of new theoretical or conceptual models. IRUL is especially interested in “horizontal” and “vertical” expressions of love (i.e., among living beings or between humans and God, respectively), multidimensional self-report or interviewer-administered indices, and data analyses using sophisticated psychometric procedures on systematically sampled respondents.

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III. ANNOTATED BIBLIOGRAPHY¹

Green, Judith, and Robert Shellenberger. (1993). "The Subtle Energy of Love." Subtle Energies 4(1):31-55. That love promotes health surprises few people and yet from the perspective of poets, philosophers and healers who for millennia have understood powers of love, the scientific study of love and physical health is in its infancy. Because love has many facets and is manifested in many ways as described here, it was banned from Western Science that insisted upon observable and simple independent variables. In this article we present data

indicating the salutary effects of love on physical health; these data are from several areas—psychology, sociology, medicine, epidemiology, and health—and together form a foundation for understanding and enhancing love and its effects. Three processes are formulated to explain the health promoting effects of love—psychophysiological, psychophysical and psychosocial/behavioral. Love is described as an energy by virtue of its capacity to produce effects; it is subtle, not because its effects are subtle, but because it has been ineffable to science.

Laskow, Leonard. (1992). *Healing with Love: A Physician's Breakthrough Mind/Body Medical Guide for Healing Yourself and Others: The Art of Holoenergetic Healing*. San Francisco: HarperSanFrancisco. In this book, Laskow, a physician, discusses the importance of feeling and expressing love for attaining what he terms “holoenergetic healing.” He describes this as a transformational process that can bring harmony and balance into the deepest recesses of the self. He also describes in some detail how emotions can influence health both through psychoneuroimmunologic mechanisms and through effects on the human bioenergy system. *Healing with Love* contains a lot of material from non-mainstream sources, including the esoteric traditions, complementary and alternative medicine, the new physics, energy medicine, and transpersonal psychology. An especially attractive feature is the inclusion of numerous meditations, visualizations, breathing exercises, and other step-by-step experiential techniques that assist the reader in opening up to their innate capacity for love.

Levin, Jeff. (2000). “A Prolegomenon to an Epidemiology of Love: Theory, Measurement, and Health Outcomes.” *Journal of Social and Clinical Psychology* 19:117-136. Existing research and writing on the topic of love is explored in order to encourage study of the epidemiology of love. Theoretical work in the psychology of love is reviewed, followed by a profile of measurement instruments developed to assess love. Next, existing empirical findings linking love-related constructs to health and healing are summarized. Finally, an outline is provided of pertinent questions in the epidemiology of love. The possibility is raised that love may not be just a host factor, similar to other psychosocial constructs, but also an agent of salutogenesis.

Levin, Jeff. (2001). “God, Love, and Health: Findings from a Clinical Study.” *Review of Religious Research* 42:277-293. This study identifies a significant health effect of a loving relationship with God. Based on work by Sorokin, an eight-item scale was developed and validated to assess what he termed “religious love”: the feeling of loving and being loved by God. Using a sample of 205 family practice outpatients, hierarchical OLS regression was used to investigate the effect of this construct on a standard self-rating of health. Several sets of factors were hypothesized to mediate the relationship between religious love and self-rated health: religious involvement, social resources, psychological resources, objective health status, and sociodemographic factors. These effects were controlled for in six successive models. In the end, despite controlling for the effects of 15 variables and scales that accounted for nearly 40% of the variance in self-rated health, the statistically significant association between religious love and self-rated health at baseline ($r = .33, p < .001$) remained strong, significant, and only marginally affected ($r = .24, p < .05$). These findings provide evidence that loving and being loved by God exerts a positive influence on perceptions of health.

Pincus, Alexis G., and Carmen C. Cabrera. (1995). *Loveology*. Cheshire, CT: The Pincus Family. This self-published book is an outstanding summary overview of taxonomies,

dimensions, and theories of love. It was a labor of love, so to speak, written by a retired academic engineer and his wife, a clinical psychologist. Loveology provides an especially comprehensive review of theoretical perspectives in the psychology of love, as well as a considerable amount of useful health-related material. A highlight is the chapter entitled, “Biological Love,” which includes speculation on biological, neurological, endocrinological, and biochemical features and correlates of the experience of love. Although the authors are “outsiders” to the academic field of love research, this book is thorough, evenhanded, scholarly, and very densely referenced, with a nearly 60-page bibliography.

Sorokin, Pitirim A. (Editor). (1950). Explorations in Altruistic Love and Behavior. Boston: The Beacon Press. This volume represents the proceedings of the first symposium on love convened by Sorokin’s Harvard Research Center in Altruistic Integration and Creativity. It was the initial one of several volumes on the topic published by Sorokin in the 1950s. Explorations contains 17 thought-provoking essays and reviews from leading scholars in the social, behavioral, and natural sciences, including Ashley Montagu, Gordon Allport, and Milton Greenblatt. Sorokin was not afraid to invite outside-the-box thinkers; highlights include Swami Akhilananda, J.B. Rhine on parapsychology, and essays on extrasensory perception and on EEG correlates of personality. The most lasting contribution is Sorokin’s own essay entitled, “Love: Its Aspects, Production, Transformation, and Accumulation,” where he first proposed his famous taxonomy of the aspects and dimensions of love.

Sternberg, Robert J., and Michael L. Barnes. (Editors). (1988). The Psychology of Love. New Haven, CT: Yale University Press. The first and still definitive scholarly book on the psychology of love, this edited volume remains the most comprehensive summary of conceptual models of psychological dimensions of love and of theoretical perspectives on love within academic psychology. The highlight of this book is a lengthy section detailing “Global Theories of Love.” This section provides a series of excellent overviews of several taxonomies, multidimensional scales, and mid-range perspectives, including behavioral, cognitive, and interpersonal takes on the psychology of love. Additional material focuses on romantic, sexual, and marital expressions of love, by far the principal focus of empirical research on love among psychologists. This important volume is highly recommended as the starting point for any serious scholarly exploration of this topic.

¹Annotations to the three peer-reviewed journal articles are the original abstracts. Annotations to the four books are the comments of the present author.